1.1 FURROWED ROADWAY SLOPES (DIST STD 1.1)
3.1 MAILBOX TURNOUT IN CURB AND GUTTER SECTION (DIST STD 3.1)
4.1 PC CONCRETE ISLANDS AND MEDIANS ACCESSIBLE TO THE DISABLED
20.1 HOT-MIX ASPHALT APPROACHES AND MAILBOX RETURNS (DIST STD 20.1)
25.1 ENTRANCE APPROACHES – URBAN AREA (DIST STD 25.1)
32.1 SEWER AND WATER MAIN CROSSINGS (DIST STD 32.1)
33.1 CONCRETE COLLARS FOR PIPE OR BOX CULVERT EXTENSIONS (DIST STD 33.1)
34.1 BOX CULVERT END SECTIONS (DIST STD 34.1)
36.1 TEMPORARY ROAD CLOSURE EXPRESSWAY (DIST STD 36.1)
37.1 TRAFFIC CONTROL FOR THREE LANE SECTION (DIST STD 37.1)
38.1 TRAFFIC CONTROL FOR TRANSITION AREAS (DIST STD 38.1)
39.1 TRAFFIC CONTROL TYPICAL WEAVE (DIST STD 39.1)
40.1 TRAFFIC CONTROL FOR ROAD CLOSURE (DIST STD 40.1)
40.1a TRAFFIC CONTROL FOR ROAD CLOSURE WITH SIDE ROAD WITHIN 150’ OF CLOSURE (DIST STD 40.1a)
41.1 TYPICAL PAVEMENT MARKINGS (DIST STD 41.1)
44.1 PAINTING DETAILS (DIST STD 44.1)
53.1 REMOVE AND REEREECT STEEL PLATE BEAM GUARDRAIL (DIST STD 53.1)
54.1 TRAFFIC BARRIER TERMINAL, TYPE 2 (27” HEIGHT) (DIST STD 54.1)
68.1 SLOTTED DRAIN PIPE (VARIABLE HEIGHT) (DIST STD 68.1)
71.1 DETAIL OF FLOOD GATE (DIST STD 71.1)
72.1 40’ SINGLE LANE MEDIAN CROSSOVER (45 mph WORK ZONE SPEED LIMIT)
73.1 50’ SINGLE LANE MEDIAN CROSSOVER (45 mph WORK ZONE SPEED LIMIT)
74.1 64’ SINGLE LANE MEDIAN CROSSOVER (45 mph WORK ZONE SPEED LIMIT)
75.1 40’ SINGLE LANE MEDIAN CROSSOVER (55 mph WORK ZONE SPEED LIMIT)
76.1 50’ SINGLE LANE MEDIAN CROSSOVER (55 mph WORK ZONE SPEED LIMIT)
77.1 64’ SINGLE LANE MEDIAN CROSSOVER (55 mph WORK ZONE SPEED LIMIT)
78.1 88’ SINGLE LANE MEDIAN CROSSOVER (55 mph WORK ZONE SPEED LIMIT)
79.1 40’ TWO LANE MEDIAN CROSSOVER (45 mph WORK ZONE SPEED LIMIT)
80.1 50’ TWO LANE MEDIAN CROSSOVER (45 mph WORK ZONE SPEED LIMIT)
81.1 64’ TWO LANE MEDIAN CROSSOVER (45 mph WORK ZONE SPEED LIMIT)
82.1 40’ TWO LANE MEDIAN CROSSOVER (55 mph WORK ZONE SPEED LIMIT)
83.1 50’ TWO LANE MEDIAN CROSSOVER (55 mph WORK ZONE SPEED LIMIT)
84.1 64’ TWO LANE MEDIAN CROSSOVER (55 mph WORK ZONE SPEED LIMIT)
85.1 88’ TWO LANE MEDIAN CROSSOVER (55 mph WORK ZONE SPEED LIMIT)
86.1 BEVELED PIPE & GUARD DETAIL FOR MEDIAN CROSSOVER
90.1 TRAFFIC BARRIER TERMINAL, TYPE 6B (SPECIAL) (DIST STD 90.1)
92.1 DETAILS OF PLANTING AND BRACING TREES (DIST STD 92.1)
1.1 Include when foreslopes and/or backslopes are more than 10’ in height.

3.1 Use when a mailbox turnout is needed in a curb & gutter section and there isn’t a parking lane or a mail delivery lane.

4.1 Use this when there are cross walks that will go through an island or median. Specify which option the contractor is required to use when building the Concrete Median (Special).

20.1 Include for rural entrances and sideroads on 3R projects, reconstruction projects, or for new entrances. Do not include on 3P or Smart resurfacing projects.

25.1 Include for urban entrances with curb & gutter on 3R projects, reconstruction projects, or for new entrances. Do not include on 3P or Smart resurfacing projects.

32.1 Include in urban projects with proposed storm sewers or water mains.

33.1 Use this for pipe or box culvert extensions. Fill in the information in the table for the Bill of Materials.

34.1 Use this when you have box culvert end sections.

36.1 Use this district standard for any short term closure of an expressway at a diamond interchange.

37.1 Use this district standard for work that will require a lane closure in a three lane section such as a truck climbing lane.

38.1 Use this district standard when there is a transition from a four lane section that transitions to a two lane section.

39.1 Include on 4 lane highways where the contractor may change a portion of the work to the opposite lane.

40.1 Include for a mainline road closure.

40.1a Include for a mainline road closure when a sideroad is within 150’ of the mainline closure.

41.1 Include in projects with pavement marking or raised reflective pavement markers.

44.1 Include in projects with pavement marking on entrance and exit ramps & cloverleafs.

53.1 Use this to remove and re-erect an old type steel plate beam guardrail which has 6” block outs and a 27½” rail height.

54.1 Use this when installing a Traffic Barrier Terminal, Type 2 on the old type of
68.1 This can be used to increase drainage in curb & gutter with very flat grades (less than 0.3%). Also include this when constructing median crossovers.

71.1 Use if a property owner has a fenced field with livestock and a stream or river. The flood gate will be placed near the right-of-way to prevent livestock from leaving the field through the waterway. During high water, the flood gate will open to let water and debris through.

72.1, 73.1, 74.1, 75.1, 76.1, 77.1, 78.1 Use on single lane median crossovers of the median width specified and for the work zone speed limit. Include District Standard 86.1.

79.1, 80.1, 81.1, 82.1, 83.1, 84.1, 85.1 Use on two lane median crossovers of the median width specified and for the work zone speed limit. Include District Standard 86.1.

86.1 Include this on median crossovers, District Standards 72.1, 73.1, 74.1, 75.1, 76.1, 77.1, 78.1, 79.1, 80.1, 81.1, 82.1, 83.1, 84.1, & 85.1.

90.1 Use this on 4-lane highways that go under dual structures and the piers required shielding. The outside of the piers are shielded with impact attenuators. The gap between the piers is shielded using Traffic Barrier Terminal Type 6B (Special). The Traffic Barrier Terminal Type 6B (Special) is required on both sides of the piers.

Design Note: The length of the double thrie beam between the piers must be added on the elevation on the District Standard.

92.1 Include when planting new ball & burlapped trees.
IN GENERAL, THE ENTIRE EARTH SURFACE WITHIN THE RIGHT-OF-WAY SHALL BE SEEDED AND MULCHED. NO AGRICULTURAL GROUND LIMESTONE SHALL BE APPLIED TO THE GRADED ROADBED.

1. PERFORM THE OPERATION OF GROUND PREPARATION.
2. PLOW FURROWS.
3. OF THE PREPARED GROUND AFTER FURROWING.
4. PERFORM THE OPERATION OF SEEDED. THE SEED SHALL BE SOWN ON THE SURFACE EXCEPT AS NOTED HEREIN.

SEQUENCE AND OPERATION FOR SEEDING, MULCHING AND FURROWING OF ROADWAY SLOPES:

1. SPREAD FERTILIZER.
2. PERFORM THE OPERATION OF GROUND PREPARATION.
3. PLOW FURROWS.
4. PERFORM THE OPERATION OF SEEDED, THE SEED SHALL BE SOWN ON THE SURFACE OF THE PREPARED GROUND AFTER FURROWING.
5. THE OPERATION OF COVERING THE SEED, BY HARROWING OR OTHER MEANS, SHALL BE PERFORMED ONLY IF SO DIRECTED BY THE ENGINEER AND SHALL BE INCLUDED TO THE ITEM OF SEEDED.
6. SECTION 250 AND 251 OF THE STANDARD SPECIFICATIONS SHALL GOVERN THIS WORK UNLESS OTHERWISE NOTED IN THE PLANS OR AS DIRECTED BY THE ENGINEER.

GENERAL NOTES

IN GENERAL, THE ENTIRE EARTH SURFACE WITHIN THE RIGHT-OF-WAY SHALL BE SEEDED AND MULCHED. NO AGRICULTURAL GROUND LIMESTONE SHALL BE APPLIED TO THE GRADED ROADBED.

FORESLOPES AND/OR BACKSLOPES 10 FT. OR LESS IN HEIGHT WILL NOT REQUIRE FURROWING UNLESS OTHERWISE NOTED IN THE PLANS OR AS DIRECTED BY THE ENGINEER.

FORESLOPES AND/OR BACKSLOPES OVER 10 FT. IN HEIGHT SHALL BE FURROWED. THE OPERATION SHALL INCLUDE FURROWING THE SLOPES TO FINAL LINE AND GRADE, AS SHOWN ON THE CROSS SECTIONS BEFORE FURROWING IS DONE. FURROWS SHALL BE PLOWED ALONG A LEVEL LINE CONFORMING TO THE CURVATURE OF THE SLOPES. THE COST OF FURROWING SHALL BE CONSIDERED INCLUDED IN THE PROJECT COST AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

SEQUENCE AND OPERATION FOR SEEDED, MULCHING AND FURROWING OF ROADWAY SLOPES:

1. SPREAD FERTILIZER.
2. PERFORM THE OPERATION OF GROUND PREPARATION.
3. PLOW FURROWS.
4. PERFORM THE OPERATION OF SEEDED, THE SEED SHALL BE SOWN ON THE SURFACE OF THE PREPARED GROUND AFTER FURROWING.
5. THE OPERATION OF COVERING THE SEED, BY HARROWING OR OTHER MEANS, SHALL BE PERFORMED ONLY IF SO DIRECTED BY THE ENGINEER AND SHALL BE INCLUDED TO THE ITEM OF SEEDED.
6. SECTION 250 AND 251 OF THE STANDARD SPECIFICATIONS SHALL GOVERN THIS WORK UNLESS OTHERWISE NOTED HEREIN.
**GENERAL NOTES**

1. The longitudinal curb expansion joint shall conform to Section 1051 of the Standard Specifications.

2. The mailbox turnout cross slope shall be as shown above, as shown on the station cross sections or as directed by the Engineer.

3. The mailbox turnout shall be constructed with scored grooves, as specified in Article 423.06 of the Standard Specifications, at approximately 10 ft. centers. In the event there is existing or proposed sidewalk present, these scored grooves shall be placed in line with every other curb in the adjacent sidewalk.

4. The work will be paid for at the contract unit price per square yard for PCC concrete driveway pavement of the thickness specified in the plans. And no additional compensation will be allowed.

5. See the District Standard 25.1 for additional details.

**ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.**
PC CONCRETE ISLANDS AND MEDIANS ACCESSIBLE TO THE DISABLED

**General Notes**
- See Standard 606301 for elevation, cross sections, and details not shown.
- See Standard 424031 for sidewalk details not shown.

The sidewalk should drain to the low side of the island. If necessary, the sidewalk shall be sloped to drain at a maximum 2% grade.

Curb & gutter adjacent to the sidewalk in the interior of the island shall have 2% gutter rise.

The sidewalk should not be closer than 36 in from the corner of the island.

Keyed longitudinal construction joints shall be constructed without tie bars.

Medians and large islands shall consist of PCC Sidewalk 5, Concrete Median Surface 4, and Combination Concrete Curb & Gutter. Type M or B of the size specified. Median island can also be solid concrete medians.

Locations, locations, and sidewalks of the flush sidewalk area shall be determined by the designer and shown on the plans.

The intermediate and small islands will be measured for payment from E.O.P. to E.O.P. using either option 1 or option 2, as directed by the Engineer, and shall be paid for at the contract unit price per SQ FT for CONCRETE MEDIAN SPECIAL which shall include the combination curb & gutter, sidewalk, aggregate fill, concrete median surface, and solid concrete median.

All detectable warnings when distance between back of curb is less than 6 in.

**STATE OF ILLINOIS**
DEPARTMENT OF TRANSPORTATION

**PC CONCRETE ISLANDS AND MEDIANS ACCESSIBLE TO THE DISABLED**
HOT-MIX ASPHALT APPROACHES AND MAILBOX RETURNS

**FIELD ENTRANCE**

- 8" AGGREGATE BASE COURSE TYPE B
- 2" INCIDENTAL HOT-MIX ASPHALT SURFACING

**PRIVATE ENTRANCE**

- 8" AGGREGATE BASE COURSE TYPE B
- 2" INCIDENTAL HOT-MIX ASPHALT SURFACING

**COMMERCIAL ENTRANCE**

- 8" AGGREGATE BASE COURSE TYPE B
- 2" INCIDENTAL HOT-MIX ASPHALT SURFACING

**RURAL ENTRANCE PROFILE APPROACH**

- 8" AGGREGATE BASE COURSE TYPE B
- 2" INCIDENTAL HOT-MIX ASPHALT SURFACING

**SIDE ROAD RETURN/EARTH SHOULDER**

- 3" MIN INCIDENTAL HOT-MIX ASPHALT SURFACING
- AGGREGATE SHOULDER

**SIDE ROAD RETURN/HMA SHOULDER**

- 3" MIN INCIDENTAL HOT-MIX ASPHALT SURFACING
- HMA SHOULDER

**SIDE ROAD RETURN WITH RIGHT TURN LANE**

- 3" MIN INCIDENTAL HOT-MIX ASPHALT SURFACING
- AGGREGATE SHOULDER

**NOTE**

1. Shoulders are to be constructed on the approach side of all intersections of a HMA 25' HD.
2. All PE & CE are to be surfaced to right of way line, and should not be cut into curbs or sidewalks.
3. All PE & CE are to be constructed with an 8" aggregate base course, Type B, and with a 2" incidental hot-mix asphalt surfacing, unless otherwise noted.
4. PE & CE are to be AGGREGATE to right of way or touch down, and should match existing surface.
5. Excavation required for placement of aggregate base course shall be included in the cost of the aggregate base course.
6. On entrances, the contractor has the option of using Radius Returns.
7. See Note 1 for more details.

**SIDE ROADS**

- 3" MAX INCIDENTAL HOT-MIX ASPHALT SURFACING
- AGGREGATE SHOULDER

**MAILBOX TURNOUT**

- 3" MIN INCIDENTAL HOT-MIX ASPHALT SURFACING
- AGGREGATE SHOULDER

**SIDE ROAD RETURN IN EARTH SHOULDER**

- 3" MIN INCIDENTAL HOT-MIX ASPHALT SURFACING
- AGGREGATE SHOULDER

**SIDE ROAD RETURN WITH RIGHT TURN LANE**

- 3" MIN INCIDENTAL HOT-MIX ASPHALT SURFACING
- AGGREGATE SHOULDER

**HMA SHOULDER**

- 3" MIN INCIDENTAL HOT-MIX ASPHALT SURFACING
- AGGREGATE SHOULDER

**AGGREGATE SHOULDER**

- 3" MIN INCIDENTAL HOT-MIX ASPHALT SURFACING
- AGGREGATE SHOULDER

**HOT-MIX VAR. ASPHALT SHOULDER**

- 3" MIN INCIDENTAL HOT-MIX ASPHALT SURFACING
- AGGREGATE SHOULDER

**FULL DEPTH PAVEMENT**

- 3" MIN INCIDENTAL HOT-MIX ASPHALT SURFACING
- AGGREGATE SHOULDER

**AGGREGATE BASE COURSE TYPE B (COMPACTED TO 12")**

- 3" MIN INCIDENTAL HOT-MIX ASPHALT SURFACING
- AGGREGATE SHOULDER

**EARTH SHOULDER**

- 3" MIN INCIDENTAL HOT-MIX ASPHALT SURFACING
- AGGREGATE SHOULDER

**ASPHALT SHOULDER**

- 3" MIN INCIDENTAL HOT-MIX ASPHALT SURFACING
- AGGREGATE SHOULDER

**REFERENCES**

- See Note 1 for more details.
ENTRANCE APPROACHES - URBAN AREA

ENTRANCE OR RADIUS

LOW TO MODERATE VOLUME COMMERCIAL ENTRANCE

COMMERCIAL ENTRANCE ON SKEW (LOW TO MODERATE VOLUME)

PRIVATE ENTRANCE

PRIVATE ENTRANCE ON SKEW

ASCENDING APPROACH

DESCENDING APPROACH

DESIRED AS GRAY MATERIALS SUBGRADE.

DESIRABLE AS GRAY MATERIALS SUBGRADE.

SIDEWALK

VAR.

SIDEWALK

SIDEWALK

SIDEWALK

SIDEWALK

NOTE:

NOTE: ENCROACHMENT ON THE ADJACENT PROPERTY OWNER LAND

NOTE:

NOTE: #1 ENCROACHMENT ON THE ADJACENT PROPERTY OWNER LAND

NOTE:

NOTE: CURVED ENTRANCE RETURNS MAY

NOTE: ENTRANCE OPERATES AS

NOTE: ENTRANCE WIDTH CAN BE

NOTE: HIGH-VOLUME TRAFFIC GENERATOR

NOTE: INDUSTRIAL-COMMERCIAL-RECREATIONAL

NOTE: LOW TO MODERATE VOLUME COMMERCIAL ENTRANCE

NOTE: PRIVATE ENTRANCE ON SKEW

NOTE: PROPERTY LINE

NOTE: RIGHT-OF-WAY

NOTE: INTERSECTING PUBLIC ROAD
SEWER AND WATER MAIN CROSSINGS

THIS DETAIL IS FOR UNKNOWN UTILITIES UNLESS QUANTITIES ARE INCLUDED IN THE PLANS. THE EXTRA WORK WILL BE PAID FOR IN ACCORDANCE WITH ARTICLE 109.04.

WHEN PROPOSED SEWER (OR WATER) IS LOCATED 10'-0" OR MORE FROM EXISTING WATER (OR SEWER) NO SPECIAL CONSTRUCTION REQUIRED.

WHEN PROPOSED SEWER (OR WATER) IS LOCATED LESS THAN 10'-0" FROM EXISTING WATER (OR SEWER) DETAILS BELOW APPLY.

ELEVATION - ECCENTRIC

CASING SHALL BE CAST IRON WITH AN INSIDE DIAMETER 2" LARGER IN DIAMETER THAN ENCASED PIPE OUTSIDE DIAMETER WITH BOTH ENDS OF CASING SEALED.

CASING SHALL BE CAST IRON WITH AN INSIDE DIAMETER 2" LARGER IN DIAMETER THAN ENCASED PIPE OUTSIDE DIAMETER WITH BOTH ENDS OF CASING SEALED.

PROPOSED SEWER

EXISTING WATER MAIN

PROPOSED WATER MAIN

ELEVATION - CONCENTRIC

ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.

ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.

ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.

PROPOSED MANHOLE

EXISTING OR EXISTING SANITARY ELEVATION - CONCENTRIC

PROPOSED MANHOLE

EXISTING OR EXISTING SANITARY ELEVATION - ECCENTRIC

PROPOSED INLET

EXISTING OR STORM SEWER TO BE CONSTRUCTED

EXISTING SEWER OR STORM SEWER TO BE CONSTRUCTED

PROPOSED SEWER LINE

EXISTING SEWER OR STORM SEWER TO BE CONSTRUCTED

EXISTING SEWER OR STORM SEWER TO BE CONSTRUCTED

WATER AND SEWER HORIZONTAL SEPARATION REQUIREMENTS

PROPOSED WATER MAIN ABOVE EXISTING SEWER LINE

EXISTING WATER MAIN ABOVE PROPOSED WATER MAIN

EXISTING WATER MAIN BELOW PROPOSED SEWER LINE WITH MINIMUM 18 VERTICAL SEPARATION

EXISTING WATER MAIN BELOW PROPOSED SEWER LINE WITH MINIMUM 18 VERTICAL SEPARATION

WATER AND SEWER CROSSINGS     32.1
**CONCRETE COLLARS FOR PIPE OR BOX CULVERT EXTENSIONS**

**Bill of Materials**

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<th>Component</th>
<th>#h Bar</th>
<th>#U Bar</th>
<th>#u1 Bar</th>
<th>Length</th>
<th>Cu. Yd</th>
<th>Lbs</th>
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**General Notes**

Concrete Collars shall be constructed of Class 33 concrete in accordance with Section 503 of the Standard Specifications. Reinforcement bars shall conform to Section 509 of the Standard Specifications.

Concrete Collars shall be paid for at the contract unit price per cubic yard for CONCRETE COLLAR. Reinforcement will be paid for at the contract unit price per pound for REINFORCEMENT BARS. Expansion Bolts, when required, will be paid for at the contract unit price each for EXPANSION BOLTS of the size indicated, which price shall include furnishing, drilling holes, and installing the expansion bolts complete in place. These bolts shall extend at least 8 inches into the new concrete.

The concrete will be paid for at the contract unit price per cubic yard for CONCRETE COLLAR. Reinforcement will be paid for at the contract unit price per pound for REINFORCEMENT BARS. Expansion Bolts, when required, will be paid for at the contract unit price each for EXPANSION BOLTS of the size indicated, which price shall include furnishing, drilling holes, and installing the expansion bolts complete in place. These bolts shall extend at least 8 inches into the new concrete.

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GENERAL NOTES

Box Culvert End Sections shall be constructed according to the requirements of Section 540 of the Standard Specifications except as modified herein. This work will be measured for payment as each, with each end of each culvert being one each. End sections will be paid for at the contract unit price per each for Box Culvert End Sections of the culvert number specified.

Typical box section dimensions, materials, and reinforcement details for Box Culvert End Sections shall be in accordance with the requirements of ASTM C 1577 as required for the design of the portion of the culvert within the limits of Precast Concrete Box Culverts except as modified herein.

Number of segments shown in Side Elevation is for example only. Length and number of precast box sections required to construct Box Culvert End Sections shall be determined by the Contractor.

**See roadway plans for embankment stage (Soil). The Slope Must Match.** 1'-0" and 2'-0" anchor rods for the culvert wall shall conform to the requirements of ASTM F 955, Grade 305. Structural steel for tie plate and restraint angle shall conform to the requirements of Article 506.04 of the Standard Specifications.

All components of the culvert tie detail shall be galvanized according to the requirements of Article 506.03 of the Standard Specifications. All components of the culvert tie detail shall be galvanized according to the requirements of ASTM A572. Precast concrete box culverts end section joints shall be provided with galvanized steel tie plates and restraint angles.

**Joint details will not be measured for payment but shall be included in the contract unit price for the end sections.**

Precast box culvert end section joints with a total vertical height less than 5'-0" shall require only one culvert tie placed at midheight.

Porous granular material—Min. 6" thick bed of porous granular material

**For end sections with traversable pipe grate systems, see Highway Standard 542311 for reinforcement details.**

**Drain details will not be measured for payment but shall be included in the contract unit price for Box Culvert End Sections of the culvert number specified.**

**Nonwoven geotextile fabric shall conform to the requirements of Article 503.11 of the Standard Specifications.**

**All costs associated with furnishing and installing or constructing the geotextile fabric, toewall, and culvert ties will not be measured for payment but shall be included in the contract unit price for Box Culvert End Sections of the culvert number specified.**

Restraint angle bars designated (E) shall be epoxy coated.

Drain holes shall conform to the requirements of Article 503.12 of the Standard Specifications unless noted otherwise.

Precast concrete box sections shall be according to the requirements of ASTM C 1577 as required for the design of the portion of the culvert within the limits of Precast Concrete Box Culverts except as modified herein.

**Number of segments shown in Side Elevation is for example only. Length and number of precast box sections required to construct Box Culvert End Sections shall be determined by the Contractor.**

Bow Culvert End Section Length (Flow roadway Plans)

See General Notes regarding number of required segments.

END VIEW

**All costs associated with furnishing and installing or constructing the geotextile fabric, toewall, and culvert ties will not be measured for payment but shall be included in the contract unit price for the end sections.**

1" x 4" x 4" block of CA5, CA7, or CA11 inserted in 3" x 3" x 6" block of aggregate placed over drain opening. Block of aggregate shall be completely wrapped in nonwoven geotextile fabric.

Provide a double layer of 12" x 12" nonwoven geotextile fabric centered over the drain hole. Fabric shall be secured to the concrete with washers.

Porous granular material

1-1/2" x 4" washer

3" x 3" x 6" block of CA5, CA7, or CA11 shall be formed into a washed aggregate

SECTION A-A

(All costs associated with furnishing and installing or constructing the above details will not be measured for payment but shall be included in the contract unit price for the end sections.)

**End sections will be paid for at the contract unit price per each for Box Culvert End Sections of the culvert number specified.**
**BOX CULVERT END SECTIONS**

**SECTION D-D**

1. Perform excavation and construct headwall.
2. Backfill according to the applicable paragraphs of Article 503.10 of the Standard Specifications and place bedding for precast box culvert and piers.
3. Set prestressed box culvert end section.
4. Drill and grout reinforcement to headwall using approved chemical adhesive in accordance with Section 3120 of the Standard Specifications.
5. Pressure grout voids using non-shrink grout conforming to Section 1027 of the Standard Specifications.

**BAR s(E)**

- **(Typ. each face)**
- **2'-6'' cl.**
- **9'' cl.**
- **1'' cl.**
- **2'' cl.**

**BAR v(E)**

- **2'-6'' cl.**
- **9'' cl.**
- **1'' cl.**
- **2'' cl.**

**BAR h(E)**

- **2'-6'' cl.**
- **9'' cl.**
- **1'' cl.**
- **2'' cl.**

**ALTERNATE SECTION D-D**

Alternate Section D-D is provided to allow the Contractor the option of casting the bottom slab of the end section first followed by construction of the sidewalls using conventional forming methods. Shop drawings that detail slab thickness and reinforcement layout shall be submitted to the Engineer for review and approval when using Alternate Section D-D.

- **The site and spacing of the #5-v(E) bars shall provide a minimum reinforcement area using each face of the wall (5.8-ft./ft.) equal to 1.75/#2-v(E). #5-v(E) bars may consist of #3 thru #6 size reinforcement bars and the longitudinal spacing shall not exceed the lesser of the wall thickness or 8 inches.**
- **Bonded construction joints shall be prepared according to Article 303.09 of the Standard Specifications.**

**SECTION E-E**

- **1'-0'' cl.**
- **2'-0'' cl.**
- **3'-0'' cl.**
- **4'-0'' cl.**

**HEADWALL ELEVATION**

- Allow sidewall reinforcement to extend into end of headwall.

**TOEWALL CONSTRUCTION SEQUENCE**

1. Perform excavation and construct headwall.
2. Backfill according to the applicable paragraphs of Article 503.10 of the Standard Specifications and place bedding for precast box culvert and piers.
3. Set prestressed box culvert end section.
4. Drill and grout reinforcement to headwall using approved chemical adhesive in accordance with Section 3120 of the Standard Specifications.
5. Pressure grout voids using non-shrink grout conforming to Section 1027 of the Standard Specifications.

- **The Contractor may furnish a precast or cast-in-place toewall.**
- **The Contractor shall be responsible for the strength and stability of the precast toewall during handling.**
- **Additional lifting points may be required depending upon the length of the toewall or the Contractor may need to modify the design of the toewall for the proposed handling method.**
- **If soil conditions permit, the sides of the toewall may be poured directly against the soil.**
- **Directly against the soil. The clear cover on the sides of the toewall may be required depending upon the length of the toewall or the Contractor may need to modify the design of the toewall for the proposed handling method.**
- **Backfill according to the applicable paragraphs of Article 502.10 of the Standard Specifications.**

**STATE OF ILLINOIS**

**DEPARTMENT OF TRANSPORTATION**

**REGION 2 / DISTRICT 2 STANDARD**

**CONTRACT NO.**

**FILE NAME**

**TYP.**

**SHEET NO.**

**REVISED**

**SHEETS**

**NOTE:**

- **Sections 1024 of the Standard Specifications.**
- **Pressure grout voids using non-shrink grout conforming to Section 1027 of the Standard Specifications.**
- **Backfill according to the applicable paragraphs of Article 502.10 of the Standard Specifications.**
- **Perform excavation and construct headwall.**
- **Backfill according to the applicable paragraphs of Article 503.10 of the Standard Specifications and place bedding for precast box culvert and piers.**
- **Set prestressed box culvert end section.**
- **Drill and grout reinforcement to headwall using approved chemical adhesive in accordance with Section 3120 of the Standard Specifications.**
- **Pressure grout voids using non-shrink grout conforming to Section 1027 of the Standard Specifications.**
- **The Contractor may furnish a precast or cast-in-place toewall.**
- **The Contractor shall be responsible for the strength and stability of the precast toewall during handling.**
- **Additional lifting points may be required depending upon the length of the toewall or the Contractor may need to modify the design of the toewall for the proposed handling method.**
- **If soil conditions permit, the sides of the toewall may be poured directly against the soil.**
- **Directly against the soil. The clear cover on the sides of the toewall may be required depending upon the length of the toewall or the Contractor may need to modify the design of the toewall for the proposed handling method.**
- **Backfill according to the applicable paragraphs of Article 502.10 of the Standard Specifications.**
# BOX CULVERT END SECTIONS

## PIPE-GRADE SCHEDULE FOR BOX CULVERT END SECTIONS

<table>
<thead>
<tr>
<th>No.</th>
<th>Main Pipe</th>
<th>No. / Length</th>
<th>Int. Support</th>
<th>No. / Length</th>
<th>Main Pipe</th>
<th>No. / Length</th>
<th>Int. Support</th>
<th>No. / Length</th>
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<td>2 @ 24'-9&quot;</td>
<td>3 @ 25'-3&quot;</td>
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**Total Length**
- 262'-10"
- 286'-10"
- 144'-10"
- 148'-9"
- 197'-8"
- 23'-6"
- 15'-11"
- 91'-0"
- 11'-1"
- 10'-8"
- 222'-3"
- 365'-0"
- 304'-9"
- 102'-3"
- 163'-2"
- 33'-10"
- 184'-0"
- 25'-10"
- 14'-11"
- 18'-10"
- 18'-11"
- 17'-1"
- 17'-2"
- 17'-5"
- 222'-3"
TEMPORARY ROAD CLOSURE EXPRESSWAY

NOTES:
1. MAINTENANCE OF TRAFFIC IS ACCORDING TO STANDARDS 701400, AND 701401 (NIGHT) OR 701406 (DAY ONLY)
2. TYPE II BARRICADE OR DRUM AT EXIT (RAMP WITH LIGHTS AT 20' CENTERS NO LESS THAN FOUR DRUMS)

SYMBOLS
- SIGN
- DIRECTION INDICATOR BARRICADE
- TYPE III BARRICADE OR DRUM
- FLAGGER WITH TRAFFIC CONTROL SIGN
- TYPE II BARRICADE
- PORTABLE CHANGEABLE MESSAGE SIGN
- ARROW BOARD

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

REGION 2 / DISTRICT 2 STANDARD

FILE NAME
IDOT/District 2
USER NAME
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SCALE: 1.0000 ' / in.
PLOT DATE
Mon Feb 10 13:44:20 2014
DATE DESIGNED
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TEMPORARY ROAD CLOSURE EXPRESSWAY

DIRECTION INDICATOR AT 50' CENTERS
1000' TAPER
MESSAGE BOARD
ROAD / ALL
TRAFFIC / EXIT
- TYPE II BARRICADE OR DRUM AT 50' CENTERS
DIRECTION INDICATOR AT 50' CENTERS
1000' TAPER

ARROW BOARD
1000' MINIMUM
1000' MINIMUM
1000' MINIMUM
1000' MINIMUM
1000' MINIMUM
1000' MINIMUM

ROAD CLOSED

CONSTRUCTION ZONE

MESSAGE BOARD
ROAD / ALL
TRAFFIC / EXIT

FLAGGER

ROAD CLOSED

CONSTRUCTION ZONE

ARROW BOARD

NOTES:
701400, AND 701401 (NIGHT) OR 701406 (DAY ONLY)
MAINTENANCE OF TRAFFIC IS ACCORDING TO STANDARDS
1. TYPE II BARRICADE OR DRUM AT EXIT (RAMP WITH LIGHTS
AT 20' CENTERS NO LESS THAN FOUR DRUMS)

SYMBOLS
- SIGN
- DIRECTION INDICATOR BARRICADE
- TYPE III BARRICADE OR DRUM
- FLAGGER WITH TRAFFIC CONTROL SIGN
- TYPE II BARRICADE
- PORTABLE CHANGEABLE MESSAGE SIGN
- ARROW BOARD

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TEMPORARY ROAD CLOSURE EXPRESSWAY

DIRECTION INDICATOR AT 50' CENTERS
1000' TAPER
MESSAGE BOARD
ROAD / ALL
TRAFFIC / EXIT
- TYPE II BARRICADE OR DRUM AT 50' CENTERS
DIRECTION INDICATOR AT 50' CENTERS
1000' TAPER

ARROW BOARD
1000' MINIMUM
1000' MINIMUM
1000' MINIMUM
1000' MINIMUM
1000' MINIMUM
1000' MINIMUM

ROAD CLOSED

CONSTRUCTION ZONE

MESSAGE BOARD
ROAD / ALL
TRAFFIC / EXIT

FLAGGER

ROAD CLOSED

CONSTRUCTION ZONE

ARROW BOARD

NOTES:
701400, AND 701401 (NIGHT) OR 701406 (DAY ONLY)
MAINTENANCE OF TRAFFIC IS ACCORDING TO STANDARDS
1. TYPE II BARRICADE OR DRUM AT EXIT (RAMP WITH LIGHTS
AT 20' CENTERS NO LESS THAN FOUR DRUMS)
TRAFFIC CONTROL FOR THREE LANE SECTION
CASE 1

ROAD CONSTRUCTION AHEAD

Noting Flagger needed only if more than 4 trucks enter or leave in an hour and a "Flagger" symbol sign (W20-22O-48) shall be placed in advance of the flagger.
TRAFFIC CONTROL FOR THREE LANE SECTION

CASE 2

ROAD CONSTRUCTION AHEAD

STAY IN YOUR LANE

W20-103X10-48

*FLAGGER WITH TRAFFIC CONTROL SIGN

WORK AREA

CONSTRUCTION AHEAD

SYMBOLS

NOTING: Flagger needed only if more than 4 trucks enter or leave in an hour and a "Flagger" symbol sign (W20-103X10-48) shall be placed in advance of the flagger.

W20-103X10-48

ROAD CONSTRUCTION AHEAD

SYMBOLS

W20-103X10-48

*FLASHER WITH TRAFFIC CONTROL SIGN

CONSTRUCTION AHEAD

NOTE: Flagger needed only if more than 4 trucks enter or leave in an hour.

W20-103X10-48

ROAD CONSTRUCTION AHEAD

SYMBOLS

W20-103X10-48

*FLASHER WITH TRAFFIC CONTROL SIGN

CONSTRUCTION AHEAD

NOTING: Flagger needed only if more than 4 trucks enter or leave in an hour and a "Flagger" symbol sign (W20-103X10-48) shall be placed in advance of the flagger.

W20-103X10-48

ROAD CONSTRUCTION AHEAD

SYMBOLS

W20-103X10-48

*FLASHER WITH TRAFFIC CONTROL SIGN

CONSTRUCTION AHEAD

NOTING: Flagger needed only if more than 4 trucks enter or leave in an hour and a "Flagger" symbol sign (W20-103X10-48) shall be placed in advance of the flagger.

W20-103X10-48

ROAD CONSTRUCTION AHEAD

SYMBOLS

W20-103X10-48

*FLASHER WITH TRAFFIC CONTROL SIGN

CONSTRUCTION AHEAD

NOTING: Flagger needed only if more than 4 trucks enter or leave in an hour and a "Flagger" symbol sign (W20-103X10-48) shall be placed in advance of the flagger.
TRAFFIC CONTROL FOR THREE LANE SECTION

CASE 3

NOTE: DO NOT OPEN THE CLIMBING LANE UNLESS THERE IS AT LEAST 1/2 MILE BEFORE THE LANE ENDS.

SYMBOLS

D - SIGN

- FLASHER WITH TRAFFIC CONTROL SIGN

- CONE, DRUM OR BARRICADE

THIS TRAFFIC CONTROL DETAIL SHALL BE INCLUDED IN THE COST OF SPECIFIED TRAFFIC CONTROL STANDARDS OR ITEMS.
CASE 4

NOTE: DO NOT OPEN THE CLIMBING LANE UNLESS THERE IS AT LEAST 1/2 MILE BEFORE THE LANE ENDS.

DEVICES @ 10' CENTERS 100' MAX
DEVICES @ 40' CENTERS FOR THE FIRST 600' AND THEN 80' CENTERS

THIS TRAFFIC CONTROL DETAIL SHALL BE INCLUDED IN THE COST OF SPECIFIED TRAFFIC CONTROL STANDARDS OR ITEMS.

CASE 4 APPLIES WHEN NO WORKERS ARE PRESENT. WHEN WORKERS ARE PRESENT, TWO LANES SHALL BE CLOSED AND TRAFFIC CONTROL SHALL BE ACCORDING TO CASE 3.

SYMBOLS

- WORK AREA
- SIGN
- FLAGGER WITH TRAFFIC CONTROL SIGN
- CONE, DRUM OR BARRICADE
- TYPE III BARRICADE

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

REGION 2 / DISTRICT 2 STANDARD

TRAFFIC CONTROL FOR THREE LANE SECTION
SHEET 4 OF 4 37.1
TRAFFIC CONTROL FOR TRANSITION AREAS

CASE 1

TRAFFIC CONTROL STANDARDS
ACCORDING TO APPLICABLE
SIGNS, DEVICES & FLAGGERS
@ 50' CENTERS
DRUMS OR BARRICADES

GENERAL NOTES
1. If applicable, use speed limit as shown on applicable multilane Traffic Control and Protection Standard.
2. If the work is within 2500 feet of the transition, when the speed of 40 mph or 1500 feet for all other speeds, the detail shall be used.
3. Work Zone Speed Limit 55 Begins shall be replaced with Work Zone Speed Limit 45 Begins where the workers are within 500 feet of the transition.

NOTE:
STANDARDS 701301 AND 701306
SHALL NOT BE USED WITHIN 500 FEET
OF THE TRANSITION.

Lane "Stay in Your Lane" and "Weave Signs" of the transition may
be used in conjunction with applicable multilane Traffic Control Standards.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL FOR TRANSITION AREAS SHEET 1 OF 4
TRAFFIC CONTROL FOR TRANSITION AREAS

CASE 2

END WORK ZONE SPEED LIMIT

DRUMS OR BARRICADES

WORK ZONE PUBLIC INFORMATION SIGN

ROAD CONSTRUCTION AHEAD

NOTE: STANDARDS 70301 AND 70306 SHALL NOT BE USED WITHIN 500 FEET OF THE TRANSITION.

WORK AREA

PORTABLE CHANGEABLE MESSAGE SIGN

STAY IN YOUR LANE

NOTE: STANDARDS 70301 AND 70306 SHALL NOT BE USED WITHIN 500 FEET OF THE TRANSITION.

GENERAL NOTES

THIS DETAIL DO TO BE USED IN CONJUNCTION WITH THE APPLICABLE MULTILANE TRAFFIC CONTROL AND PROTECTION STANDARDS.

1. If the work is within 2500 feet of the transition when the speed is 40 mph, or 1000 feet for all other speeds, the detail shall be used.

2. Work Zone Speed Limit 45 Begins shall be replaced with WORK ZONE SPEED LIMIT 55 BEGINS when the speed is > 40 mph, or 1500 feet for all other speeds, the detail shall be used.

3. A variable message sign may be placed with WORK ZONE SPEED LIMIT 45 Begins when the workers are within 500 feet of the transition.

THIS TRAFFIC CONTROL DETAIL SHALL BE INCLUDED IN THE COST OF SPECIFIED TRAFFIC CONTROL STANDARDS OR ITEMS.
TRAFFIC CONTROL FOR TRANSITION AREAS

CASE 3

END WORK ZONE SPEED LIMIT

GENERAL NOTES

This detail is to be used in conjunction with applicable multilane Traffic Control and Protection Standards.

1. If applicable, use speed limit as shown on applicable multilane Traffic Control and Protection Standards.

2. The work zone speed limit applies within 2500 feet of the transition when the speed is greater than 40 mph, or 1500 feet for all other speeds, the detail shall be used.

3. Work zone speed limit as shown shall replace with WORK ZONE SPEED LIMIT as shown where the workers are within 500 feet of the transition.

NOTE: Standards 701301 and 701306 shall not be used within 500 feet of the transition.

FLAGGER WITH TRAFFIC CONTROL SIGN

DRUMS OR BARRETTES

WORK AREA

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

REGION 2 / DISTRICT 2 STANDARD

DEPARTMENT OF TRANSPORTATION
STATE OF ILLINOIS

FILE NAME
IDOT/District 2
USER NAME
PLOT SCALE
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REGION 2 / DISTRICT 2 STANDARD

TRAFFIC CONTROL FOR TRANSITION AREAS SHEET 3 OF 4 38.1
TRAFFIC CONTROL FOR TRANSITION AREAS

CASE 4

END WORK ZONE SPEED LIMIT

NOTE: STANDARDS 701301 AND 701306 SHALL NOT BE USED WITHIN 500 FEET OF THE TRANSITION.

GENERAL NOTES

1. If applicable, use speed limit as shown on applicable multilane Traffic Control and Protection Standard.

2. If the work is within 2500 feet of the transition, when the speed is > 40 mph, or 1500 feet for all other speeds, the detail shall be used.

3. WORK ZONE SPEED LIMIT BEGINS where the workers are shown on applicable multilane Traffic Control and Protection Standard.

4. The TRAFFIC CONTROL DETAIL SHALL BE INCLUDED IN THE COST OF SPECIFIED TRAFFIC CONTROL STANDARDS OR ITEMS.

500'

W20-4(0)-48

ONE LANE ROAD AHEAD

BE PREPARED TO STOP

FLAGGER

ACCORDING TO STANDARD 701401, 701402, 701406, 701421, 701422 OR 701601:

WORK ZONE SPEED LIMIT

NOTE: STANDARDS TO1301 AND TO1306 SHALL NOT BE USED WITHIN 500 FEET OF THE TRANSITION.

GENERAL NOTES

1. If applicable, use speed limit as shown on applicable multilane Traffic Control and Protection Standard.

2. If the work is within 2500 feet of the transition, when the speed is > 40 mph, or 1500 feet for all other speeds, the detail shall be used.

3. WORK ZONE SPEED LIMIT BEGINS where the workers are shown on applicable multilane Traffic Control and Protection Standard.

4. The TRAFFIC CONTROL DETAIL SHALL BE INCLUDED IN THE COST OF SPECIFIED TRAFFIC CONTROL STANDARDS OR ITEMS.
TRAFFIC CONTROL TYPICAL WEAVE

DESIGNER NOTE:

1. Use on long 4-lane projects where the contractor may change a portion of the work to the opposite lane.

2. Use where the project is adjacent to another and the contractor could be working on different lanes.

3. Temporary pavement marking shall be used when typical weave is used for 14 days or more.

4. Traffic control typical weave shall be included in the cost of the specific traffic control standards of permit.

STANDARD WEAVE CONDITIONS FOR DIFFERENT SPEED LIMITS

<table>
<thead>
<tr>
<th>Speed Limit</th>
<th>Typical Weave</th>
<th>Merge Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>45 MPH</td>
<td>50 MPH</td>
<td>800 FT</td>
</tr>
<tr>
<td>55 MPH</td>
<td>35 MPH</td>
<td>600 FT</td>
</tr>
<tr>
<td>65 MPH</td>
<td>25 MPH</td>
<td>500 FT</td>
</tr>
</tbody>
</table>

Temporary pavement marking required if typical weave is used for 14 days or more.
TRAFFIC CONTROL FOR ROAD CLOSURE

GENERAL NOTES

Longitudinal dimensions may be adjusted to fit field conditions.

When speed limit is less than 45mph, change sign spacing to 250' and change R11-4-4830 to R11-1-4830

Side roads requiring all three signs shall be listed in the special provision.

Where local access is to be maintained, barricades are to be set up as shown in "Road Closed to Thru Traffic" unless otherwise shown.

All dimensions are in inches unless otherwise shown.

SYMBOLS

- Work area
- Type II Barricade with Flashers
- Sign with flashing light

TYPICAL APPLICATION FOR ROAD CLOSURE

TRAFFIC CONTROL FOR ROAD CLOSURE
TRAFFIC CONTROL FOR ROAD CLOSURE WITH SIDE ROAD WITHIN 150'

**GENERAL NOTES**

Length dimensions may be adjusted to fit field conditions.

When speed limit is less than 45mph, change sign spacing to 250' and change ROAD CLOSED 500' FT.

When the distance between the barricade and the intersection is between 1500' and 2000', the advance sign shall be placed at the intersection or at the point midway between the barricade and the intersection.

When the distance between the barricade and the intersection is less than 1500', an additional sign shall be placed at the intersection.

When the distance between the barricade and the intersection is over 2000', an additional set of barricades and R11-4-4830 shall be placed at each end of the work area.

**SYMBOLS**

- **Work area**
- **Type I Barricades with Flashers**
- **Sign with Flashing Light**

**TYPICAL APPLICATION**

**FOR ROAD CLOSURE WITH SIDE ROAD WITHIN 150' OF CLOSURE**

**CONDITION I**

Major Sideroad Closure

Use District Standard 40.1 when distance is less than 150'

**CONDITION II**

Sideroad Closure

Use District Standard 40.1 when distance is less than 150'

**TYPICAL APPLICATION**

For Road Closure with Side Road Within 150' of Closure

TRAFFIC CONTROL FOR ROAD CLOSURE WITH SIDE ROAD WITHIN 150' 40.1a
TYPICAL PAVEMENT MARKINGS

TYPICAL PAVEMENT MARKING FOR FLUSH MEDIAN

RECOMMENDED SPACING BETWEEN DIAGONALS (IN FEET)

<table>
<thead>
<tr>
<th>Speed Limit Range</th>
<th>Continuous Median Area</th>
<th>Intersection Channelization</th>
<th>Objects Intersection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 30 MPH</td>
<td>60'</td>
<td>15'</td>
<td>10'</td>
</tr>
<tr>
<td>30-40 MPH</td>
<td>75'</td>
<td>20'</td>
<td>15'</td>
</tr>
<tr>
<td>45 MPH &amp; over</td>
<td>90'</td>
<td>30'</td>
<td>20'</td>
</tr>
</tbody>
</table>

NOTES:
- If the spacing recommended in the Table does not permit at least five diagonal lines in the area being marked, the spacing from the nearest least speed range should be used. The recommended spacing is measured parallel to the pavement center line.
- All dimensions are in inches, unless otherwise noted.
- See Typical Drawing above.

ADDITIONAL PAIRS EVERY 200'-300'.

MINIMUM OF TWO PAIRS OF ARROWS.
TYPICAL PAVEMENT MARKINGS

MULTI-LANE / DIVIDED

* SEE HIGHWAY STANDARD 781001 FOR SPACING DETAILS.
USE DOUBLE MARKERS WHEN ADT $> 20,000.$

TYPICAL PAVEMENT MARKING FOR TWO LANE SECTION - NO PASSING ZONES

MULTI-LANE / UNDIVIDED & ONE WAY

(For multi-lane undivided highways, use this detail, not Highway Standard 78001).

SYMBOLS

* REDUCE TO 40' O.C. ON CURVES WHERE ADVISORY SPEEDS ARE 10 MPH LOWER THAN POSTED SPEEDS.
** USE DOUBLE MARKERS WHEN ADT $> 20,000.$
*** CENTERLINE SKIP DASH PAVEMENT MARKING SPEED LIMIT LESS THAN 40 MPH USE 4" LINE. SPEED LIMIT 40 MPH AND OVER USE 6" LINE.
PAINTING DETAILS

CENTRAL LINE SKIP DASH PAVEMENT MARKING WIDTH SHALL BE 4" WHEN THE POSTED SPEED LIMIT IS UNDER 40 MPH AND 6" WHEN THE POSTED SPEED LIMIT IS 40 MPH AND OVER.

EXIT RAMP

ENTRANCE RAMP

CLOVERLEAF

NOTE: CORE MATCHING PLACED ONLY WHEN SCHEDULED IN THE PLANS

OPTIONAL METHOD FOR HIGH VOLUME OFF RAMPS

ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.

4" WHEN THE POSTED SPEED LIMIT IS UNDER 40 MPH AND 6" WHEN SCHEDULED IN THE PLANS

GORE HATCHING PLACED ONLY
REMOVE AND REEREECT STEEL PLATE BEAM GUARDRAIL

STEEL POST CONSTRUCTION

WOOD POST CONSTRUCTION

STEEL BLOCK-OUT DETAIL

NOTE

PLATE A

POST OR SPLICE BOLT & NUT

STEEL BLOCK-OUT DETAIL

NOTE

PLATE A

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

REGION 2 / DISTRICT 2 STANDARD

REMOVE AND REEREECT STEEL PLATE BEAM GUARDRAIL SHEET 2 of 4 53.1
REPLACE AND REEREECT STEEL PLATE BEAM GUARDRAIL

NOTE

Anchor plates shall be used to attach cable assembly to guardrail when required on traffic barrier terminals.

ANCHOR PLATE T DETAILS

When end shoe is attached to a bridge parapet which has an expansion joint, the bolts shall be tightened only to a point that will allow guardrail movement.

The standard end shoe shall be attached to the concrete with pre-drilled or self-drilling anchor bolts. The anchor plate shall be bedded firm with the surface of the concrete.

External threaded studs protruding from the surface of the concrete will not be permitted.

ANCHOR PLATE T DETAILS

NOTE

When end shoe is attached to a bridge parapet which has an expansion joint, the bolts shall be tightened only to a point that will allow guardrail movement.

The standard end shoe shall be attached to the concrete with pre-drilled or self-drilling anchor bolts. The anchor plate shall be bedded firm with the surface of the concrete.

External threaded studs protruding from the surface of the concrete will not be permitted.
REMOVE AND REEREECT STEEL PLATE BEAM GUARDRAIL

**PLAN**

- 8 mm. Steel plate
- 20 mm. Wood plate

**ELEVATION**

- Finished ground line
- Ledge or hard slag fill.

**GUARDRAIL PLACED BEHIND CURB**

<table>
<thead>
<tr>
<th>Type</th>
<th>R</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steel Post</td>
<td>24</td>
<td>25</td>
</tr>
<tr>
<td>Wood Post</td>
<td>12</td>
<td>8</td>
</tr>
</tbody>
</table>

**CABLE ASSEMBLY**

- Double nuts or locknuts and washer
- 3/8" dia. 5/16" galvanized cable

**NOTE:**
- It is necessary for D to be more than 12 and less than 20 ft. Type I curb and gutter.
- Type I/II guardrail shall be used in front of and in advance of the guardrail.

**WOOD BLOCK-OUT AND STEEL POST DETAILS**

- Steel Post Details
- Wood Post Details

**TERMINAL FOR POST WHEN IMPERVIOUS MATERIAL IS ENCOUNTERED**

- Use of joints may be necessary to reduce length of guardrail.
**TOLERANCES - FINISHED SLOTTED DRAIN - 20' LENGTHS**

- **Horizontal Bow**: 5/8"
- **Vertical Bow**: 3/8"

**GALVANIZING**

- **T** = 15,000 pounds for 6" grate
- **T** = 12,000 pounds for 2-1/2" grate

**GRATES**

- Manufactured from ASTM A670, Grade 36 steel. The spacers and bearing bars shall be 3/16" material.
- The grates shall be 1.0000" in height.
- When the Slotted Drain is banded together, the adjacent grates shall have a maximum 3" gap.

**SLOTTED DRAIN PIPE**

- The diameter shall be as shown on the plans.
- The CMP shall be ALUMINIZED STEEL Type 2.
- Steel grating shall meet the galvanizing requirements of AASHTO M111.
- The Corrugated Steel Pipe used in the Slotted Drain shall meet the requirements of AASHTO M36/ASTM A760.

**SLOTTED DRAIN NOTES**

- For 6" vertical & trapezoidal requirements, the grates shall be manufactured from ASTM A670, Grade 36 steel. The spacers and bearing bars shall be 3/16" material.
- The plate extender shall be 7 gage steel meeting ASTM A761.
- The spacers shall be on 6" centers and welded on both sides to each bearing bar (sides). The spacers and bearing bars (sides) shall be 3/16" material.
- The grates shall be manufactured from ASTM A670, Grade 36 steel. The spacers and bearing bars shall be 3/16" material.
- The plate extender shall be 7 gage steel meeting ASTM A761.
- The spacers shall be on 6" centers and welded on both sides to each bearing bar (sides). The spacers and bearing bars (sides) shall be 3/16" material.
- The plate extender shall be 7 gage steel meeting ASTM A761.
- The spacers shall be on 6" centers and welded on both sides to each bearing bar (sides). The spacers and bearing bars (sides) shall be 3/16" material.

**CONSTRUCTIONS**

- The corrugated steel pipe and all of the needed angular wedges.
- The spacers and bearing bars are modified with a standard slit to ensure the pipe and prevent the splice of the drain.

**DETAILED SPECIFICATIONS**

- **A**
- **B**
- **C**
- **D**
- **E**
- **F**
- **G**
- **H**
- **I**
- **J**
- **K**
- **L**
- **M**
- **N**
- **O**
- **P**
- **Q**
- **R**
- **S**
- **T**
- **U**
- **V**
- **W**
- **X**
- **Y**
- **Z**

**STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**

**SLOTTED DRAIN PIPE**

**REVISIONS**

- Section A-A
- Side View
- Top View
- End View

**DETAIL WITH MESH**

**DETAIL WITH MESH**

**DETAIL WITH MESH**

**DETAIL WITH MESH**

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**DETAIL WITH MESH**

**DET
DETAIL OF FLOOD GATE

BILL OF MATERIALS

<table>
<thead>
<tr>
<th>QUANTITY</th>
<th>UNIT</th>
<th>ITEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>EACH</td>
<td>GALVANIZED BARBED WIRE</td>
</tr>
<tr>
<td>1</td>
<td>EACH</td>
<td>GALVANIZED CABLE CLAMPS</td>
</tr>
<tr>
<td>1</td>
<td>EACH</td>
<td>GALVANIZED FENCE STAPLES</td>
</tr>
<tr>
<td>1</td>
<td>EACH</td>
<td>GALVANIZED TURNBUCKLES</td>
</tr>
<tr>
<td>1</td>
<td>EACH</td>
<td>GALVANIZED STEEL BOLTS</td>
</tr>
<tr>
<td>1</td>
<td>EACH</td>
<td>STEEL WASHER PLATE</td>
</tr>
<tr>
<td>1</td>
<td>EACH</td>
<td>CREOSOTED TIMBER PILE</td>
</tr>
<tr>
<td>1</td>
<td>EACH</td>
<td>WIRE ROPE</td>
</tr>
<tr>
<td>1</td>
<td>EACH</td>
<td>STEEL WASHER PLATE</td>
</tr>
<tr>
<td>1</td>
<td>EACH</td>
<td>CHANNEL SC 25, 2½ x 2½</td>
</tr>
<tr>
<td>1</td>
<td>EACH</td>
<td>STEEL U-BOLTS</td>
</tr>
<tr>
<td>1</td>
<td>EACH</td>
<td>FENCE STAPLE</td>
</tr>
<tr>
<td>1</td>
<td>EACH</td>
<td>2 x 4 TREATED LUMBER</td>
</tr>
<tr>
<td>1</td>
<td>EACH</td>
<td>SPECIAL STEEL CHANNEL SC 25, 2½ x 2½</td>
</tr>
<tr>
<td>1</td>
<td>EACH</td>
<td>STEEL BOLTS AND WASHERS</td>
</tr>
</tbody>
</table>

NOTE:
- All dimensions are in inches unless otherwise noted.
- All work will be paid for at the contract unit price per each.
- Quantities are for 2 deadmen.

DEADMEN SHALL BE CONSTRUCTED OF CLASS SI CONCRETE PRECAST CONCRETE DEADMEN AND CAST-IN-PLACE CONCRETE DEADMEN OR PRECAST CAST-IN-PLACE CONCRETE DEADMEN.

QUANTITIES FOR 2 DEADMEN

<table>
<thead>
<tr>
<th>ITEM</th>
<th>QUANTITY</th>
<th>UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>GALVANIZED STEEL BOLTS</td>
<td>36 LBS REINFORCEMENT BARS</td>
<td></td>
</tr>
<tr>
<td>CREOSOTED TIMBER PILE</td>
<td>0.3 CU.YD CLASS SI CONCRETE</td>
<td></td>
</tr>
<tr>
<td>WIRE ROPE</td>
<td>0.7 CU. YD. CLASS SI CONCRETE</td>
<td></td>
</tr>
<tr>
<td>EYE BOLT</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>CREOSOTED TIMBER PILE</td>
<td>30 FT - 12</td>
<td></td>
</tr>
<tr>
<td>GALVANIZED CABLE CLAMPS</td>
<td>12 CREOSOTED TIMBER PILE</td>
<td></td>
</tr>
<tr>
<td>CHANNEL CAP</td>
<td>7 STRANDS OF BARB WIRE</td>
<td></td>
</tr>
<tr>
<td>GALVANIZED TURNBUCKLES</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>FENCE STAPLE</td>
<td>6 FT</td>
<td></td>
</tr>
<tr>
<td>GALVANIZED BARBED WIRE</td>
<td>30 FT - 12</td>
<td></td>
</tr>
<tr>
<td>GALVANIZED CABLE CLAMPS</td>
<td>36</td>
<td></td>
</tr>
<tr>
<td>CHANNEL SC 25, 2½ x 2½</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STEEL WASHER PLATE</td>
<td>5x5xƒ</td>
<td></td>
</tr>
<tr>
<td>WIRE ROPE</td>
<td>3½ DIA.</td>
<td></td>
</tr>
<tr>
<td>EYE BOLT</td>
<td>3½ DIA. x 15 GALVANIZED</td>
<td></td>
</tr>
<tr>
<td>EYE BOLT</td>
<td>3½ DIA. GALVANIZED TURNBUCKLES</td>
<td></td>
</tr>
<tr>
<td>GALVANIZED STEEL BOLTS</td>
<td>3½ DIA. GALVANIZED CABLE CLAMPS</td>
<td></td>
</tr>
<tr>
<td>GALVANIZED U-BOLTS</td>
<td>5x5xƒ STEEL WASHER PLATES</td>
<td></td>
</tr>
</tbody>
</table>

NOTE:
- Precast concrete deadmen and cast-in-place concrete deadmen shall be constructed of Class SI concrete.
- Quantities for 2 deadmen.
- All work will be paid for at the contract unit price per each.
- All dimensions are in inches unless otherwise noted.
- Dimensions are in inches unless otherwise noted.
40' SINGLE LANE MEDIAN CROSSOVER
(POSTED SPEED LIMIT 55 MPH, WORK ZONE SPEED LIMIT 45 MPH)

**Typical Section**

**Table of Offsets and Drops**

<table>
<thead>
<tr>
<th>Distance feet from section station</th>
<th>0</th>
<th>60</th>
<th>120</th>
<th>180</th>
<th>240</th>
<th>300</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offsets feet from inside edge of pavement</td>
<td>20</td>
<td>18</td>
<td>15.32</td>
<td>13.37</td>
<td>11.37</td>
<td>9.06</td>
</tr>
<tr>
<td>Drop feet from inside edge of pavement</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

**General Notes**

Construction of median crossover shall conform to the requirements of current Standard Specifications. Slotted drain shall be constructed of 14 or 16 gauge corrugated metal roadway pipe modified to accommodate slotted drain as shown.

Pavement, subbase, & shoulder quantities are:

- **REGION 2 / DISTRICT 2 STANDARD 12-07-10**

See District Standard 62.4 for details for the slotted drain.

See District Standard 68.1 for details for the beveled pipe & guard.

The crossover is designed using a 45mph design speed.

The end of the pipe guard shall be set where a minimum 1:4 front slope shall be constructed from each side of pipe guard to the roadway shoulder.

The PCC Pavement (Jointed) 10" shall be constructed according to Section 420 of the Standard Specifications and Highway Standards 42000, 42010, & 42020.

The PCC Pavement (Jointed) 10" shall be tied to adjacent existing concrete pavement and the concrete encasement for the slotted drain. The tie bars shall be No.6 bars 24" long @ 30" cts, and installed according to the applicable portions of Article 420.05 (b) of the Standard Specifications. The cost of the bars to be included in the cost of the PCC Pavement (Jointed) 10".

The PCC Pavement (Jointed) 10" shall be constructed according to Article 420.05 (b) of the Standard Specifications. The cost of the bars to be included in the cost of the PCC Pavement (Jointed) 10".

The end of the pipe guard shall be set where a minimum 1:4 front slope shall be constructed from each side of pipe guard to the roadway shoulder.

The PCC Pavement (Jointed) 10" shall be tied to adjacent existing concrete pavement and the concrete encasement for the slotted drain. The tie bars shall be No.6 bars 24" long @ 30" cts, and installed according to the applicable portions of Article 420.05 (b) of the Standard Specifications. The cost of the bars to be included in the cost of the PCC Pavement (Jointed) 10".

**Typical Plan**

- **STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION**

- **REGION 2 / DISTRICT 2 STANDARD**

- **40' SINGLE LANE MEDIAN CROSSOVER (45 MPH WORK ZONE SPEED LIMIT) 72.1**
50' SINGLE LANE MEDIAN CROSSOVER
(POSTED SPEED LIMIT 55 MPH, WORK ZONE SPEED LIMIT 45 MPH)

TYPICAL SECTION

<table>
<thead>
<tr>
<th>TABLE OF OFFSETS AND DROPS</th>
<th>0'</th>
<th>9'</th>
<th>18'</th>
<th>27'</th>
<th>36'</th>
<th>45'</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance feet from location station</td>
<td>6'</td>
<td>3'</td>
<td>1'</td>
<td>3'</td>
<td>6'</td>
<td>9'</td>
</tr>
<tr>
<td>Offsets feet from inside edge of pavement</td>
<td>29</td>
<td>23</td>
<td>18.57</td>
<td>14.14</td>
<td>10.37</td>
<td>6.97</td>
</tr>
<tr>
<td>Drop feet from inside edge of pavement</td>
<td>0.5</td>
<td>0.49</td>
<td>0.47</td>
<td>0.45</td>
<td>0.43</td>
<td>0.41</td>
</tr>
</tbody>
</table>

SECTION A-A

USE TO MAINTAIN MEDIAN DRAINAGE THROUGH THE CROSSOVER

<table>
<thead>
<tr>
<th>TYPICAL PLAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGGREGATE SUBGRADE IMPROVEMENT, 12&quot;</td>
</tr>
<tr>
<td>PCC PAVEMENT, (JOINTED) 10&quot;</td>
</tr>
<tr>
<td>HMA SHOULDERS 6&quot;</td>
</tr>
<tr>
<td>2&quot; HMA SURFACE COURSE, MIX &quot;C&quot;, N50</td>
</tr>
</tbody>
</table>

GENERAL NOTES

Construction of median crossover shall conform to the requirement of current Standard Specifications.

A slotted drain shall be constructed of 14 or 16 gauge corrugated metal roadway pipe modified to accommodate slotted drain as shown.

Pavement, subbase, & shoulder quantities are

<table>
<thead>
<tr>
<th>HMA shoulder.</th>
</tr>
</thead>
<tbody>
<tr>
<td>108.73'</td>
</tr>
</tbody>
</table>

The crossover is designed using a 45mph design speed.

The end of the pipe guard shall be set where a minimum 1:4 front slope can be constructed from each side of pipe guard to the new shoulder.

The PCC Pavement (Jointed) 10" shall be constructed according to Section 420 of the Standard Specifications and Highway Standards 420001, 420101, & 420106.

The PCC Pavement (Jointed) 10" shall be tied to adjacent existing concrete pavement and the concrete encasement for the slotted drain.

The PCC Pavement (Jointed) 10" shall be tied to adjacent existing concrete pavement and the concrete encasement for the slotted drain.

The PCC Pavement (Jointed) 10" shall be tied to adjacent existing concrete pavement and the concrete encasement for the slotted drain.

The tie bars shall be No.6 bars 24" long @ 30" cts, and installed according to the applicable portions of Article 420.05 (b) of the Standard Specifications. The cost of the bars to be included in the cost of the PCC Pavement (Jointed) 10".

Concrete Encasement of Beveled Pipe & Guard:

<table>
<thead>
<tr>
<th>TIE BAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>10&quot; PCC</td>
</tr>
</tbody>
</table>

Unless otherwise specified, when the median crossover is to be removed, the Contractor shall be required to saw full-depth along the shoulder line 6' from slope of pavement. The 6' shall be adjacent to the edge of pavement, and be used as shoulders. The cost of Sawing shall be included in the Pavement Removal.

Longitudinal joints shall be made of a mix 12' wide. All joints shall be sealed.

TRAFFIC CONTROL STANDARD 701416 IS TO BE USED WITH THIS DETAIL.

The crossover is designed using a 45mph design speed.

Rev.: 1

The end of the pipe guard shall be set where a minimum 1:4 front slope can be constructed from each side of pipe guard to the new shoulder.

The PCC Pavement (Jointed) 10" shall be constructed according to Section 420 of the Standard Specifications and Highway Standards 420001, 420101, & 420106.

The PCC Pavement (Jointed) 10" shall be tied to adjacent existing concrete pavement and the concrete encasement for the slotted drain.

The PCC Pavement (Jointed) 10" shall be tied to adjacent existing concrete pavement and the concrete encasement for the slotted drain.

The tie bars shall be No.6 bars 24" long @ 30" cts, and installed according to the applicable portions of Article 420.05 (b) of the Standard Specifications. The cost of the bars to be included in the cost of the PCC Pavement (Jointed) 10".

Concrete Encasement of Beveled Pipe & Guard:

<table>
<thead>
<tr>
<th>TIE BAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>10&quot; PCC</td>
</tr>
</tbody>
</table>

Unless otherwise specified, when the median crossover is to be removed, the Contractor shall be required to saw full-depth along the shoulder line 6' from slope of pavement. The 6' shall be adjacent to the edge of pavement, and be used as shoulders. The cost of Sawing shall be included in the Pavement Removal.

Longitudinal joints shall be made of a mix 12' wide. All joints shall be sealed.
Duct tape or wood blocks shall be used to cover slotted drain during construction of crossover paving.

**SECTION A-A**

**GENERAL NOTES**

Construction of median crossover shall conform to the requirements of current Standard Specifications. Slotted drain shall be constructed of 14 or 16 gauge corrugated metal roadway pipe modified to accommodate slotted drain as shown. Pavement, subbase, and shoulder quantities are.

The PCC Pavement (Jointed) 10" shall be constructed according to Section 420 of the Standard Specifications and Highway Standards 420001, 420101, & 420106. The PCC Pavement (Jointed) 10" shall be tied to adjacent existing concrete pavement and the concrete encasement for the slotted drain.

The PCC Pavement (Jointed) 10" shall be constructed according to the applicable portions of Article 420.05 (b) of the Standard Specifications. The cost of the bars to be included in the cost of the PCC Pavement (Jointed) 10".

The end of the pipe guard shall be set where a minimum 1:4 front slope can be constructed from each side of the pipe guard to the front slope can be constructed from each side of the pipe guard to the pipe guard. The PCC Pavement (Jointed) 10" shall be constructed according to Article 420.05 (b) of the Standard Specifications. The cost of the bars to be included in the cost of the PCC Pavement (Jointed) 10".

**TYPICAL PLAN**

**STATE OF ILLINOIS**

**DEPARTMENT OF TRANSPORTATION**

**REGION 2 / DISTRICT 2 STANDARD**

**74.1**
40' SINGLE LANE MEDIAN CROSSOVER
(POSTED SPEED LIMIT 65 MPH, WORK ZONE SPEED LIMIT 55 MPH)

TYPICAL SECTION

General Notes
- Construction of median crossover shall conform to the requirement of current Standard Specifications.
- Slotted drain shall be constructed of 18 to 16 gauge corrugated metal pipe modified to accommodate slotted drain as shown.
- Pavement, subbase, & shoulder quantities are:
  - 206.25 Tons of aggregate subgrade improvement, 12".
- See District Standard 69.1 for details for the slotted drain.
- See District Standard 70.1416 for details for the median drainage through the crossover.
- The crossover is designed using a 55mph design speed.

Typical Plan
- Unless otherwise specified, when the median crossover is to be removed, the Contractor shall be required to saw full-depth along the shoulder line 6' from edge of pavement. The 6' adjacent to the edge of pavement shall remain in place and be used as shoulders. The cost of Sawing shall be included in the Pavement Removal.
- Length to midpoints shall be staked at a max 12' interval; all joints shall be sealed.
- Use Control Standards 701416 for this detail.

Table of Offsets and Drop

<table>
<thead>
<tr>
<th>Station</th>
<th>078</th>
<th>100</th>
<th>125</th>
<th>150</th>
<th>175</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offset feet</td>
<td>0.4</td>
<td>0.6</td>
<td>0.9</td>
<td>1.2</td>
<td>1.5</td>
</tr>
<tr>
<td>Drop feet</td>
<td>0.4</td>
<td>0.6</td>
<td>0.9</td>
<td>1.2</td>
<td>1.5</td>
</tr>
</tbody>
</table>
50' SINGLE LANE MEDIAN Crossover
(POSTED SPEED LIMIT 65 MPH, WORK ZONE SPEED LIMIT 55 MPH)

TYPICAL SECTION

GENERAL NOTES

Construction of median crossover shall conform to the requirements of current Standard Specifications.

Slotted drain shall be constructed of 14 or 16 gauge corrugated metal roadway pipe modified to accommodate slotted drain as shown.

Pavement, subbase, & shoulders quantities are:

IDOT/District 2 Standard

REVISED

REGION 2 / DISTRICT 2 STANDARD

12-07-10

50' SINGLE LANE MEDIAN CROSSOVER (55 MPH WORK ZONE SPEED LIMIT) 76.1

TYPICAL PLAN

STATE OF ILLINOIS

DEPARTMENT OF TRANSPORTATION

REGION 2 / DISTRICT 2 STANDARD

IDOT/District 2

USER NAME =

PLOT SCALE =

PLOT DATE =

DATE DESIGNED =

CHECKED =

DRAWN =

REVISED =

REVISED =

REVISED =

REVISED =
**64' SINGLE LANE MEDIAN CROSSOVER**

**TYPICAL SECTION**

(POSTED SPEED LIMIT 65 MPH, WORK ZONE SPEED LIMIT 55 MPH)

**GENERAL NOTES**

Construction of median crossover shall conform to the requirement of current Standard Specifications.

Slotted drain shall be constructed of 14 or 16 gauge corrugated metal pipe modified to accommodate slotted drain as shown.

Pavement, subbase, & shoulder quantities are

 handsome details shall be considered included to the

 See District Standard 61.2 or 68.1 for details for the slotted drain.

The crossover is designed using a 50mph design speed.

The end of the pipe guard shall be set where a minimum 1:4

blevels shall be installed where appropriate. All joints shall be sealed.

The end of the pipe guard shall be set where a minimum 1:4

 **TYPICAL PLAN**

**TABLE OF OFFSETS AND DROPS**

<table>
<thead>
<tr>
<th>Distance from location of median</th>
<th>0</th>
<th>60</th>
<th>120</th>
<th>180</th>
<th>240</th>
<th>300</th>
<th>360</th>
<th>420</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top of median crossover</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10&quot; slotted drain with variable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6&quot; min</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6' from inside edge</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12&quot; slotted drain</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>60'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10&quot; PCC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TIE BAR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Duct tape or wood blocks shall be used to cover slotted drain during construction of crossover paving.

**SECTION A-A**

**USE TO MAINTAIN MEDIAN DRAINAGE THROUGH THE CROSSOVER**

**SECTION A-A**

**TYPICAL CROSSOVER IS AT MEAN HIGH POINT**

**STATE OF ILLINOIS**

**DEPARTMENT OF TRANSPORTATION**

**REGION 2 / DISTRICT 2 STANDARD**

**FILE NAME**

**DATE**

**SHEET NO.**

**OF**

**TOTAL SHEETS**

**F. A. N. N. R. T. E.**

**CONTRACT NO.**

**REVISED**

**COUNT NO.**
TABLE OF OFFSETS AND DROPS

<table>
<thead>
<tr>
<th>Distance feet from section</th>
<th>0</th>
<th>50'</th>
<th>100'</th>
<th>150'</th>
<th>200'</th>
<th>250'</th>
<th>300'</th>
<th>350'</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drop feet from inside edge</td>
<td>6'</td>
<td>6'</td>
<td>6'</td>
<td>6'</td>
<td>6'</td>
<td>6'</td>
<td>6'</td>
<td>6'</td>
</tr>
</tbody>
</table>

Duct tape or wood blocks shall be used to cover slotted drain during construction of crossover paving.

SECTION A-A

Use to maintain median drainage through the crossover.

18" slotted drain with variable slot.

Flow line of median ditch shall be included in the Pavement Removal.

Construction of median crossover shall conform to the requirements of the current standard specifications.

Slotted drain shall be constructed of 14 or 16 gauge corrugated metal roadway pipe modified to accommodate slotted drain as shown.

Paving, subbases, & shoulder quantities are:

- Concrete Encasement
- Course Mix "C" N50
- 12" slotted drain with variable slot
- Beveled Pipe and Guard

See District Standard 61.2 or 68.1 for details for the slotted drain.

The crossover is designed using a 55mph design speed.

The end of the pipe guard shall be set where a minimum of 12' of front slope can be constructed from each side of pipe guard to the HMA shoulder.

The PCC Pavement (Jointed) 10" shall be tied to adjacent existing concrete pavement and the concrete encasement for the slotted drain.

The tie bars shall be No.6 bars 24" long @ 30" cts, and installed according to the applicable portions of Article 420.05 (b) of the Standard Specifications.

The crossover is designed using a 55mph design speed.

The end of the pipe guard shall be set where a minimum of 12' of front slope can be constructed from each side of pipe guard to the HMA shoulder.

The PCC Pavement (Jointed) 10" shall be tied to adjacent existing concrete pavement and the concrete encasement for the slotted drain.

The tie bars shall be No.6 bars 24" long @ 30" cts, and installed according to the applicable portions of Article 420.05 (b) of the Standard Specifications. The cost of the tie bars to be included in the cost of the PCC Pavement (Jointed) 10".

TRAFFIC CONTROL STANDARD 701416 IS TO BE USED WITH THIS DETAIL.

If otherwise specified, when the median crossover is to be removed, the Contractor shall be required to saw full-depth along the shoulder line 6' from edge of pavement, the 6' adjacent to the edge of pavement shall remain in place and be used as shoulders. The cost of sawing shall be included in the Pavement Removal.

Pavement, subbase, & shoulder quantities are:

- Concrete Encasement
- Course Mix "C" N50
- 12" slotted drain with variable slot
- Beveled Pipe and Guard

See District Standard 61.2 or 68.1 for details for the slotted drain.

The crossover is designed using a 55mph design speed.

The end of the pipe guard shall be set where a minimum of 12' of front slope can be constructed from each side of pipe guard to the HMA shoulder.

The PCC Pavement (Jointed) 10" shall be tied to adjacent existing concrete pavement and the concrete encasement for the slotted drain.

The tie bars shall be No.6 bars 24" long @ 30" cts, and installed according to the applicable portions of Article 420.05 (b) of the Standard Specifications. The cost of the tie bars to be included in the cost of the PCC Pavement (Jointed) 10".
**40' TWO LANE MEDIAN CROSSOVER**
*(POSTED SPEED LIMIT 55 MPH, WORK ZONE SPEED LIMIT 45 MPH)*

**Typical Section**

**General Notes**

Construction of median crossover shall conform to the requirement of current Standard Specifications.

Slotted drain shall be constructed of 14 or 16 gauge corrugated metal roadway pipe modified to accommodate slotted drain as shown.

Pavement, subbase, & shoulder quantities are:

- **42001, 420101, & 420106**

See District Standard 61.2 or 68.1 for details for the slotted drain.

The crossover is designed using a 45mph design speed.

The end of the pipe guard shall be set where a minimum 1:4 front slope can be constructed from each side of pipe guard to the HMA shoulder.

The PCC Pavement (Jointed) 10" shall be constructed according to Section 420 of the Standard Specifications and Highway Standards 42000, 42010, & 42020.

The PCC Pavement (Jointed) 10" shall be tied to adjacent existing concrete pavement and the concrete encasement for the slotted drain.

The tie bars shall be No.6 bars 24" long @ 30" cts, and installed according to the applicable portions of Article 420.05 (b) of the Standard Specifications. The cost of the bars to be included in the cost of the PCC Pavement (Jointed) 10".

**Table of Offsets and Drops**

<table>
<thead>
<tr>
<th>Station feet from location</th>
<th>0</th>
<th>100</th>
<th>125</th>
<th>150</th>
<th>167.89</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office feet from inside edge of pavement</td>
<td>20</td>
<td>19</td>
<td>14.22</td>
<td>13.17</td>
<td>12.02</td>
</tr>
<tr>
<td>Drop feet from inside edge of pavement</td>
<td>10'</td>
<td>9.39</td>
<td>5.79</td>
<td>6.17</td>
<td>6.17</td>
</tr>
</tbody>
</table>

Duct tape or wood blocks shall be used to cover slotted drain during construction of crossover paving.

**Section A-A**

Use to maintain medium drainage through the crossover.

18" slotted drain with 6" slot.

**Typical Plan**
**50' TWO LANE MEDIAN Crossover**

*(POSTED SPEED LIMIT 55 MPH, WORK ZONE SPEED LIMIT 45 MPH)*

---

**GENERAL NOTES**

Construction of median crossover shall conform to the requirement of current Standard Specifications.

Slotted drain shall be constructed of 14 or 16 gauge corrugated metal roadway pipe modified to accommodate slotted drain as shown.

Pavement, subbase, & shoulder quantities are:

- **PCC Pavement (Jointed) 10"**
- **HMA Shoulder 6"**
- **HMA Surface 2" COARSE MIX "C", N50**
- **Concrete Encasement (Class SI Concrete)**

**TABLE OF OFFSETS AND DROPS**

<table>
<thead>
<tr>
<th>Station</th>
<th>Offset Feet</th>
<th>Drop Feet</th>
<th>6'</th>
<th>12'</th>
<th>18'</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0.00</td>
<td>0.50</td>
<td>0.46</td>
<td>0.52</td>
<td>0.60</td>
<td>1.62</td>
</tr>
<tr>
<td>0.50</td>
<td>1.00</td>
<td>0.99</td>
<td>0.64</td>
<td>0.99</td>
<td>1.37</td>
<td>3.60</td>
</tr>
<tr>
<td>1.00</td>
<td>1.00</td>
<td>0.99</td>
<td>0.64</td>
<td>0.99</td>
<td>1.37</td>
<td>3.60</td>
</tr>
</tbody>
</table>

**SECTION A-A**

*USE TO MAINTAIN MEDIAN DRAINAGE THROUGH THE CROSSOVER*

- **10" slotted drain with variable side slope of median crossover**
- **TIE BAR**
- **TIE BAR**

Duct tape or wood blocks shall be used to cover slotted drain during construction of crossover paving.

**TYPICAL PLAN**

---

**TYPICAL SECTION**
64' TWO LANE MEDIAN Crossover (Posted Speed Limit 55 MPH, Work Zone Speed Limit 45 MPH)

TYPICAL SECTION

General Notes:
- Construction of median crossover shall conform to the requirement of current Standard Specifications.
- Slotted drain shall be constructed of 14 or 16 gauge corrugated metal roadway pipe modified to accommodate slotted drain as shown.
- PCC Pavement (Jointed) 10" shall be constructed according to Section 420 of the Standard Specifications and Highway Standards 420001, 420101, & 420106.
- The PCC Pavement (Jointed) 10" shall be tied to adjacent existing concrete pavement and the concrete encasement for the slotted drain.
- The PCC Pavement (Jointed) 10" shall be designed using a 45mph design speed.
- The end of the pipe guard shall be set where a minimum 1:4 front slope can be constructed from each side of pipe guard to the HMA Shoulder.
- The tie bars shall be No.6 bars 24" long @ 30" cts, and installed according to the applicable portions of Article 420.05 (b) of the Standard Specifications.
- Concrete Encasement (Class SI Concrete) shall be included in the cost of the PCC Pavement (Jointed) 10".
- Unless otherwise specified, when the median crossover is to be removed, the Contractor shall be required to saw full-depth along the shoulder line 6' from grade of pavement, the 6' adjacent to the edge of pavement shall remain in place and be used as shoulders. The cost of sawing shall be included in the Project Removal.
- All joints and laps shall be bonded or capped as shown.

Typical Plan:

Table of Offsets and Drops:

<table>
<thead>
<tr>
<th>Distance from Location Station</th>
<th>0</th>
<th>10</th>
<th>20</th>
<th>30</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80</th>
<th>90</th>
<th>100</th>
<th>110</th>
<th>120</th>
<th>130</th>
<th>140</th>
<th>150</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dips from inside edge of pavement</td>
<td>0.10'</td>
<td>0.08'</td>
<td>0.06'</td>
<td>0.04'</td>
<td>0.02'</td>
<td>0.00'</td>
<td>0.02'</td>
<td>0.04'</td>
<td>0.06'</td>
<td>0.08'</td>
<td>0.10'</td>
<td>0.12'</td>
<td>0.14'</td>
<td>0.16'</td>
<td>0.18'</td>
<td>0.20'</td>
</tr>
<tr>
<td>Offsets from inside edge of pavement</td>
<td>1.00'</td>
<td>2.00'</td>
<td>3.00'</td>
<td>4.00'</td>
<td>5.00'</td>
<td>6.00'</td>
<td>7.00'</td>
<td>8.00'</td>
<td>9.00'</td>
<td>10.00'</td>
<td>11.00'</td>
<td>12.00'</td>
<td>13.00'</td>
<td>14.00'</td>
<td>15.00'</td>
<td>16.00'</td>
</tr>
</tbody>
</table>

Section A-A:
- Use to establish median drainage through the crossover.
- 10" slotted drain with variable slope into top of median crossover.
- Concrete encasement (Class II Concrete).
- Tie bar.
- 10" PCC Pavement Limited 10".

Section A-A:
- Use crossover is at median high point.

General Notes:
- Beveled pipe and guard shall be installed as shown.
- Flow line of median ditch (when crossover is at median high point).
- See District Standard 86.1 for details for the beveled pipe & guard.

Typical Plan:

64 TWO LANE MEDIAN CROSSOVER 81.1
40' TWO LANE MEDIAN CROSSOVER

(POSTED SPEED LIMIT 65 MPH, WORK ZONE SPEED LIMIT 55 MPH)

**GENERAL NOTES**

Construction of median crossover shall conform to the requirement of current Standard Specifications.

Slotted drain shall be constructed of 14 or 16 gauge corrugated metal roadway pipe modified to accommodate slotted drain as shown.

Pavement, subbase, & shoulders quantities are:

- 

The crossover is designed using a 55mph design speed.

The end of the pipe guard shall be set where a minimum 1:4 front slope can be constructed from each side of pipe guard to the HMA shoulder.

The PCC Pavement (Jointed) 10” shall be tied to adjacent existing concrete pavement and the concrete encasement for the slotted drain.

The PCC Pavement (Jointed) 10” shall be constructed according to the applicable portions of Article 420.05 (b) of the Standard Specifications. The cost of the bars to be included in the cost of the PCC Pavement (Jointed) 10”.

**SECTION A-A**

RTE: 100'

**TYPICAL PLAN**

Unless otherwise specified, when the median crossover is to be removed, the Contractor shall be required to saw full-depth along the shoulder line 6’ from the edge of pavement, the 2' adjacent to the edge of pavement shall remain in place and be used as shoulders. The cost of sawing shall be included in the Pavement Removal.

Longitudinal joints shall be sawed at a max 12' width. All joints shall be sealed.

Variable slot 18” slotted drain with 6” PCC

HMA SHOULDERS 6”

PCC PAVEMENT (JOINTED) 10”

200' CONCRETE PAVEMENT (ALL FOUR CORNERS)

190' CONCRETE SHOULDER (ALL FOUR CORNERS)

40' TWO LANE MEDIAN CROSSOVER (45 MPH WORK ZONE SPEED LIMIT)
Construction of median crossover shall conform to the requirement of Section 420 of the Standard Specifications. Slotted drain shall be constructed of 14 or 16 gauge corrugated metal pipe modified to accommodate slotted drain as shown.

Pavement, subbase, & shoulder quantities are:

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMA Shoulder 6”</td>
<td>2438.79 Sq. Yds.</td>
</tr>
<tr>
<td>2” HMA Surface Course “C”, N50</td>
<td>2593.23 Sq. Yds.</td>
</tr>
<tr>
<td>Aggregate Subgrade Improvement, 12”</td>
<td>81.92 Tons</td>
</tr>
</tbody>
</table>

The PCC Pavement (Jointed) 10” shall be constructed according to Section 420 of the Standard Specifications and Highway Standards 420001, 420101, & 420106. The PCC Pavement (Jointed) 10” shall be tied to adjacent existing concrete pavement and the concrete encasement for the slotted drain. The tie bars shall be No.6 bars 24” long @ 30” cts, and installed according to the applicable portions of Article 420.05 (b) of the Standard Specifications. The tie bars to be included in the cost of the PCC Pavement (Jointed) 10”.

The end of the pipe guard shall be set where a minimum 6” - 2’ from edge of pavement). The 6’ adjacent to the edge of the pipe guard shall remain in place and be used as shoulders. The cost of the PCC Pavement (Jointed) 10” shall be included in the Pavement Removal.

The PCC Pavement (Jointed) 10” shall be tied to adjacent existing concrete pavement and the concrete encasement for the slotted drain. The tie bars shall be No.6 bars 24” long @ 30” cts, and installed according to the applicable portions of Article 420.05 (b) of the Standard Specifications. The tie bars to be included in the cost of the PCC Pavement (Jointed) 10”.

The crossover is designed using a 55mph design speed. See District Standard 86.1 for details for the slotted drain. The crossover is designed using a 55mph design speed. See District Standard 86.1 for details for the slotted drain.

The end of the pipe guard shall be set where a minimum 1:4

TYPICAL PLAN

GENERAL NOTES

SLOTTED DRAIN 12” WITH 6” SLOT.

Construction of median crossover shall conform to the requirement of Section 420 of the Standard Specifications. Slotted drain shall be constructed of 14 or 16 gauge corrugated metal pipe modified to accommodate slotted drain as shown.

Pavement, subbase, & shoulder quantities are:

<table>
<thead>
<tr>
<th>Item</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>HMA Shoulder 6”</td>
<td>2438.79 Sq. Yds.</td>
</tr>
<tr>
<td>2” HMA Surface Course “C”, N50</td>
<td>2593.23 Sq. Yds.</td>
</tr>
<tr>
<td>Aggregate Subgrade Improvement, 12”</td>
<td>81.92 Tons</td>
</tr>
</tbody>
</table>

The PCC Pavement (Jointed) 10” shall be constructed according to Section 420 of the Standard Specifications and Highway Standards 420001, 420101, & 420106. The PCC Pavement (Jointed) 10” shall be tied to adjacent existing concrete pavement and the concrete encasement for the slotted drain. The tie bars shall be No.6 bars 24” long @ 30” cts, and installed according to the applicable portions of Article 420.05 (b) of the Standard Specifications. The tie bars to be included in the cost of the PCC Pavement (Jointed) 10”.

The end of the pipe guard shall be set where a minimum 6” - 2’ from edge of pavement). The 6’ adjacent to the edge of the pipe guard shall remain in place and be used as shoulders. The cost of the PCC Pavement (Jointed) 10” shall be included in the Pavement Removal.

The PCC Pavement (Jointed) 10” shall be tied to adjacent existing concrete pavement and the concrete encasement for the slotted drain. The tie bars shall be No.6 bars 24” long @ 30” cts, and installed according to the applicable portions of Article 420.05 (b) of the Standard Specifications. The tie bars to be included in the cost of the PCC Pavement (Jointed) 10”.

The end of the pipe guard shall be set where a minimum 1:4
64' TWO LANE MEDIAN CROSSOVER
(POSTED SPEED LIMIT 65 MPH, WORK ZONE SPEED LIMIT 55 MPH)

**GENERAL NOTES**

Construction of median crossover shall conform to the requirement of current Standard Specifications.

Slotted drain shall be constructed of 14 or 16 gauge corrugated metal pipe modified to accommodate slotted drain as shown.

Pavement, subbase, & shoulder quantities are:

<table>
<thead>
<tr>
<th>Description</th>
<th>Length (ft)</th>
<th>Width (ft)</th>
<th>Area (sq ft)</th>
<th>Weight (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concrete Encasement (Class SI Concrete)</td>
<td>64'</td>
<td>2'</td>
<td>81.32</td>
<td>95.09</td>
</tr>
<tr>
<td>Slotted Drain</td>
<td>64'</td>
<td>2'</td>
<td>6.00</td>
<td>78.80</td>
</tr>
<tr>
<td>Aggregate Subgrade Improvement, 12&quot;</td>
<td>64'</td>
<td>2'</td>
<td>175.0</td>
<td>200.0</td>
</tr>
</tbody>
</table>

The crossover is designed using a 55mph design speed.

The end of the slip guard shall be set where a minimum of 12" in front slope can be constructed from each side of slip guard to the HMA shoulder.

The PCC Pavement (jointed) 10" shall be constructed according to Section 420.10 of the Standard Specifications and Highway Standards 420001, 420101 & 420106.

The PCC Pavement (jointed) 10" shall be tied to adjacent existing concrete pavement and the concrete encasement for the slotted drain.

The tie bars shall be No.6 bars 24" long @ 30" cts, and installed according to the applicable portions of Article 420.05 (b) of the Standard Specifications. The cost of the bars to be included in the cost of the PCC Pavement (jointed) 10".

**TYPICAL PLAN**

**STATE OF ILLINOIS**
**DEPARTMENT OF TRANSPORTATION**
**REGION 2 / DISTRICT 2 STANDARD**

**TYPICAL SECTION**

**SECTION A-A**

USE TO MAINTAIN MEDIAN DRAINAGE THROUGH THE CROSSOVER

12" slotted drain with 6" slot

COURSE OF CEMENT CONCRETE ENCASMENT (CLASS SI CEMENT CONCRETE)

10% PCC

TOP OF MEDIAN CROSSOVER

10% PCC

TOP OF CEMENT CONCRETE ENCASMENT

TIE BAR

MIDLINE DRAINAGE

64' TWO LANE MEDIAN CROSSEOVER (55 MPH WORK ZONE SPEED LIMIT)
Construction of median crossover shall conform to the requirements of current Standard Specifications. Slotted drain shall be constructed of 14 or 16 gauge corrugated metal pipe modified to accommodate slotted drain as shown.

1. PCC Pavement (Jointed) 10" shall be constructed according to Section 420 of the Standard Specifications and Highway Standards 420001, 420101, & 420106.

2. The tie bars shall be No.6 bars 24" long @ 30" cts, and installed according to the applicable portions of Article 420.05(b) of the Standard Specifications. The tie bars shall be included in the cost of the PCC Pavement (Jointed) 10".

3. Concrete Encasement (Class SI Concrete) shall be constructed of 10 or 12" concrete pavement modified to accommodate concrete encasement for the slotted drain.

4. The PCC Pavement (Jointed) 10" shall be tied to adjacent existing pavement, subbase, & shoulder quantities are:

   - Existing 2 Lane Pavement
   - Concrete Encasement
   - Concrete Encasement
   - Concrete Encasement

5. Construction of median crossover shall conform to the requirement of current Standard Specifications.

6. The end of the pipe guard shall be set where a minimum 6' front slope can be constructed from each side of pipe guard to the HR shoulder.

7. Slotted drain shall be constructed of 14 or 16 gauge corrugated metal pipe modified to accommodate slotted drain as shown.

8. See District Standard 86.1 or 68.1 for details for the slotted drain.

9. See District Standard 86.1 for details for the beveled pipe & guard.

10. The crossover is designed using a 55mph design speed.
BEVELED PIPE & GUARD DETAIL FOR MEDIAN Crossovers

GENERAL NOTES:
Details shown herein are for the construction of beveled pipe and guard. Alternate designs, methods of construction or materials may be submitted to the Engineer for approval. All methods of construction and materials involved shall conform to current Standard Specifications.

Reinforcing steel used in construction of “Beveled Pipe and Guard” shall be deformed bars meeting the requirements of Article 1006.10 of the Standard Specifications. All steel bars shall be hot-dip galvanized in accordance with ASTM A 123 specifications.

Concrete used in construction of the beveled pipe and guard shall be Class “SI” Concrete.

Reinforcing steel used in construction of “Beveled Pipe and Guard” shall be deformed bars meeting the requirements of Article 1006.10 of the Standard Specifications. All steel bars shall be hot-dip galvanized in accordance with ASTM A 123 specifications.

Concrete used in construction of the beveled pipe and guard shall be Class “SI” Concrete.

The corrugated metal pipe shall be cut to fit the 1:8 foreslope. Stakes shall be cut into the C.M.P. for placement of the “b” and “c” bars. After the foreslope has been placed, the “b” and “c” bars shall be fitted into the slots cut in the C.M.P. so they will be in proper position when the concrete collar is poured.

This work shall be paid for at the contract unit price per each for “Beveled Pipe and Guard”, as shown herein and as directed by the Engineer.

TABLE OF DIMENSIONS

<table>
<thead>
<tr>
<th>PIPE SIZE</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>9&quot; x 9&quot;</td>
<td>36</td>
<td>6&quot;</td>
<td>10&quot;</td>
</tr>
<tr>
<td>18</td>
<td>13 x 10&quot;</td>
<td>42</td>
<td>10&quot; x 4&quot;</td>
<td>14 x 10&quot;</td>
</tr>
</tbody>
</table>

ALL DIMENSIONS ARE IN INCHES UNLESS OTHERWISE NOTED.
GENERAL NOTES
This work shall be done according to Section 631 of the Standard Specifications and this detail.

See Standard 630001 for details of guardrail not shown.

Thrie beam shall be bolted to block-out of all posts.

Posts located above pier foundation shall have plate attached to post and anchored to foundation.

All slope ratios are expressed as units of vertical displacement to units of horizontal displacement (V:H).

All dimensions are in inches unless otherwise shown.

The Traffic barrier Terminal, Type 6B (Special) will be measured for payment, complete in place, in units of each.

This work shall be paid for at the contract unit price per each for TRAFFIC BARRIER TERMINAL, TYPE 6B (SPECIAL).
**DETAILS OF PLANTING AND BRACING TREES**

### Small Trees Smaller Than 4½ In Diameter

<table>
<thead>
<tr>
<th>Tree Size</th>
<th>Diameter of Ball or Root Syst.</th>
<th>Depth of Hole Excavation</th>
<th>Width of Hole Excavation</th>
<th>Thickness of Mulch Cover</th>
<th>Depth of Ball or Root Syst.</th>
<th>Volume of Mulch Cover (Cu. Yds.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2</td>
<td>16</td>
<td>10</td>
<td>36</td>
<td>4</td>
<td>16</td>
<td>0.24</td>
</tr>
<tr>
<td>2½-3½ BB</td>
<td>24</td>
<td>14</td>
<td>48</td>
<td>4</td>
<td>16</td>
<td>0.28</td>
</tr>
<tr>
<td>3½-4½ BB</td>
<td>32</td>
<td>18</td>
<td>60</td>
<td>4</td>
<td>19</td>
<td>0.29</td>
</tr>
<tr>
<td>4½-5½ BB</td>
<td>40</td>
<td>20</td>
<td>72</td>
<td>4</td>
<td>22</td>
<td>0.32</td>
</tr>
<tr>
<td>5½-6½ BB</td>
<td>48</td>
<td>22</td>
<td>84</td>
<td>4</td>
<td>24</td>
<td>0.34</td>
</tr>
</tbody>
</table>

### Large Trees Over 4½ In Diameter

<table>
<thead>
<tr>
<th>Tree Size</th>
<th>Diameter of Ball or Root Syst.</th>
<th>Depth of Hole Excavation</th>
<th>Width of Hole Excavation</th>
<th>Thickness of Mulch Cover</th>
<th>Depth of Ball or Root Syst.</th>
<th>Volume of Mulch Cover (Cu. Yds.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2</td>
<td>16</td>
<td>10</td>
<td>36</td>
<td>4</td>
<td>16</td>
<td>0.24</td>
</tr>
<tr>
<td>2½-3½ BB</td>
<td>24</td>
<td>14</td>
<td>48</td>
<td>4</td>
<td>16</td>
<td>0.28</td>
</tr>
<tr>
<td>3½-4½ BB</td>
<td>32</td>
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<td>60</td>
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</tr>
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<tr>
<td>5½-6½ BB</td>
<td>48</td>
<td>22</td>
<td>84</td>
<td>4</td>
<td>24</td>
<td>0.34</td>
</tr>
</tbody>
</table>

**Explanation:**
- Earth anchors placed parallel to line of pull.
- 1½ screw eyes staggered vertically, approximately every 6.
- Equal distance between trees.
- Square hole.
- Tree plant and anchor plate.
- Backfill.
- Round hole.
- No. 14 steel wire.
- Steel post and anchor plate.
- No. 12 steel wire.

**Notes:**
- All dimensions are in inches unless otherwise noted.
- Trees over 4½ in diameter.
- Trees smaller than 4½ in diameter.

**References:**
- USDA, United States Department of Agriculture, Agricultural Research Service.
- Tree Planting Zone Map.
- Plant Marriages Zone Map.