GENERAL

NO.	DESCRIPTION
	COVER
I-1	INDEX SHEET

PAVING DETAILS

NO.	DESCRIPTION
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P-2	LOCAL RESIDENTIAL & COLLECTOR STREETS - URBAN
P-3	UNDIVIDED PRIMARY ARTERIAL - RURAL
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P-5	CONSTRUCTION JOINT DETAILS
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P-7	BRICK PAVERS FOR MEDIAN NOSE AND CROSS WALKS
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P-9	SIDEWALK DETAILS (SHEET 2 OF 3)
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NO.	DESCRIPTION
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SD-2	BACKFILL / EMBEDMENT
SD-3	HEADWALLS & PIPE COLLARS
SD-4	JUNCTION BOX DETAILS (SHEET 1 OF 2)
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SD-6	INLETS (SHEET 1 OF 3)
SD-7	INLETS (SHEET 2 OF 3)
SD-8	INLETS (SHEET 3 OF 3)
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SD-10	ROOF DRAIN DISCHARGE TO CURB
SD-11	TYPICAL PILOT CHANNEL
SD-12	STORM DRAIN OUTFALL TO CREEK
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CERTIFICATION:

THIS TOWN OF HICKORY CREEK STANDARD DETAIL SHEET IS AUTHORIZED FOR USE IN THIS PROJECT BY THE ENGINEER WHOSE SEAL APPEARS ON THIS SHEET. MODIFICATIONS TO THE STANDARD DETAILS SHALL BE NOTED ON THIS SHEET AND SHALL COMPLY WITH THE TOWN'S ORDINANCES, STATE, AND FEDERAL REGULATIONS.

INDEX OF SHEETS

TOWN OF HICKORY CREEK
DENTON COUNTY, TEXAS

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PAVING GENERAL NOTES

1. All construction shall be in accordance with the standard specifications and details of the Town of Hickory Creek and the Fourth Edition of the "Standard Specifications for Public Works Construction - North Central Texas" herein referred to as "COG". Copies may be obtained from the North Central Texas Council of Governments, 616 Six Flags Drive, Suite 200, Arlington, Texas 76005-5888.

2. Subgrade preparation shall be in accordance with COG Item 301.

3. Lime Stabilized subgrade shall be installed in accordance with COG Item 301.2. Lime shall be placed using the slurry method, to be mixed on-site and not trucked in. Refer to COG Item 301.2.1.1.

4. The Contractor shall install supporting chairs for reinforcing steel on a one per square yard spacing in all concrete pavements. The chairs are to be plastic and installed as per COG Item 303.2.11.

5. 20% (by weight) of the cement content may be replaced with Type C fly ash. Refer to COG Item 303.2.4.

6. Concrete for all paving and curbs within Town of Hickory Creek shall have a minimum strength of 4,000 psi at 28 days for machine paved and 4,500 psi at 28 days for hand poured. The Town shall approve the concrete mix design in writing prior to use.

7. Slump requirements for slip form paving shall be an average of three inches with a maximum of four inches; for hand formed paving it shall be an average of four inches with a maximum of five inches; and for sidewalk & other it shall be specified by the owner. Refer to COG Item 303.3.4.4.

8. Curbs for concrete pavement shall be poured monolithically. Refer to COG Item 303.5.9.

9. The Contractor shall use a liquid membrane-forming compound as per COG Item 303.2.13.1.1.

10. Construction joints shall be used in all bock-outs for driveways and inlets.

11. Transverse joints shall be sawed on 15 foot centers for all pavement thicknesses. The concrete saw must be stationed on the job-site prior to placing the pavements. All joints shall be sawed within an eighteen (18) hour period from the time of the pour.

12. Construction and longitudinal joints shall be placed in accordance with details. Saw joints to be 1/4 inch for each inch of pavement thickness.

13. The Contractor shall submit a Jointing Plan, for review by the Town, prior to placing.

14. Parkway, roadway ditches and adjacent disturbed areas for paving of roadways in undeveloped areas shall be seeded with Bermuda grass. Parkway and adjacent disturbed areas for paving of roadways in developed areas shall be block sodded with either Bermuda or St. Augustine to match the adjacent private property. Medians shall be block sodded. All sodding and seeding will be placed on four inches of topsoil. The Contractor is responsible for maintenance, including mowing and watering until vegetation is established at not less than 20 plants per square foot area, and until accepted by the Town.

15. Unless stated otherwise in the Contract Documents, the Contractor is responsible for all testing. All final reports shall be turned in to the Town Inspector within five (5) working days. Failed samples must be reported to the Town Inspector immediately.

   a. The CONTRACTOR shall be responsible for notifying the Town Inspector at least 24 hours prior to any required testing.

   b. Soil testing technicians shall provide written proof of having minimum of two (2) years of related field experience.

   c. The CONTRACTOR shall coordinate all testing activities with the Town Inspector and shall facilitate required testing throughout the construction period. The Inspector shall be present during all testing.

   d. The Town shall make final decision as to the validity of all testing results.

   e. The CONTRACTOR shall be responsible for ensuring that materials to be tested are in compliance with all plans and specifications prior to testing. All materials found not to be in compliance with the plans and specifications before and after testing shall be removed and replaced at the CONTRACTOR'S expense.

   f. All costs associated with the retesting of work that fails to meet the specifications required in the contract documents shall be borne by the CONTRACTOR For Town projects, retesting cost shall be withheld from pay requests submitted by the CONTRACTOR, this cost will be based on the Town's cost with no additional mark-up. A letter of acceptance will not be issued until all testing deficiencies are addressed and all related cost paid.

   g. The Town Inspector shall be notified of concrete placement 24 hours in advance for steel and form inspection.

h. Subgrade Testing

   1) Samples shall be taken for all classifications of soils on site. Testing for sulfate presence and lime series tests shall be conducted for all samples prior to any stabilization. If sulfate content is greater than 2,000 ppm (parts per million), specific recommendation shall be made by geotechnical engineer for subgrade preparation and thicker pavement section to be approved by the Town. The use of lime or cement and the percent content shall comply with the Geotech Engineer recommendations. Additional geotechnical testing and recommendations may be required by Town as field conditions dictate. Atterberg Limits shall be determined on all Proctor samples.

   2) Gradations for lime treated subgrade shall be taken at intervals not exceeding 300 feet along road and must pass 100% through a 1 3/4" sieve and 60% through a No. 4 sieve according to NCTCOG Item 301.2.3.5.1.

   3) Gradations for Portland cement treated subgrade shall be taken at intervals not exceeding 100 feet along road and must pass 100% through a 1" sieve and 80% through a No. 4 sieve according to NCTCOG Item 301.3.3.2.

   4) Lime subgrade shall be tested in accordance with NCTCOG Item 301.2.1.3. Tests will be performed by excavating deeper than lime treatment and administering a phenolphthalein indicator.

   5) Densities shall be taken on subgrade in accordance with the Wastewater General Notes 15.1.3 Mechanical Tamping and in accordance with NCTCOG Item 301.2.3.6 unless otherwise stated on the plans or in the specifications.

   6) All subgrade shall be visually "proof rolled" after it is trimmed and prior to placement of steel.

   7) Densities shall be taken at least 72 hours before concrete placement (NCTCOG Item 303.5.1). If more than 72 hours elapse, densities must be retaken unless an approved emulsion sealant is used in accordance with NCTCOG Item 302.3.5.

   8) Locations for densities, gradations, and depth checks shall be at the discretion of the Inspector and shall be representative of the entire cross section of the subgrade.

   9) Subgrade failures shall be defined by Inspector or ENGINEER. Repair method will be discussed with Inspector or ENGINEER and approved prior to beginning repair work.

   10) Multiple tests may be required across width of right-of-way.

   11) For emulsion placement over subgrade refer to NCTCOG Item 302.3.5.2.

i. Concrete Testing for Pavements, Curbs, Sidewalks and Driveways.

   1) A concrete mix design must be submitted and approved by the Town prior to any placement of concrete. A minimum of four (4) test cylinders shall be obtained per one hundred cubic yard (100 cy) of concrete placed with a minimum of four cylinders per placement. T ests shall also include slump, air contents and temperature of concrete mixture; each mix design of concrete placed each day shall also be tested. Concrete strength shall be tested at 7 days (2 cylinders) and 28 days (2 cylinders). Additional cylinders and or tests may be requested at the Town Inspector's discretion.

   2) Concrete with a temperature of 85 degrees or higher will require a retarding agent admixture.

   3) The maximum temperature of concrete at the time of placement shall not exceed 95 degrees. It shall be the CONTRACTOR and/or his supplier's responsibility to take steps to control the temperature of concrete. All concrete that exceeds the temperature limit of 95 degrees will be rejected.

   4) Forms shall not be removed from pavement, sidewalks, ramps, or retaining walls for 24 hours minimum, and shall not be backfilled less than 72 hours after concrete placement. Pavement shall have a minimum cure time of 7 days, but may be opened to traffic earlier at the discretion of the Inspector or ENGINEER only after review of compressive strength data. Temporary perpendicular crossings may be made after 72 hours by ramping soil over the new pavement at a depth of not less than 18-inches and a width of not less than 10-feet. Prior to grout wiping any concrete, CONTRACTOR shall demonstrate method of surface preparation to ensure adhesion of grout.

   5) All street pavement shall be cored to verify proper pavement thickness and strength prior to acceptance. Cores for strength and depth shall be 4-inches diameter and taken at intervals not exceeding 600 feet; cores for depth only shall be 2-inches diameter and shall be taken at intermediate intervals not exceeding 300-feet. Locations will be approved by the Town. Multiple cores may be required at each interval to represent entire cross section. All cores shall be taken at 28 days and results shall be correlated with the cylinder test results. Evaluation of cores will be in accordance with NCTCOG Item 303.8.2. All required pavement replacement shall be in full panel increments.

j. Hot-Mix Asphalt Concrete Pavement Testing

   1) Specifications shall follow COG Item 302 and conform to the TxDOT Standard for Hot-Mix Asphaltic Concrete.

   2) The asphaltic mixture shall be tested for oven burn off/gradation and stability.

   3) A relative density of not less than 92% will be required after final compaction of the in-place pavement section. The CONTRACTOR shall schedule the CMT Laboratory to come out in the field and establish a rolling pattern. The use of nuclear field density determinations shall not be accepted as the basis for acceptance with respect to density. The CONTRACTOR shall be responsible for assuring that the compaction of the asphaltic concrete in place will attain between 5% and 9% (five and nine percent) air voids. The CONTRACTOR's responsibility for the required compaction includes the selection of rolling equipment and selection of rolling patterns to achieve the required compaction.

   4) HMAC mix temperature range at time of placement shall be between 260 degrees and 325 degrees. The asphaltic mixture shall not be placed when the air temperature is below 50 degrees but may be placed when the air temperature is above 40 degrees and rising, the temperature being taken in the shade and away from artificial heat.

   5) In-place compaction control is required for all mixtures. Asphaltic concrete should be placed and compacted to contain not more than 9% (nine percent) nor less than 5% (five percent) air void unless otherwise indicated. The percent air voids will be calibrated using the maximum theoretical specific gravity of the mixture determined according to TxDOT Test Method Tex-227-F Roadway Specimen, which shall either be cores or sections of pavement, will be tested according to TxDOT Test Method Tex-207-F. The same specimen shall be used in determining both the theoretical density and field density.

   6) Prime coat will follow COG Items 302.7 and 302.9.6.1.

   7) Tack coat will follow COG Specifications item 302.9.6.2.

   8) HMAC mix designs shall follow COG Item 302.9.3 and the grading tables included in this section. These mixtures will be in accordance with TXDOT Test Method Tex-204-F, design of Bituminous Mixtures.

CERTIFICATION:

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PAVEMENT DETAILS

PAVING GENERAL NOTES

TOWN OF HICKORY CREEK
DENTON COUNTY, TEXAS

DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
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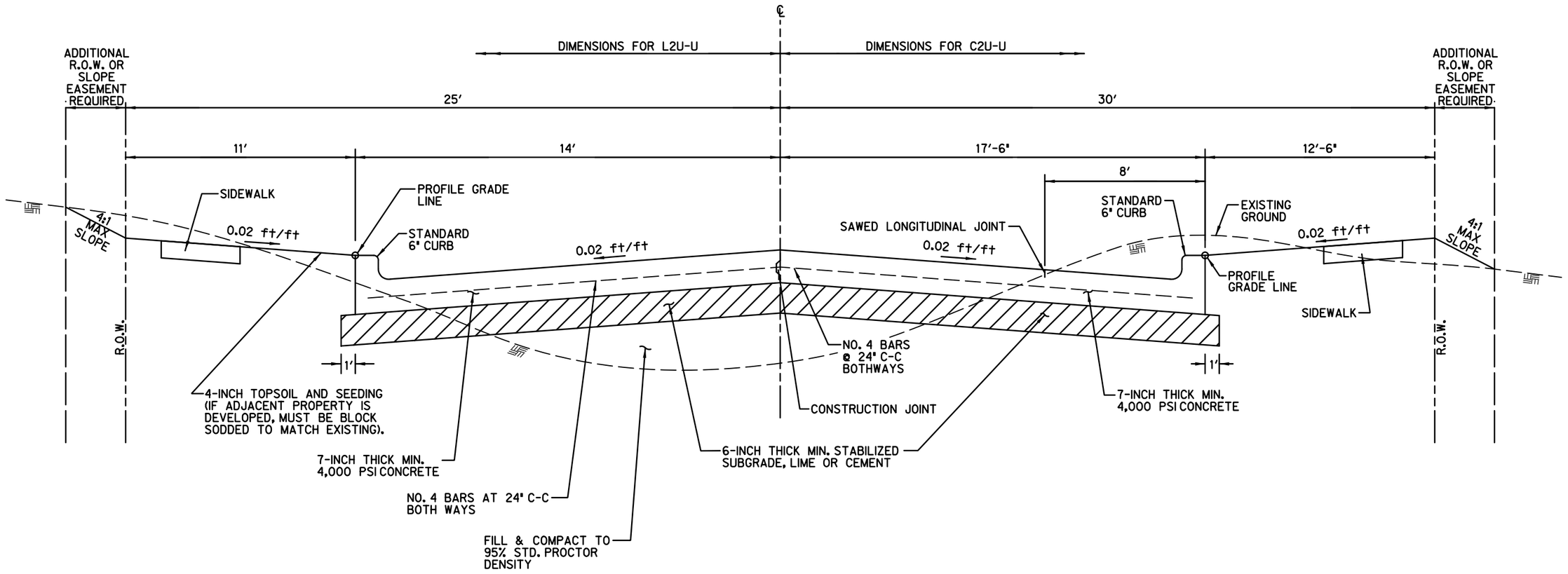

REINFORCED CONCRETE PAVING STANDARDS
LOCAL RESIDENTIAL & COLLECTOR STREETS - URBAN
L2U-U & C2U-U

N.T.S.

NOTES:
1. L2U-U IS SHOWN ON LEFT SIDE OF DRAWING AND C2U-U IS SHOWN ON RIGHT SIDE OF DRAWING.
2. ALL DIMENSIONS TO CURB ARE SHOWN TO THE BACK OF CURB.
3. SEE SIDEWALK DETAILS FOR SIDEWALK LOCATIONS.

CERTIFICATION:

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PAVEMENT DETAILS

LOCAL RESIDENTIAL & COLLECTOR STREETS - URBAN

TOWN OF HICKORY CREEK
DENTON COUNTY, TEXAS

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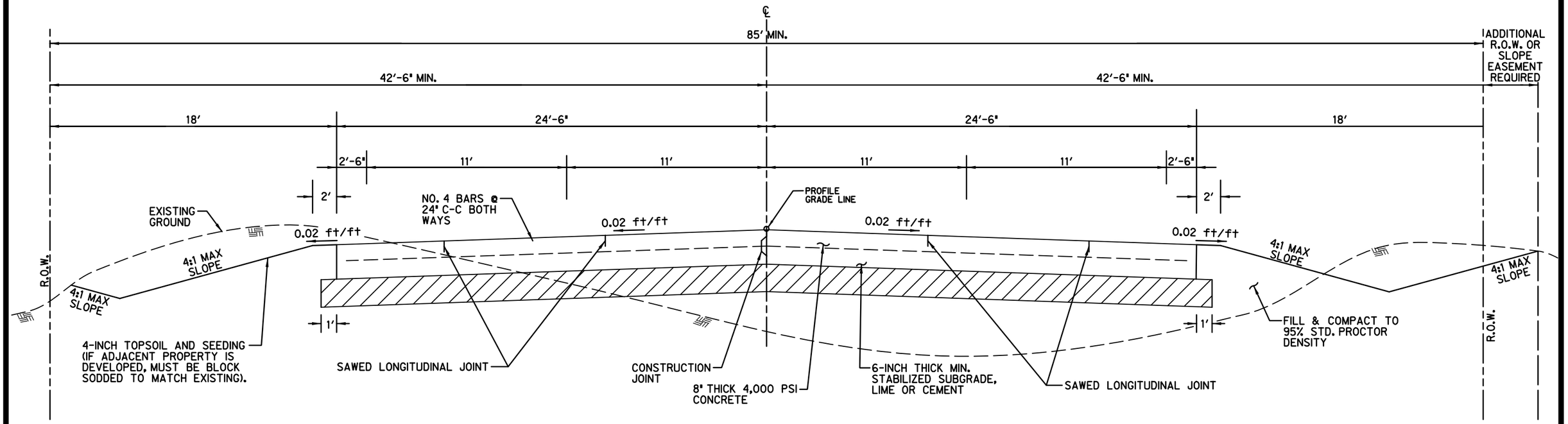

REINFORCED CONCRETE PAVING STANDARDS
UNDIVIDED PRIMARY ARTERIAL - P4U-R

N.T.S.

NOTES:
1. ALL UTILITIES AND SIDEWALKS ARE TO BE PLACED IN A MINIMUM 10' SIDEWALK & UTILITY EASEMENT OUTSIDE OF RIGHT-OF-WAY.
2. SEE SIDEWALL DETAILS FOR SIDEWALK LOCATIONS

CERTIFICATION:

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PAVEMENT DETAILS

UNDIVIDED PRIMARY ARTERIAL - RURAL

TOWN OF HICKORY CREEK
DENTON COUNTY, TEXAS

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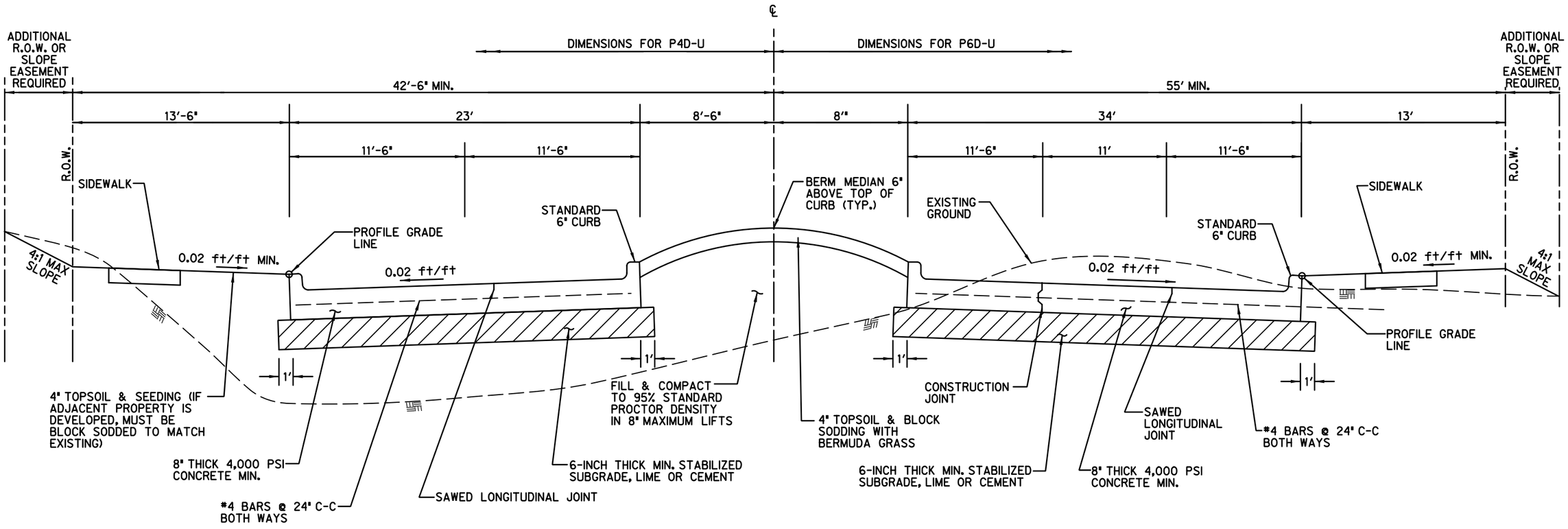

REINFORCED CONCRETE PAVING STANDARDS
DIVIDED ARTERIALS - P4D-U & P6D-U

N.T.S.

NOTE:
1. P4D-U IS SHOWN ON LEFT SIDE OF DRAWING AND P6D-U IS SHOWN ON RIGHT SIDE OF DRAWING.
2. ALL DIMENSIONS TO CURB ARE SHOWN TO THE BACK OF CURB.
3. SEE SIDEWALL DETAILS FOR SIDEWALK LOCATIONS

CERTIFICATION:

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PAVEMENT DETAILS

DIVIDED ARTERIALS - URBAN

TOWN OF HICKORY CREEK
DENTON COUNTY, TEXAS

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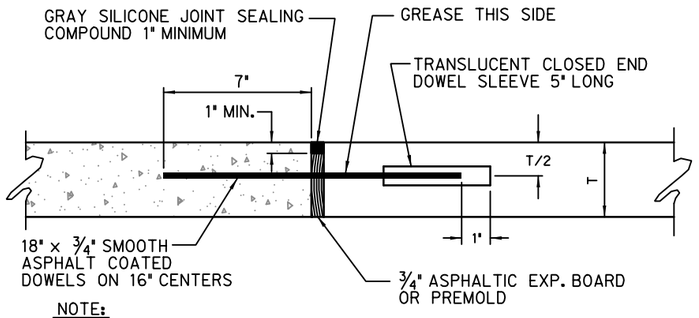
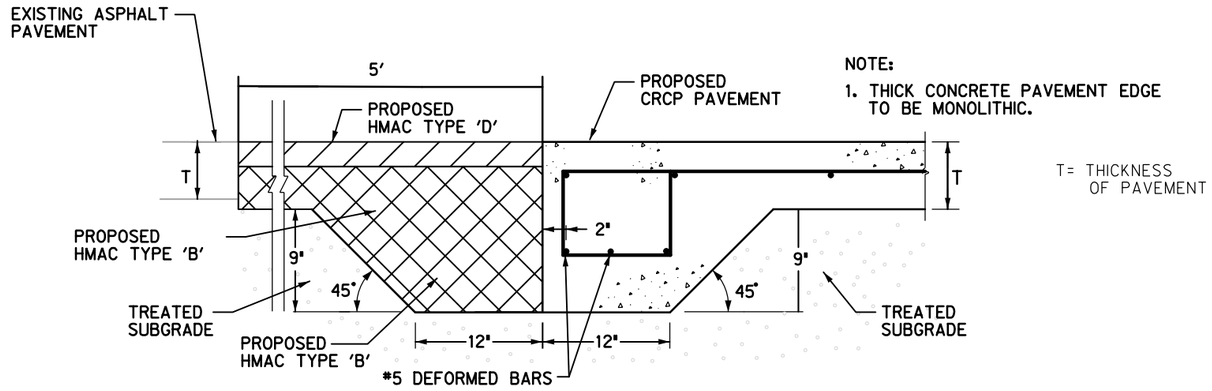


NOTE:

SLEEVES FOR DOWELS SHALL HAVE AN INSIDE DIAMETER OF 1/16" GREATER THAN THE DIAMETER OF THE DOWELS AND SHALL BE APPROVED BY THE ENGINEER PRIOR TO USE. EXPANSION JOINTS TO BE CONSTRUCTED A MAXIMUM OF 300' APART ON STRAIGHT PAVING, AND ON ALL PCs, PTs, END OF RETURN OR OTHERWISE SPECIFIED.

EXPANSION JOINT

NOT TO SCALE



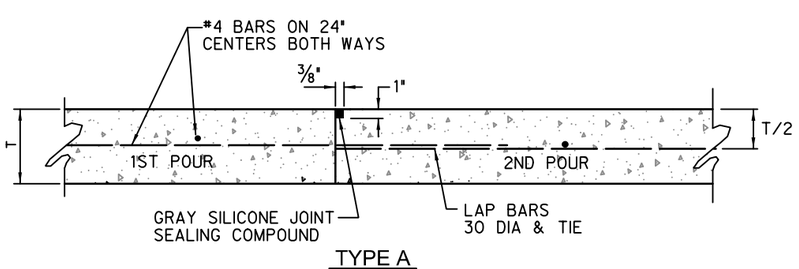
NOTE:

1. THICK CONCRETE PAVEMENT EDGE TO BE MONOLITHIC.

T= THICKNESS OF PAVEMENT

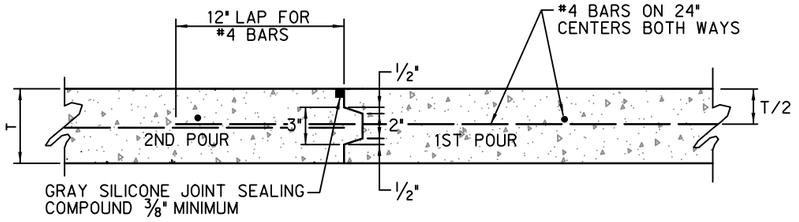
PAVEMENT TERMINUS

NOT TO SCALE



TYPE A

FOR PAVEMENT THICKNESS 6" (OR AS SPECIFIED)

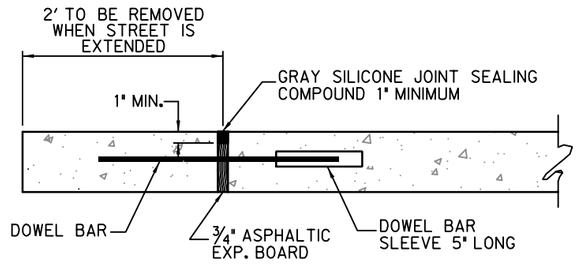


TYPE B

FOR PAVEMENT THICKNESS GREATER THAN 6" (OR AS SPECIFIED)

CONSTRUCTION JOINT

NOT TO SCALE



NOTE: TYPE-A HEADER TO BE USED FOR FUTURE STREET EXTENSION ORWHEN SPECIFIED ON PLANS TO BE USED.

TYPE-B CONCRETE HEADER

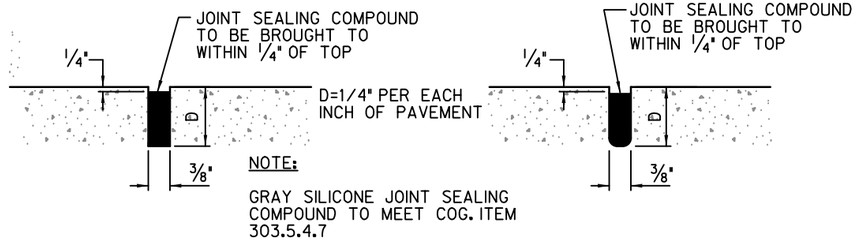
NOT TO SCALE

NOTES:

UNLESS TYPE 'A' OR 'B' HEADERS ARE SPECIFIED, WHEN CONSTRUCTING NEW PAVEMENT, THE CONTRACTOR MUST:

A) EXPOSE THE REINFORCING STEEL FROM THE EXISTING PAVEMENT AND TIE IT TO THE PROPOSED STEEL MAT, OR

B) DOWEL #3 REINFORCING STEEL BARS INTO THE EXISTING PAVEMENT A MINIMUM OF (6) SIX INCHES AT 24" CENTERS AND HAVE A MINIMUM OF 15" LAP.



NOTE:

GRAY SILICONE JOINT SEALING COMPOUND TO MEET COG. ITEM 303.5.4.7

SAWED DUMMY JOINT

NOT TO SCALE

CERTIFICATION:

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PAVEMENT STANDARD DETAILS

CONSTRUCTION JOINT DETAILS

TOWN OF HICKORY CREEK
DENTON COUNTY, TEXAS

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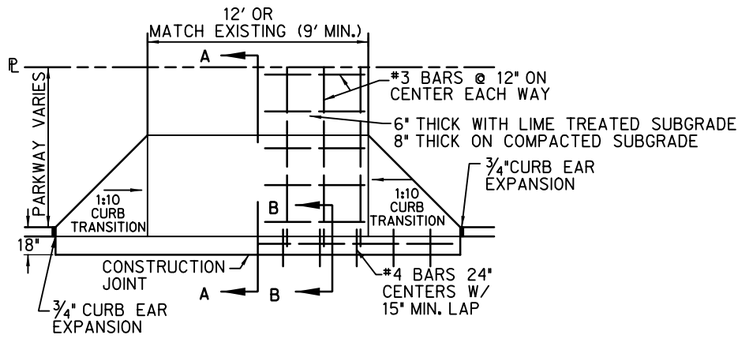
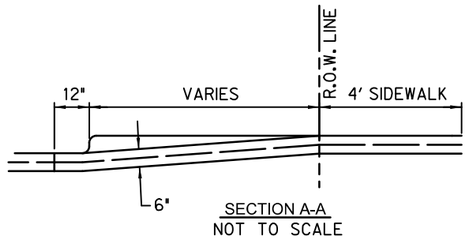
HALFF	HALFF	HALFF	OCT 2012	N.T.S.	P-5	—



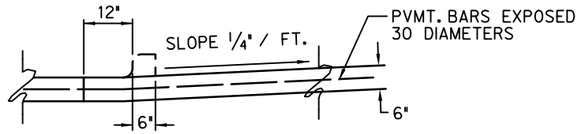
NOTES:

1. DRIVEWAYS SHALL BE 12 FOOT WIDE OR SHALL MATCH EXISTING.(9' WIDE MINIMUM) NEW DRIVES WILL BE CONSTRUCTED TO PROPERTY LINE, IN REPLACING EXISTING DRIVES, THE EXISTING DRIVE WILL BE SAWED AND REMOVED AT A DISTANCE WHICH WILL ASSURE A SMOOTH GRADE, (TO BE SPECIFIED BY THE ENGINEER) AND WILL BE REPLACED TO THAT POINT. GRADE NOT TO EXCEED 1/10 TO THE FOOT RISE.

2. FOR DRIVEWAYS BEING INSTALLED TO EXISTING PAVEMENT, SAWCUT CURB AND DOWEL INTO EXISTING PAVEMENT. SEE DOWEL DETAIL ON THIS SHEET.



SECTION A-A
NOT TO SCALE

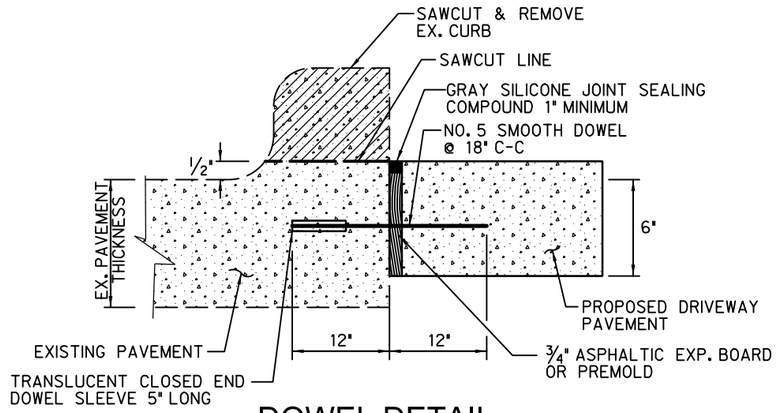


SECTION B-B
NOT TO SCALE

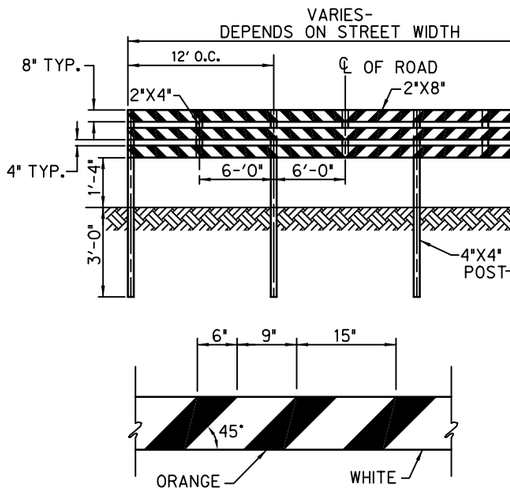
NOTE:

CURB, GUTTER, PAVEMENT, AND VALLEY TO BE POURED MONOLITHIC. THE REINFORCED CONCRETE VALLEY SHALL REPLACE THE CONCRETE PAVING WITH THE SUBGRADE AND BASE TREATMENT REMAINING THE SAME IN ACCORDANCE WITH THE TYPICAL PAVING SECTION. THE CONCRETE VALLEY WILL BE CONSTRUCTED ACCORDING TO THE TOWN OF HICKORY CREEK PAVING STANDARDS.

DRIVEWAY DETAIL
NOT TO SCALE



DOWEL DETAIL
NOT TO SCALE



NOTES:

1. REFLECTIVE SHEETING FOR ALL TRAFFIC CONTROL DEVICES SHALL BE OF HIGH SPECIFIC INTENSITY (TYPE IIIA OR IIIB). ALL CHANNELIZATION DEVICES SHALL USE TYPE IIIA REBOUNDABLE SHEETING.

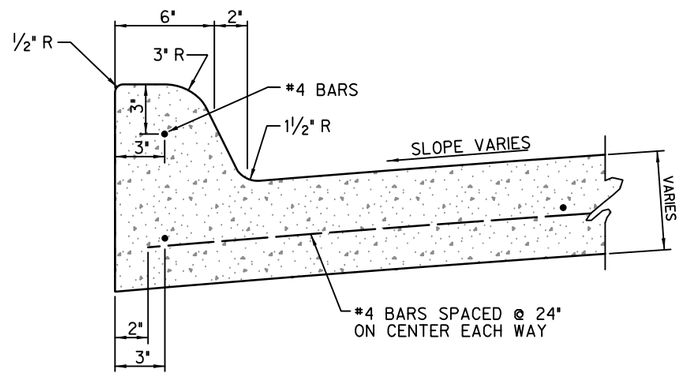
2. ATTACH 2"X 8" BOARDS TO 4"X 4" POST WITH LAG BOLTS.

3. ATTACH 2"X 4" BRACES TO 2"X 8" BOARDS WITH 10d-NAILS.

4. BARRICADE TO BE FULL WIDTH OF STREET BACK OF CURB TO BACK OF CURB.

5. IF BARRICADE IS USED TO DENOTE END OF ROADWAY, DIAGONAL STRIPES USED SHALL BE RED AND WHITE.

END OF ROAD BARRICADE DETAIL
NOT TO SCALE



6" MONOLITHIC CONCRETE CURB
NOT TO SCALE

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PAVEMENT STANDARD DETAILS

DRIVEWAYS, CURBS, AND MISCELLANEOUS PAVEMENT DETAILS

TOWN OF HICKORY CREEK
DENTON COUNTY, TEXAS

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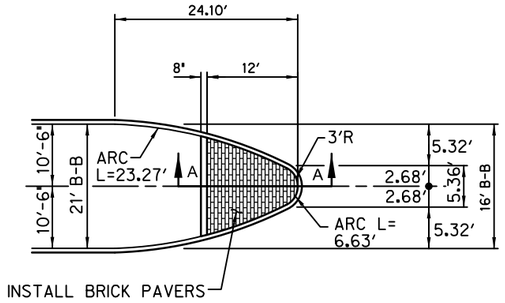
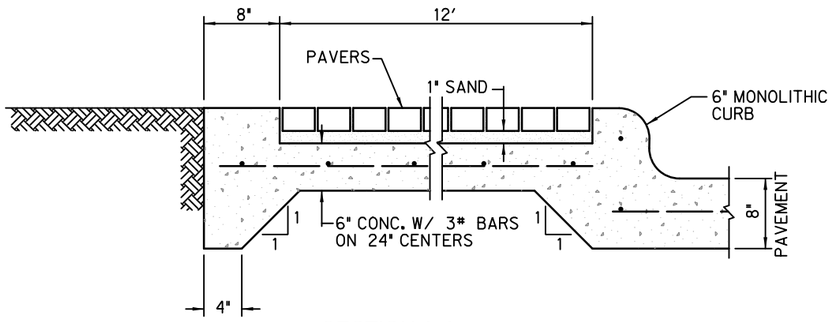


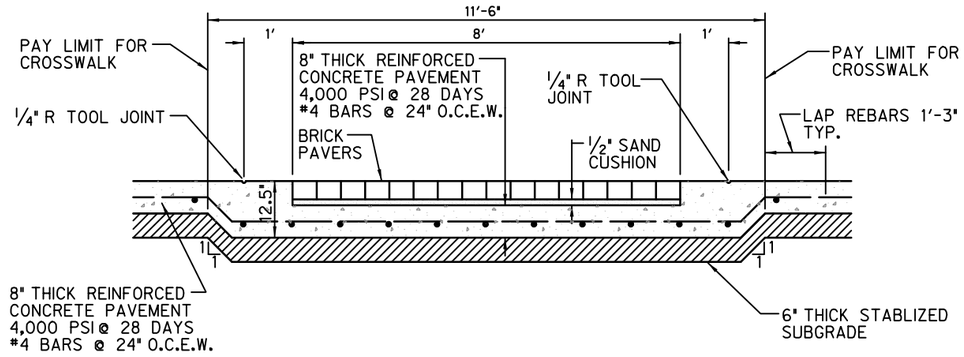
MEDIAN NOSE DETAIL

NOT TO SCALE



SECTION A-A

NOT TO SCALE



BRICK PAVER CROSS WALK

NOT TO SCALE

CERTIFICATION:

THIS TOWN OF HICKORY CREEK STANDARD DETAIL SHEET IS AUTHORIZED FOR USE IN THIS PROJECT BY THE ENGINEER WHOSE SEAL APPEARS ON THIS SHEET. MODIFICATIONS TO THE STANDARD DETAILS SHALL BE NOTED ON THIS SHEET AND SHALL COMPLY WITH THE TOWN'S ORDINANCES, STATE, AND FEDERAL REGULATIONS.

PAVEMENT STANDARD DETAILS

BRICK PAVERS FOR MEDIAN NOSE AND CROSS WALKS

TOWN OF HICKORY CREEK
DENTON COUNTY, TEXAS

DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
HALFF	HALFF	HALFF	OCT 2012	N.T.S.	P-7	___

SIDEWALK AND HANDICAP / CURB RAMP NOTES:

GENERAL REQUIREMENTS;
REQUIREMENTS AND SPECIFICATIONS OF THE TEXAS ACCESSABILITY STANDARDS AND THE AMERICAN DISABILITIES ACT.

ALL SLOPES ARE MAXIMUM ALLOWABLE. THE LEAST POSSIBLE SLOPE THAT WILL DRAIN PROPOERLY SHOULD BE USED. ADJUST CURB RAMP LENTH OR GRADE OF APPROACH SIDEWALKS AS DIRECTED.

SIDEWALK WIDTH;
THE MINIMUM WIDTH OF ALL SIDEWALKS SHALL BE 4 FEET, ALONG FRONTAGE WITH RESIDENTIAL PROPERTIES AND 5 FEET ALONG COMMERCIAL FRONTAGE, AND TO BE CONSTRUCTED AS PER FIGURE 1: "SIDEWALK LOCATION DETAIL" ON THIS SHEET & SHEET 2 OF 3.

A 5'X5' LANDING SHALL BE REQUIRED EVERY 200 FEET FOR SIDEWALKS LESS THAN 5' IN WIDTH.

MINIMUM 6-FOOT SIDEWALK IS REQUIRED ADJACENT TO THE CURB, WITH THE APPROVAL OF THE TRAFFIC ENGINEER.

CURB RAMP LOCATION;
CURB RAMPS UNDER THESE PROVISIONS, SHALL BE WHEREVER AN ACCESSIBLE ROUTE CROSSES A CURB.

SLOPE;
MAXIMUM ALLOWABLE CROSS SLOPE ON SIDEWALK AND CURB RAMP SURFACES IS 2%.

SLOPES ON CURB RAMPS SHALL BE AS FOLLOWS:

A. THE SLOPE SHALL BE MEASURED AS SHOWN IN FIGURE 3.

B. TRANSITIONS FROM RAMPS TO WALKS, GUTTERS, OR STREETS SHALL BE FLUSH AND FREE OF ABRUPT CHANGES.

C. MAXIMUM SLOPES OF ADJOINING GUTTERS, ROAD SURFACE IMMEDIATELY ADJACENT TO THE CURB RAMP, OR ACCESSIBLE ROUTE SHALL NOT EXCEED 1:50

D. THE LEAST POSSIBLE SLOPE SHALL BE USED FOR ANY RAMP. THE MAXIMUM SLOPE OF A RAMP IN NEW CONSTRUCTION SHALL BE 1:12. THE MAXIMUM RISE FOR ANY RUN SHALL BE 30-INCHES. ANY RUN LONGER THAT 6' AT 1:12 WILL REQUIRE RAILING. CURB RAMPS AND RAMPS TO BE CONSTRUCTED ON EXISTING SITES OR IN EXISTING BUILDINGS OR FACILITIES MAY HAVE SLOPES AND RISES IF SPACE LIMITATIONS PROHIBIT THE USE OF A 1:12 SLOPE OR LESS, AS FOLLOWS:
   1.) A SLOPE BETWEEN 1:10 AND 1:12 IS ALLOWED FOR A MAXIMUM RISE OF 6-INCHES.
   2.) A SLOPE BETWEEN 1:8 AND 1:10 IS ALLOWED FOR A MAXIMUM OF 3-INCHES A SLOPE STEEPER THAN 1:8 IS NOT ALLOWED.

E. LANDINGS SHALL BE 5'X 5' MINIMUM WITH A MAXIMUM 2% SLOPE IN ANY DIRECTION

F. MANEUVERING SPACE AT THE BOTTOM OF CURB RAMPS SHALL BE MINIMUM OF 4'X4' WHOLLY CONTAINED WITHIN THE CROSSWALK AND WHOLLY OUTSIDE THE PARALLEL VEHICULAR TRAVEL PATH.

RAMP WIDTH;
THE MINIMUM WIDTH OF A CURB RAMP SHALL BE 36 INCHES EXCLUSIVE OF FLARED SIDES.

SURFACE;
SURFACES OF CURB RAMPS, ALONG ACCESSIBLE ROUTES AND IN ACCESSIBLE ROOMS AND SPACES INCLUDING FLOORS, WALKS, RAMPS, STAIRS, AND CURB RAMPS, SHALL BE STABLE, FIRM , AND SLIP RESISTANT.

SIDES OF CURB RAMPS;
IF A CURB RAMP IS LOCATED WHERE PEDESTRIANS MUST WALK ACROSS THE RAMP, OR WHERE IT IS NOT PROTECTED BY HANDRAILS OR GUARDRAILS, IT SHALL HAVE FLARED SIDES.

THE MAXIMUM SLOPE OF THE FLARE SHALL BE 1:10 (SEE FIGURE 4 (A)) CURB RAMPS WITH RETURNED CURBS MAY BE USED WHERE PEDESTRIANS WOULD NOT WALK ACROSS THE RAMP (SEE FIGURE 4 (B)) PROVIDE 1/8-INCH TOOLED 1/4-INCH TO 3/4-INCH WIDE GROOVES AT 2-INCH CENTERS.

BUILT-UP RAMPS;
BUILT-UP CURB RAMPS SHALL BE LOCATED SO THEY DO NO PROJECT INTO VEHICULAR TRAFFICE LANES. PROVIDE 1/8-INCH TOOLED 1/4-INCH TO 3/4-INCH WIDE GROOVES AT 2-INCH CENTERS.

OBSTRUCTIONS;
CURB RAMPS SHALL BE LOCATED OR PROTECTED TO PREVENT THEIR OBSTRUCTION BY PARKED VEHICLES.

LOCATION AT MARKED CROSSINGS;
CURB RAMPS AT MARKED CROSSINGS SHALL BE WHOLLY CONTAINED WITHIN THE MARKINGS, EXCLUDING ANY FLARED SIDES (SEE FIGURE 2).

DIAGONAL CURB RAMPS;
IF DIAGONAL (OR CORNER TYPE) CURB RAMPS HAVE RETURNED CURBS OR OTHER WELL DEFINED EDGES, SUCH EDGES SHALL BE PARALLEL TO THE DIRECTION OF PEDESTIRAN FLOW. THE BOTTOM OF THE DIAGONAL CURB RAMPS SHALL HAVE 48-INCHES MINIMUM. IF DIAGONAL CURB RAMPS ARE PROVIDED AT MARKED CROSSINGS. THE 48-INCH CLEAR SPACE SHALL BE WITHIN THE MARKINGS (SEE FIGURE 2 (C) AND (D)). IF DIAGONAL CURB RAMPS HAVE FLARED SIDES, THEY SHALL ALSO HAVE AT LEAST A 24-INCH LONG SEGMENT OF STRAIGHT CURB LOCATED ON EACH SIDE OF THE CURB RAMPS AND WTHIN THE MARKED CROSSING (SEE FIGURE 2 (C)) ISLANDS.

ANY RAISED ISLANDS IN CROSSINGS SHALL BE CUT THROUGH LEVEL WITH THE STREET OR HAVE CURB RAMPS AT BOTH SIDES AND A LEVEL AREA AT LEAST 48-INCHES LONG BETWEEN THE CURB RAMPS IN THE PART OF THE ISLAND INTERSECTED BY THE CROSSINGS (SEE FIGURE 2 (A) AND (B)).

JOINTING;
SEPARATE CURB RAMP AND LANDINGS FROM ADJACENT SIDEWALK AND ANY OTHER ELEMENTS WITH PREMOLD OR BOARD JOINT OF 3/4" UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

CONSTRUCTION;

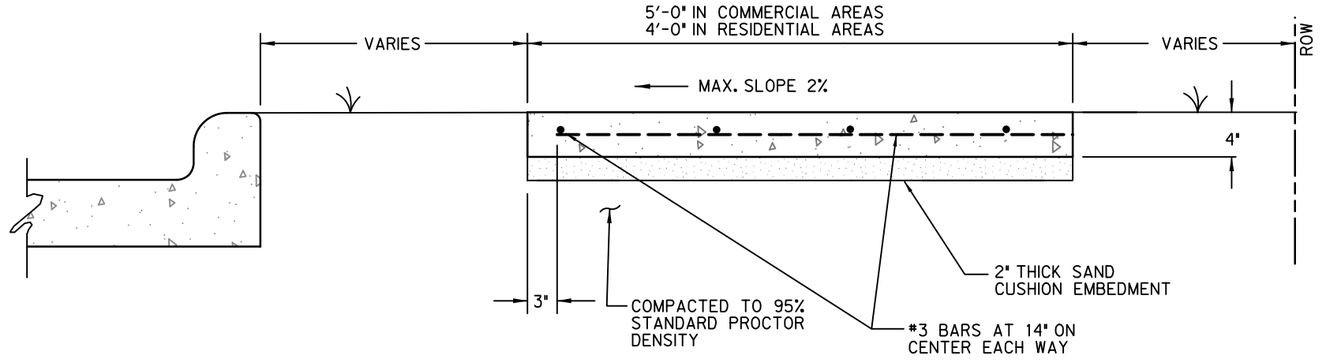
A. THE CONTRACTOR SHALL SAWCUT, REMOVE AND DISPOSE OFF-SITE THE REQUIRED EXISTING CONCRETE SIDEWALK, AND CURB AND GUTTER, TO CONSTRUCT THE PROPOSED RAMPS.

B. CONCRETE SIDEWALKS AND RAMPS SHALL BE MINIMUM 4-INCH THICK, 3,600 PSI, 5 SACK CONCRETE, REINFORCED WITH #3 BARS AT 14-INCH CENTERS BOTHWAYS, PLACED OVER A 2-INCH THICK SAND CUSHION EMBEDMENT.

C. THE CONTRACTOR SHALL USE 1-INCH PREMOLDED EXPANSION JOINT MATERIAL BETWEEN THE PROPOSED SIDEWALKS AND RAMPS AT THE BACK OF CURBS, AND AT JOINTS AT NO EXTRA PAY.

D. DUMMY JOINT REQUIRED EVERY 4-FEET IN 4-FOOT WIDE SIDEWALKS AND EVERY 5-FEET IN 6-FOOT WIDE SIDEWALK.

PAYMENT;
CURB RAMPS AND LANDINGS SHALL BE CONSTRUCTED AND PAID FOR IN ACCORDANCE WITH NCTCOG ITEM 305.2.



(A)
OPTION 1
SIDEWALK LOCATION DETAIL
N.T.S.

FIGURE 1

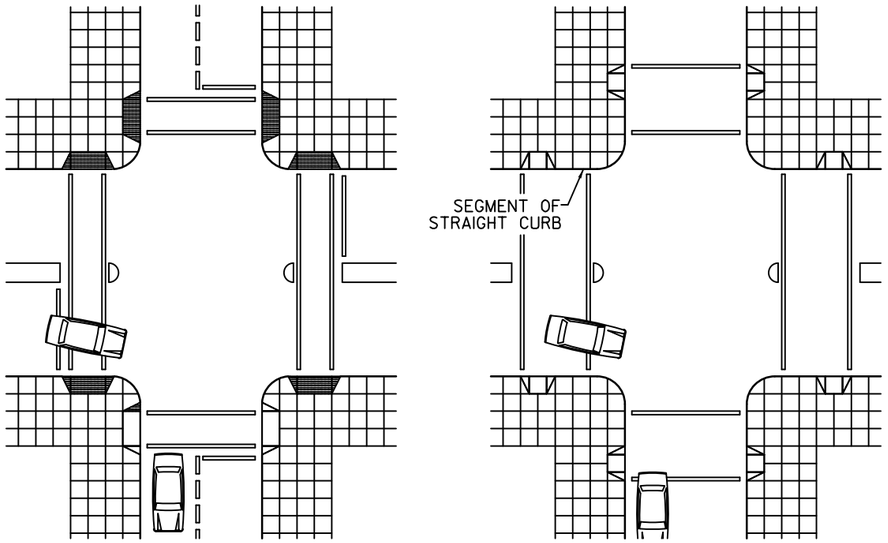
CERTIFICATION;
THIS TOWN OF HICKORY CREEK STANDARD DETAIL SHEET IS AUTHORIZED FOR USE IN THIS PROJECT BY THE ENGINEER WHOSE SEAL APPEARS ON THIS SHEET. MODIFICATIONS TO THE STANDARD DETAILS SHALL BE NOTED ON THIS SHEET AND SHALL COMPLY WITH THE TOWN'S ORDINANCES, STATE, AND FEDERAL REGULATIONS.

PAVEMENT STANDARD DETAILS

SIDEWALK DETAILS
(SHEET 1 OF 3)

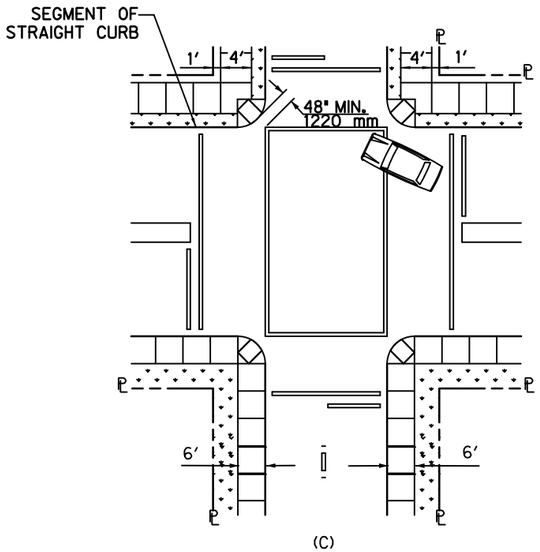
TOWN OF HICKORY CREEK
DENTON COUNTY, TEXAS

DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
HALFF	HALFF	HALFF	OCT 2012	N.T.S.	P-8	

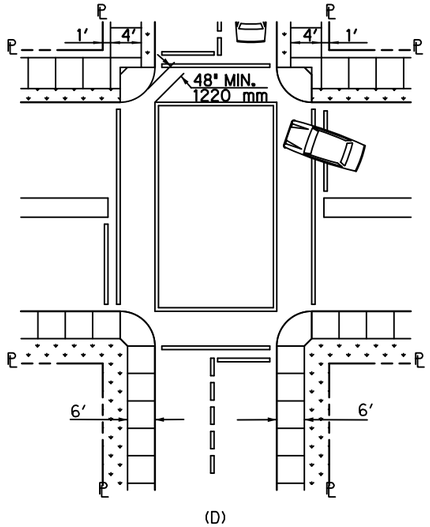


(A)

(B)

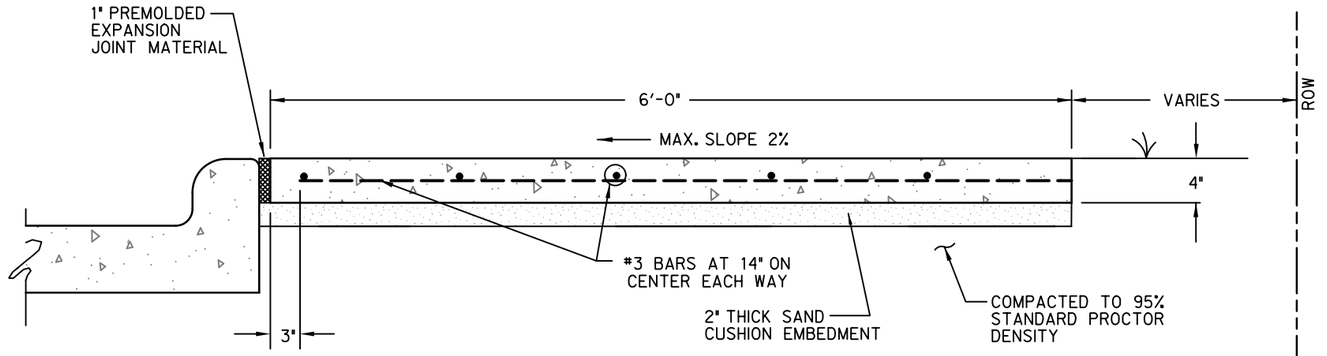


(C)

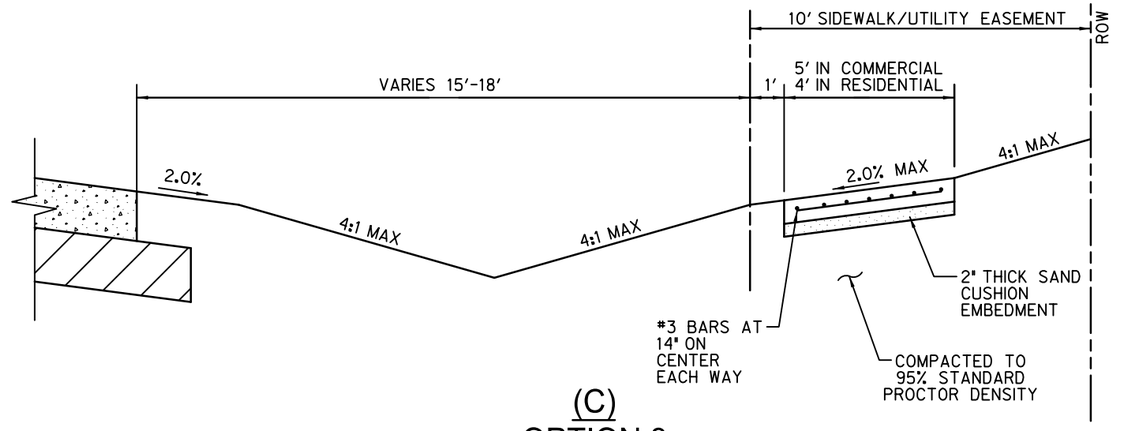


(D)

FIGURE 2
CURB RAMPS AT MARKED CROSSINGS
N.T.S.



(B)
OPTION 2
SIDEWALK LOCATION DETAIL
N.T.S.



(C)
OPTION 3
SIDEWALK LOCATION DETAIL
N.T.S.

FIGURE 1

CERTIFICATION:
THIS TOWN OF HICKORY CREEK STANDARD DETAIL SHEET IS AUTHORIZED FOR USE IN THIS PROJECT BY THE ENGINEER WHOSE SEAL APPEARS ON THIS SHEET. MODIFICATIONS TO THE STANDARD DETAILS SHALL BE NOTED ON THIS SHEET AND SHALL COMPLY WITH THE TOWN'S ORDINANCES, STATE, AND FEDERAL REGULATIONS.

PAVEMENT STANDARD DETAILS

SIDEWALK DETAILS
(SHEET 2 OF 3)

TOWN OF HICKORY CREEK
DENTON COUNTY, TEXAS

DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
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V:H = VERTICAL : HORIZONTAL

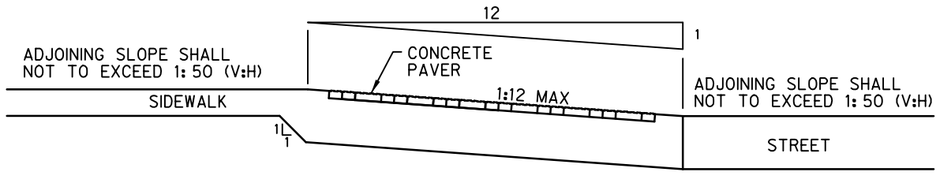
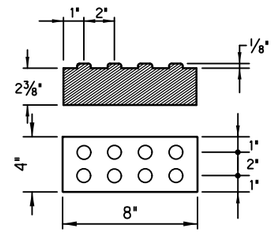


FIGURE 3
MEASUREMENT OF CURB RAMP SLOPES

N.T.S.

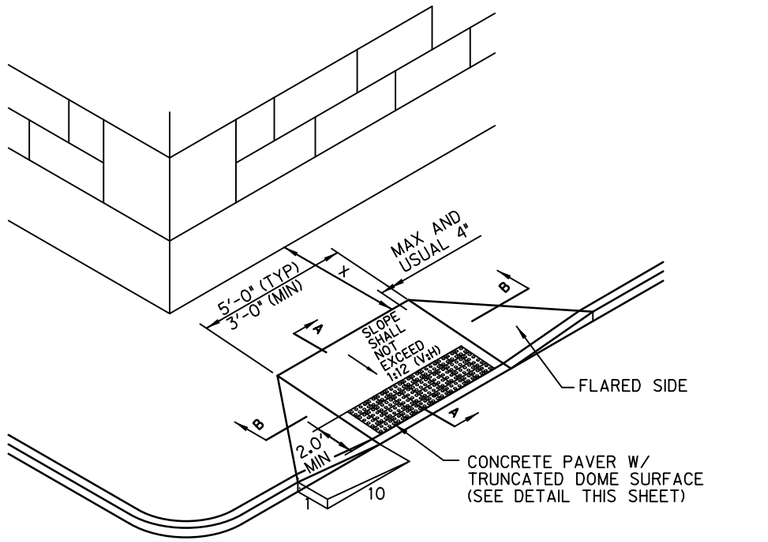


CONCRETE PAVER WITH TRUNCATED DOME SURFACE DETAIL

N.T.S.

CONCRETE PAVER NOTES:

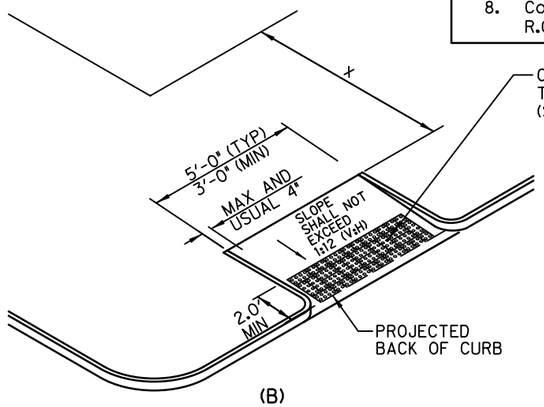
1. Concrete paver units shall meet all requirements of ASTM C-936, C-33, and shall be laid in a two by two unit basket weave pattern, unless shown otherwise in the plans.
2. Domes shall be aligned in the direction of pedestrian travel.
3. Concrete paver units shall have a truncated dome top surface for detectable warning to pedestrians.
4. Concrete paver unit color for the ramp shall be a contrasting color (red) that provides a light reflective value that significantly contrasts with the adjacent surfaces. Use red pigment in concrete at ramp. The red pigment shall be Patterned Concrete Industries, Inc. A-27 dark red. All pigment used on the project must be the same for the entire project.
5. Concrete paver units shall be saw cut only and any cut unit shall not be less than 25 percent of a full unit.
6. Other applications of trunacted domes may be accepted for use as approved by Town of Hickory Creek.
7. Landings shall be provided at top and bottom of each curb ramp. Landings shall be 5'X 5' min. with a max. 2% cross slope in any direction.
8. Concrete pavers shall be installed the full length of ramp, except when located in public R.O.W. where it shall be a minimum of 2' wide.



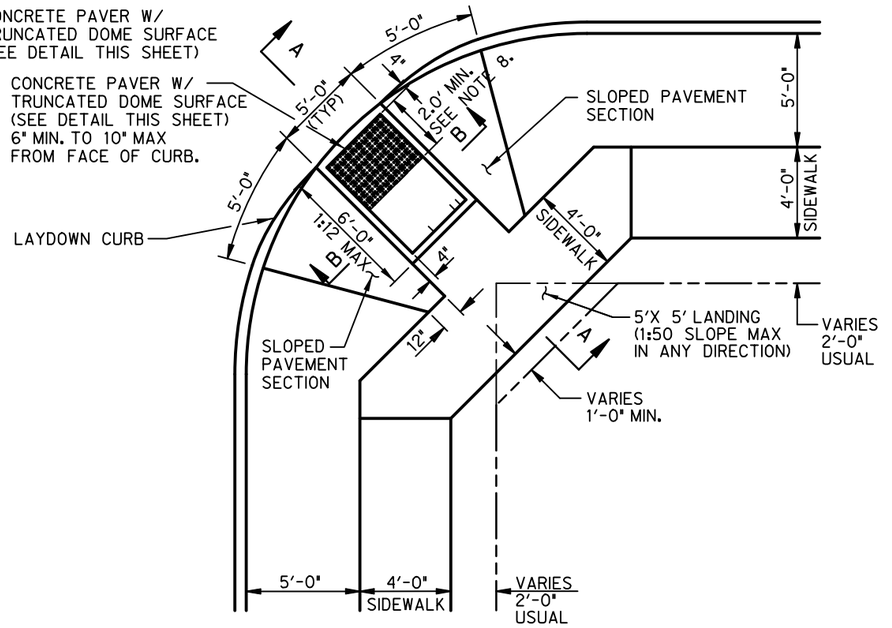
(A)
FLARED SIDES

IF "X" IS LESS THAN 48" THEN THE SLOPE OF THE FLARED SIDE SHALL NOT EXCEED 1:12.

* T = PAVEMENT THICKNESS.

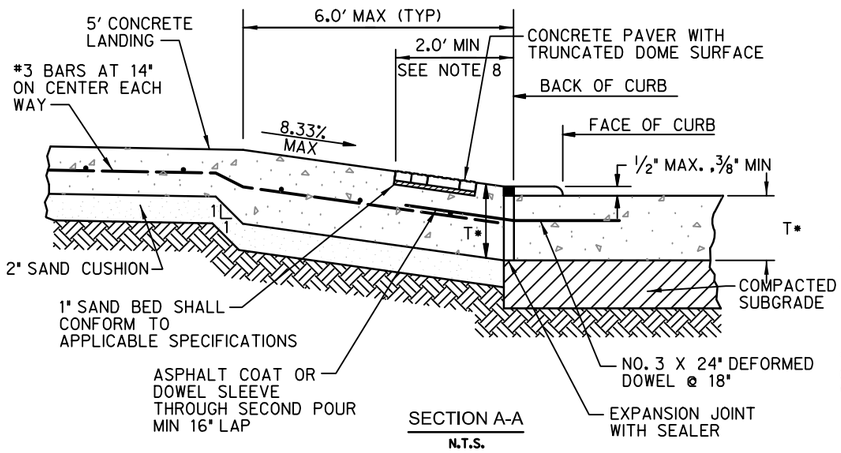


(B)
RETURNED CURB

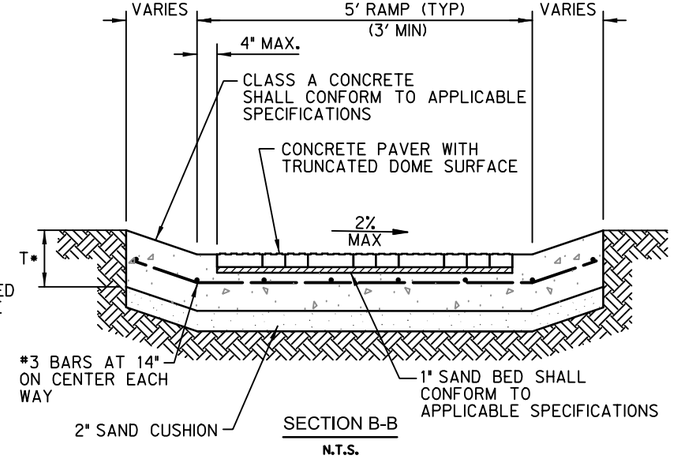


(C)
AT INTERSECTION WITH R.O.W. CLIP

FIGURE 4
SIDES OF CURB RAMP



SECTION A-A
N.T.S.



SECTION B-B
N.T.S.

CERTIFICATION:

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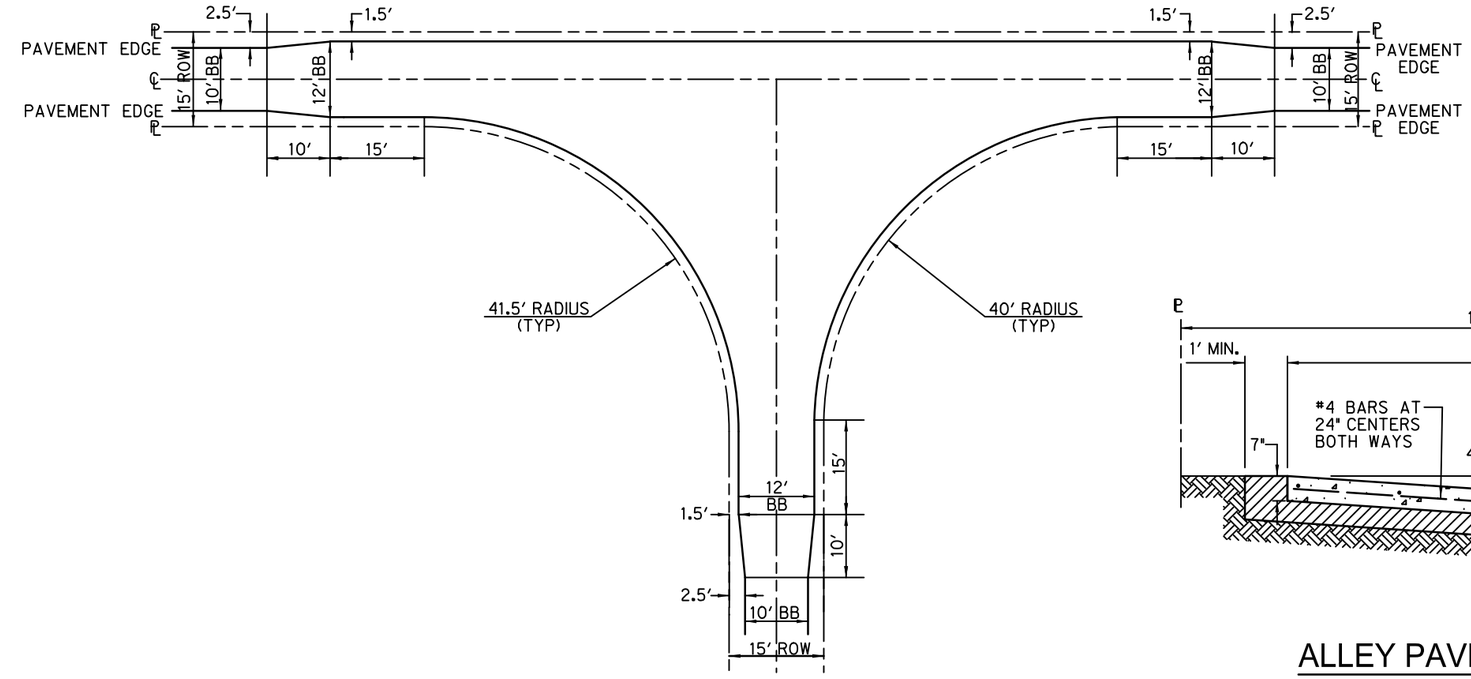
PAVEMENT STANDARD DETAILS

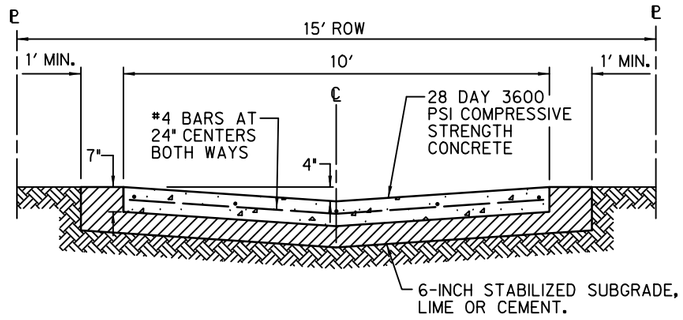
SIDEWALK DETAILS
(SHEET 3 OF 3)

TOWN OF HICKORY CREEK
DENTON COUNTY, TEXAS

DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
HALFF	HALFF	HALFF	OCT 2012	N.T.S.	P-10	

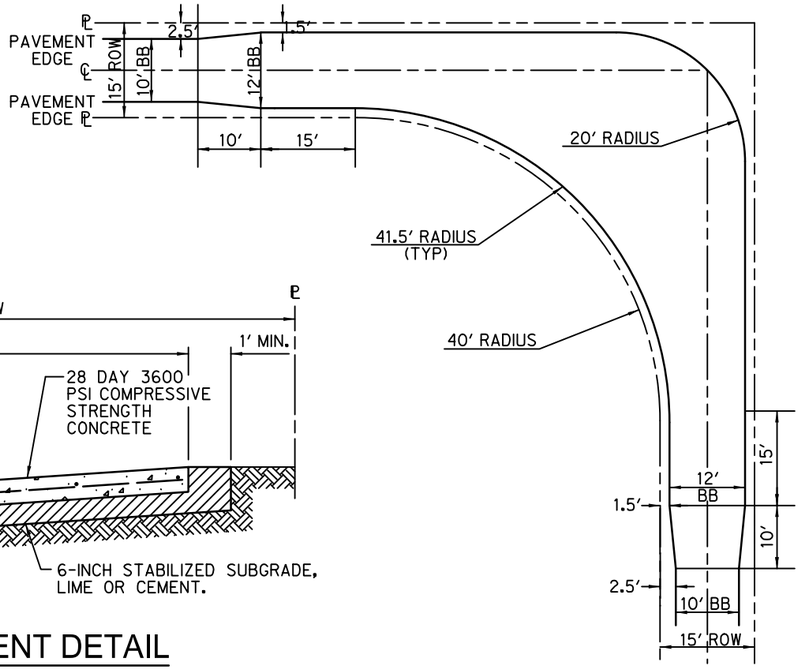


ALLEY INTERSECTION TYPE "A"



ALLEY PAVEMENT DETAIL

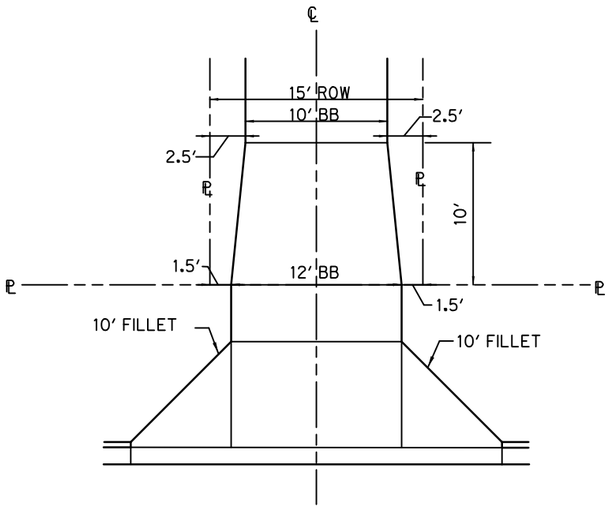
NOTE: SAME INVERT ON 12′ WIDTH ALLEY PAVEMENT



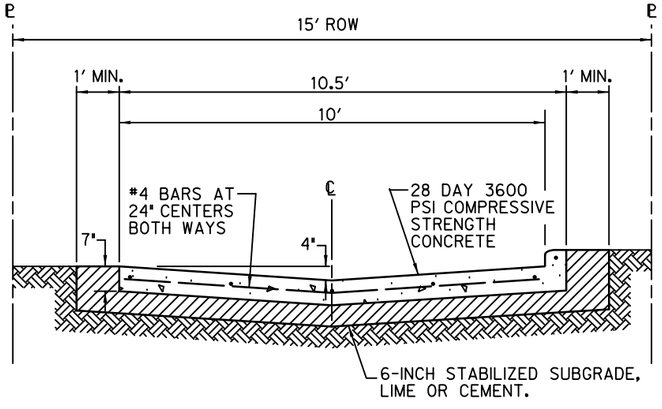
ALLEY INTERSECTION TYPE "B"

NOTE:

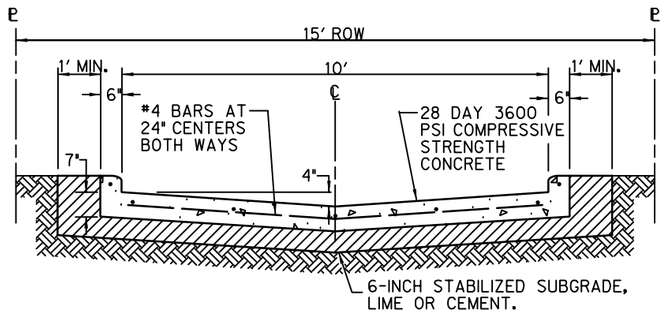
1. UPON APPROVAL FROM THE TOWN, ALLEY SHALL ONLY BE CONSTRUCTED IN COMMERCIAL AREAS.



ALLEY ENTRANCE PLAN



ALLEY PAVEMENT DETAIL WITH CURB



CURBED ALLEY SECTION

CERTIFICATION:

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PAVEMENT STANDARD DETAILS

ALLEY DETAILS

TOWN OF HICKORY CREEK
DENTON COUNTY, TEXAS

DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
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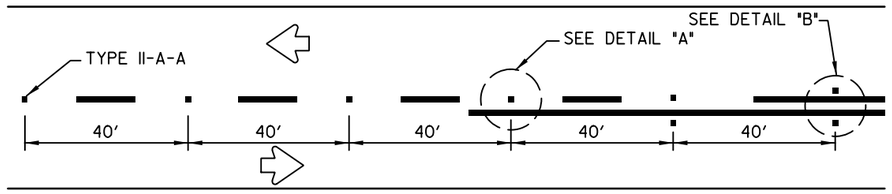
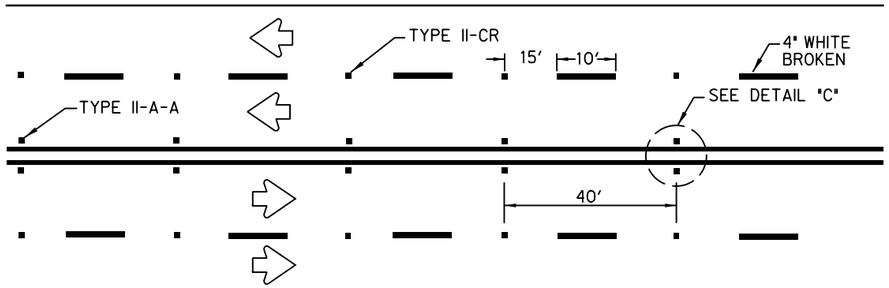
REFLECTIVE RAISED PAVEMENT MARKERS
FOR VEHICLE POSITIONING GUIDANCE

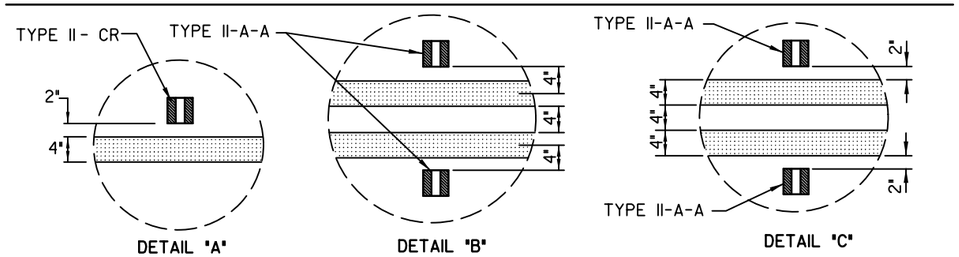


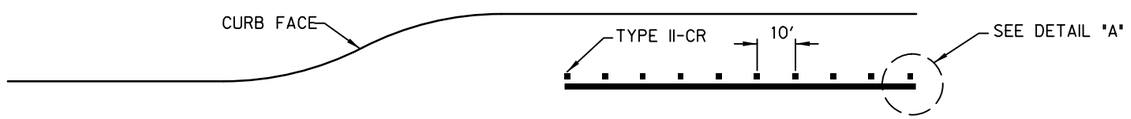
CENTERLINE FOR ALL TWO LANE ROADWAYS



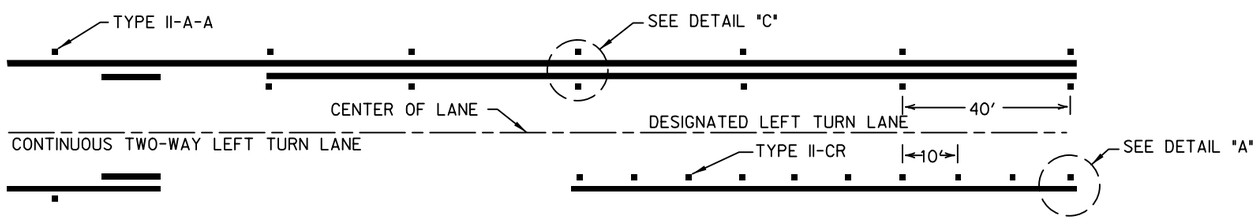
CENTERLINE & LANE LINES
FOR FOUR LANE TWO-WAY HIGHWAYS

Raised pavement marker TYPE II-CR, clear/red face toward normal traffic, shall be placed on 40-foot centers.



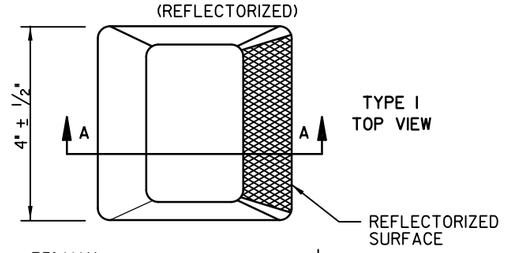


LANE LINES FOR DESIGNATED TURN LANES

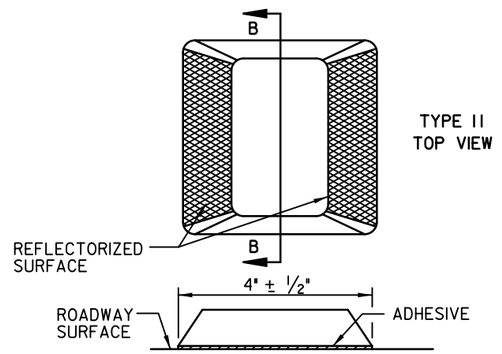


LANE LINES FOR DESIGNATED TURN LANES IN A SHARED TWO-WAY TURN LANE

RAISED PAVEMENT MARKERS
(REFLECTORIZED)



SECTION A



SECTION B

GENERAL NOTES:

All raised pavement markers placed in broken lines shall be placed in line with and midway between the stripes.

On concrete pavements the raised pavement markers should be placed to the same side of the longitudinal joints as the lane line.

All pavement markers installed on concrete shall be installed using Epoxy adhesive.

All pavement markers installed on asphalt shall be installed using Bituminous adhesive.

All pavement marking materials shall meet the Texas Department of Transportation Material Specifications as specified by the plans.

SPECIFICATION REFERENCE TABLE - MATERIAL SPECIFICATIONS

PAVEMENT MARKERS (REFLECT.)	DMS-4200
EPOXY	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130

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PAVEMENT MARKING STANDARD DETAILS

TURN LANE AND TRANSVERSE MARKINGS

TOWN OF HICKORY CREEK
DENTON COUNTY, TEXAS

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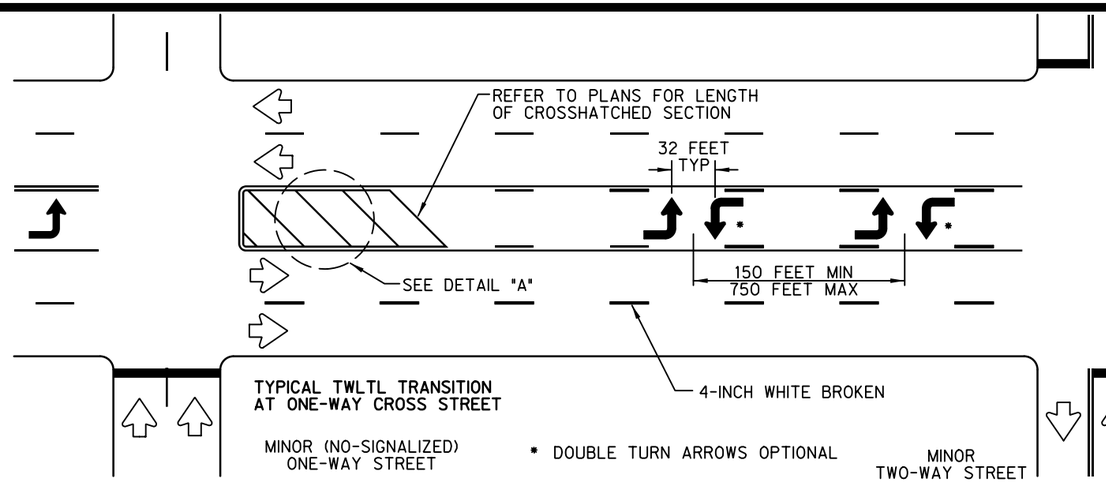
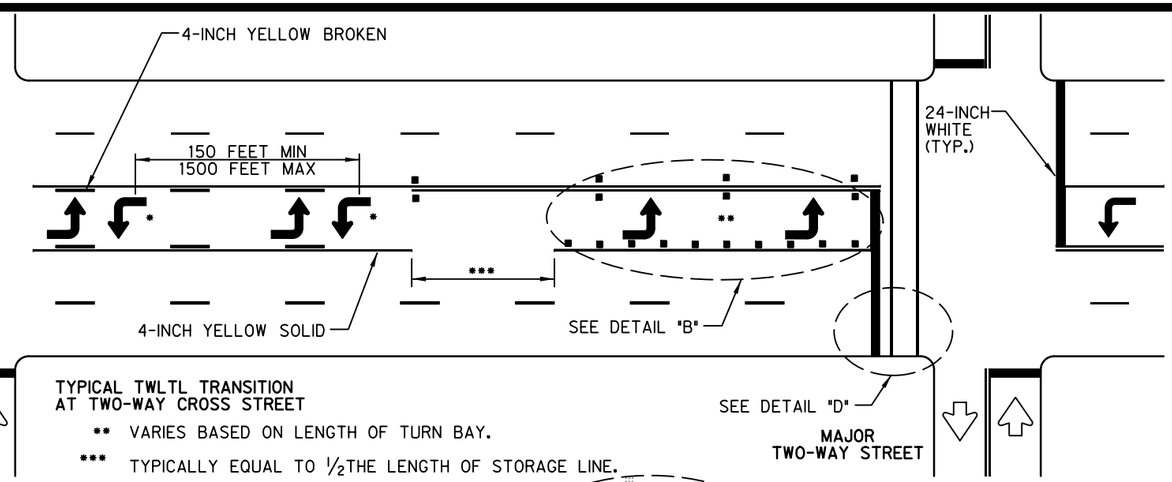
HALFF	HALFF	HALFF	OCT 2012	N.T.S.	P-12	



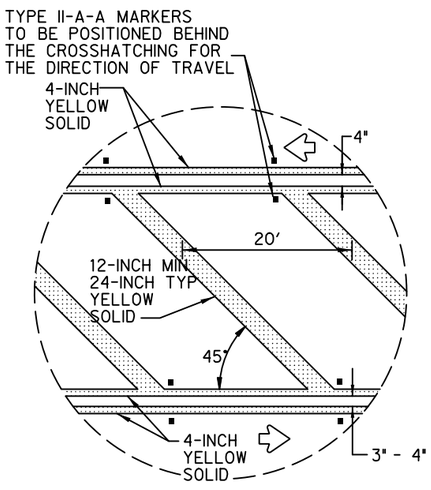
TYPICAL TWLTL TRANSITION AT ONE-WAY CROSS STREET



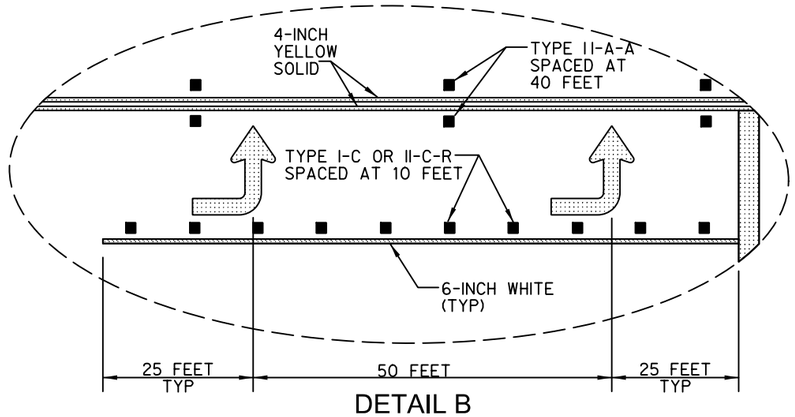
TYPICAL TWLTL TRANSITION AT TWO-WAY CROSS STREET

** VARIES BASED ON LENGTH OF TURN BAY.

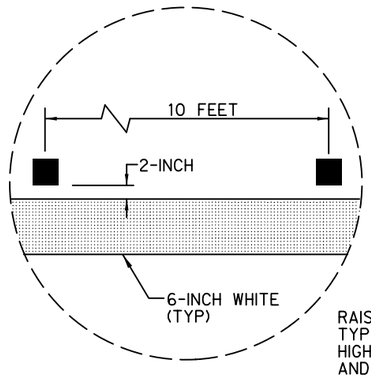
*** TYPICALLY EQUAL TO ½ THE LENGTH OF STORAGE LINE.



DETAIL A

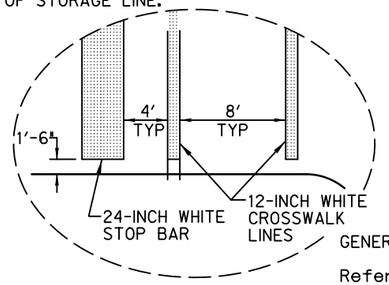


DETAIL B



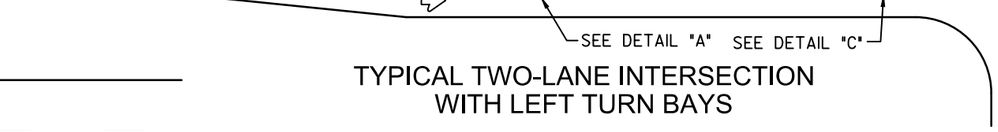
DETAIL C

RAISED PAVEMENT MARKER TYPE I-C WITH UNDIVIDED HIGHWAYS, FLUSH MEDIANS AND TWO WAY LEFT TURN LANES.
RAISED PAVEMENT MARKER TYPE II-C-R WITH DIVIDED HIGHWAYS AND RAISED MEDIANS.

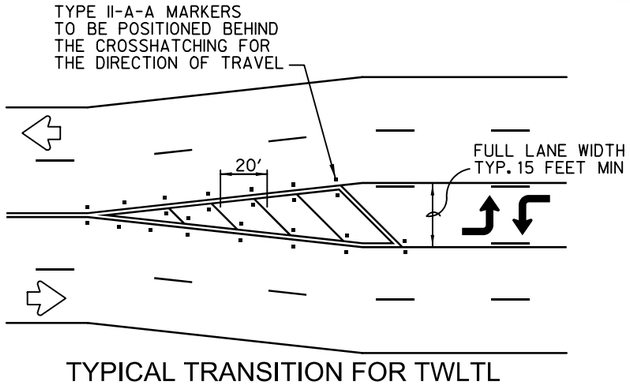


DETAIL D

FINAL PLACEMENT OF STOP BAR AND CROSSWALK SHALL BE APPROVED BY THE ENGINEER IN THE FIELD.



TYPICAL TWO-LANE INTERSECTION WITH LEFT TURN BAYS



TYPICAL TRANSITION FOR TWLTL AND DIVIDED HIGHWAY

GENERAL NOTES

Refer elsewhere in plans for additional RPM placement and details. Details for words and arrows as shown on other sheets.

All pavement marking materials shall meet the Texas Department of Transportation Material Specifications as specified by the plans.

For a left turn bay less than 100 feet in length two arrows shall be used.

For a left turn bay greater than 100 feet in length three arrows shall be used. Spacing to be determined by Engineer.

Other crosswalk patterns as shown in the "Texas Manual on Uniform Traffic Control Devices" may be used.

SPECIFICATION REFERENCE TABLE -MATERIAL SPECIFICATIONS

PAVEMENT MARKERS (REFLECT.)	DMS-4200
EPOXY	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130

CERTIFICATION:

THIS TOWN OF HICKORY CREEK STANDARD DETAIL SHEET IS AUTHORIZED FOR USE IN THIS PROJECT BY THE ENGINEER WHOSE SEAL APPEARS ON THIS SHEET. MODIFICATIONS TO THE STANDARD DETAILS SHALL BE NOTED ON THIS SHEET AND SHALL COMPLY WITH THE TOWN'S ORDINANCES, STATE, AND FEDERAL REGULATIONS.

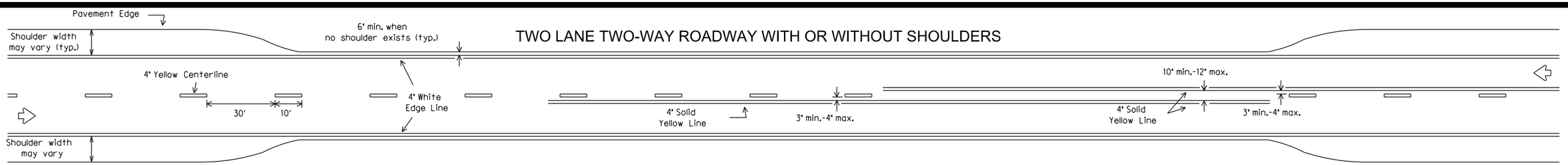
PAVEMENT MARKING STANDARD DETAILS

TWO-WAY LEFT TURN LANES AND LEFT TURN BAYS

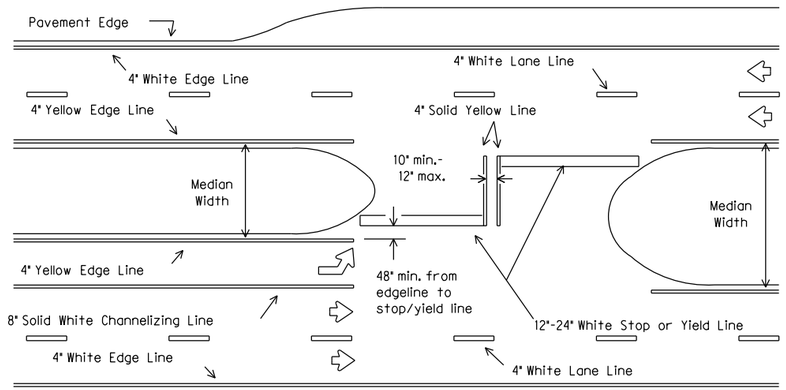
TOWN OF HICKORY CREEK
DENTON COUNTY, TEXAS

DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
HALFF	HALFF	HALFF	OCT 2012	N.T.S.	P-13	—

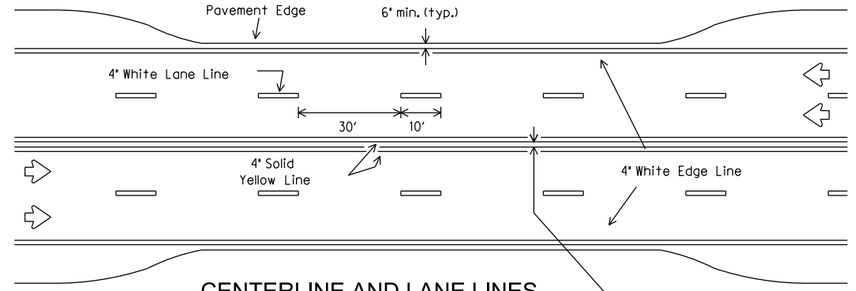
TWO LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS



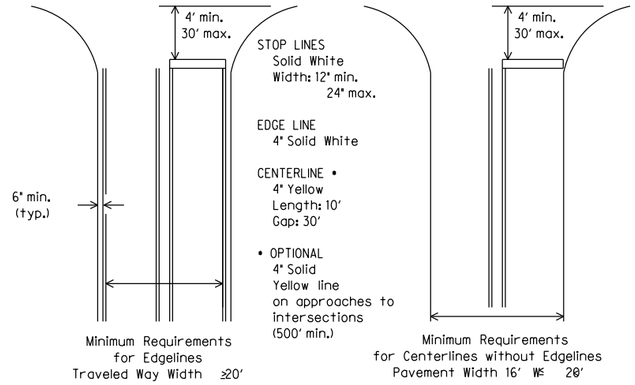
FOUR LANE DIVIDED ROADWAY INTERSECTIONS



All medians shall be field measured to determine the location of necessary striping. Stop/Yield bars and centerlines shall be placed when the median width is greater than 30 ft. The median width is defined as the area between two roadways of a divided highway measured from edge of traveled way to edge of traveled way. The median excludes turn lanes. The median width might be different between intersections, interchanges and of opposite approaches of the same intersection. The narrow median width will be the controlling width to determine if markings are required.



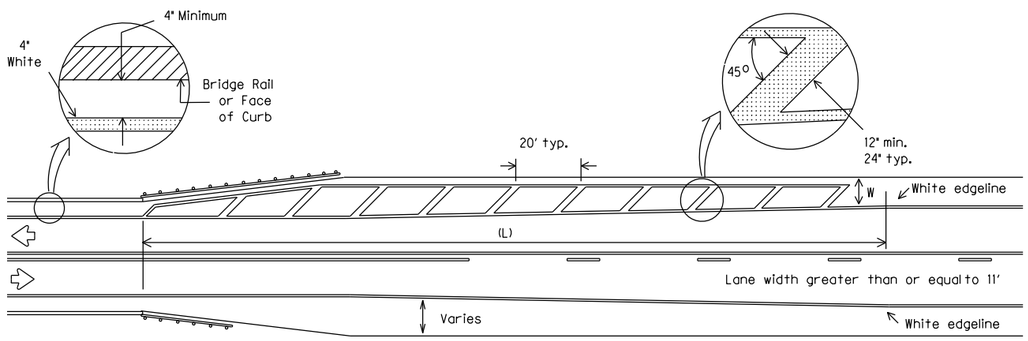
CENTERLINE AND LANE LINES FOUR LANE TWO-WAY ROADWAY WITH OR WITHOUT SHOULDERS



GUIDE FOR PLACEMENT OF STOP LINES, EDGE LINE & CENTERLINE

Based on Traveled Way and Pavement Widths for Undivided Highways

ROADWAYS WITH REDUCED SHOULDER WIDTHS ACROSS BRIDGE OR CULVERT



NOTES:

1. No-passing zone on bridge approach is optional but if used, it shall be a minimum 500 feet long.
2. For crosshatching length (L) see Table 1.
3. The width of the offset (W) and the required crosshatching width is the full shoulder width in advance of the bridge.
4. The crosshatching should be required if the shoulder width in advance of the bridge is 4 foot or wider and any reduction in shoulder width across the bridge occurs.
5. For guard fence details, refer elsewhere in the plans.

TABLE 1 - TYPICAL LENGTH (L)

Posted Speed *	Formula
30, 35, 40	$L = \frac{WS^2}{60}$
45, 50, 55, 60, 65, 70	L=WS

* 85th Percentile Speed may be used on roads where traffic speeds normally exceed the posted speed limit. Crosshatching length should be rounded up to nearest 5 foot increment.

L=Length of Crosshatching (FT.) W=Width of Offset (FT.) S=Posted Speed (MPH)

EXAMPLES:

An 8 foot shoulder in advance of a bridge reduces to 4 feet on a 70 MPH roadway. The length of the cross-hatching should be:

$L = 8 \times 70 = 560$ ft.

A 4 foot shoulder in advance of a bridge reduces to 2 feet on a 40 MPH roadway. The length of the cross-hatching should be:

$L = 4(40)^2 / 60 = 106.67$ ft. rounded to 110 ft.

GENERAL NOTES:

Edgeline striping shall be as shown in the plans or as directed by the Engineer. The edgeline should typically be placed a minimum of 6 inches from the edge of pavement. This distance may vary due to pavement raveling or other conditions. Edgelines are not required in curb and gutter sections of roadways.

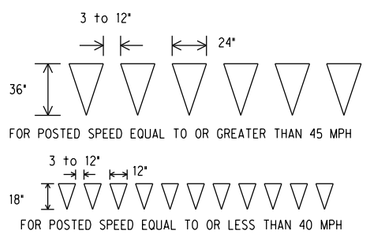
The traveled way includes only that portion of the roadway used for vehicular travel and not the parking lanes, sidewalks, berms and shoulders. The traveled ways shall be measured from the inside of edgeline to inside of edgeline of a two lane roadway.

All pavement marking materials shall meet the required Departmental Material Specifications as specified by the plans.

SPECIFICATION REFERENCE TABLE

MATERIAL SPECIFICATIONS	
PAVEMENT MARKERS (REFLECT.)	DMS-4200
EPOXY	DMS-6100
BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS	DMS-6130

YIELD LINES



CERTIFICATION:

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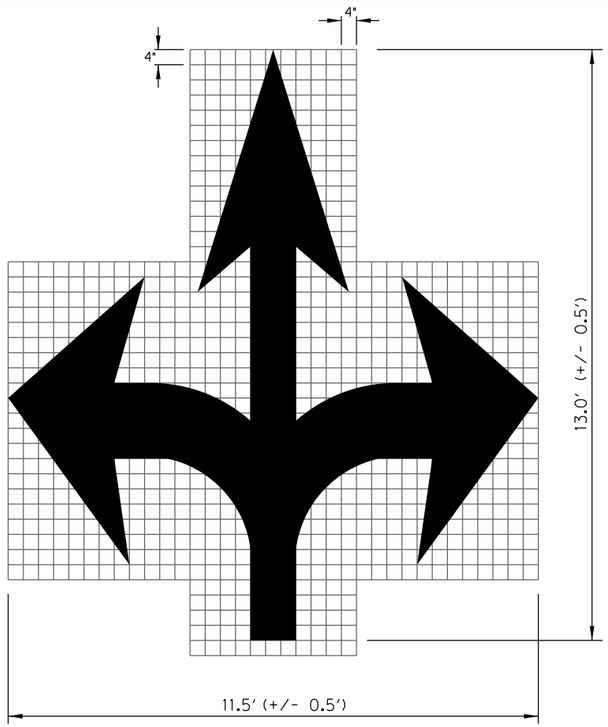
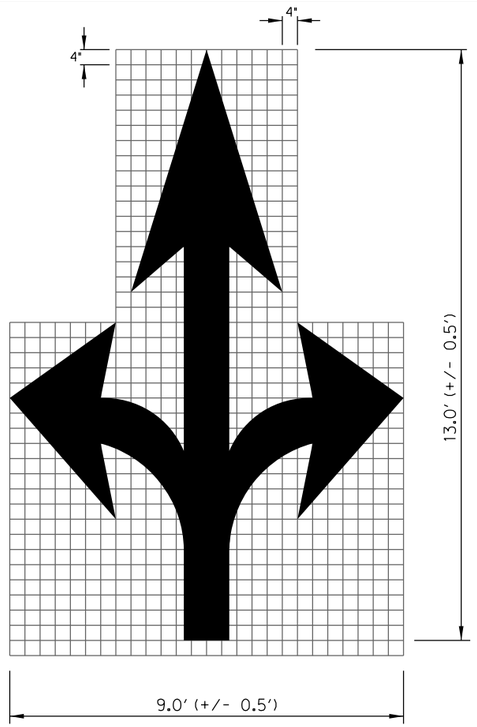
PAVEMENT MARKING STANDARD DETAILS

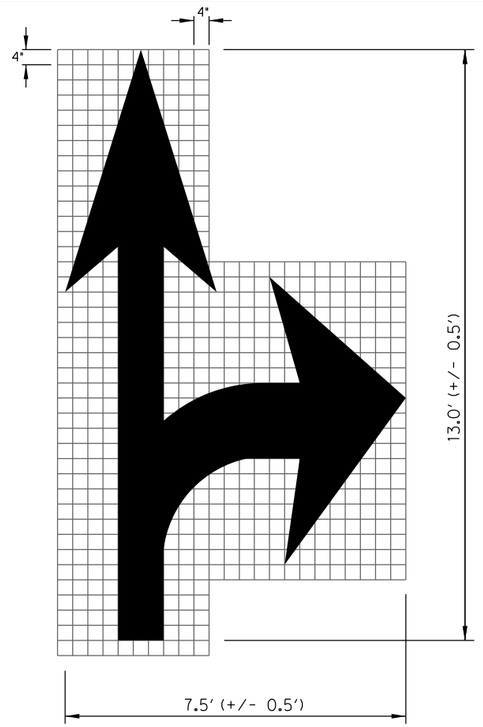
TYPICAL STANDARD PAVEMENT MARKINGS

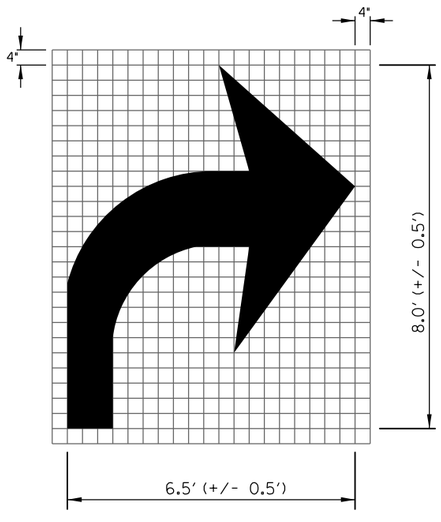
TOWN OF HICKORY CREEK
DENTON COUNTY, TEXAS

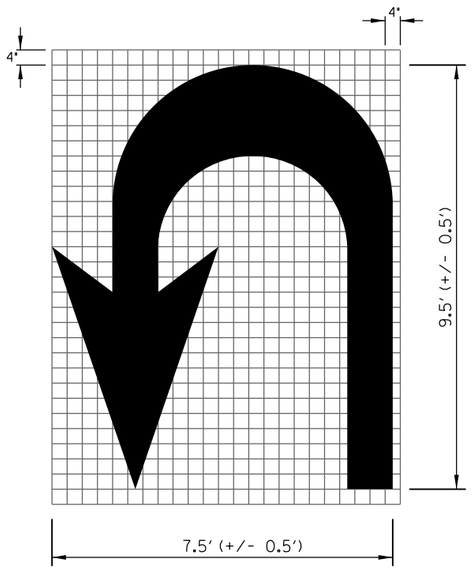
DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
HALFF	HALFF	HALFF	OCT 2012	N.T.S.	P-14	

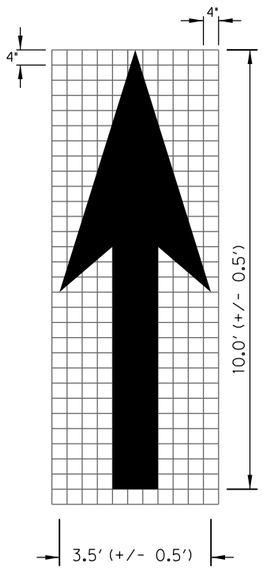


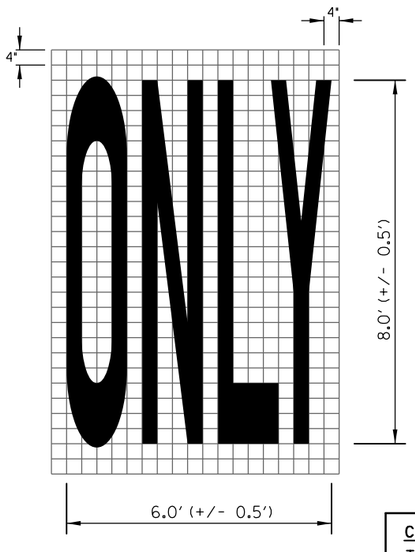












GENERAL NOTES;

1. Minimum 8 foot white markings should be used, unless otherwise noted. If message consists of more than one word, it should be placed with first word nearest the driver.

2. These details are standard size for normal installation; sizes may be reduced approximately one-third for low speed urban conditions; larger sizes may be needed for freeways, above average speed conditions or other critical locations.

3. The longitudinal space between markings should be at least four times the height of the markings, on low speed roads, but should not exceed ten times the height under any condition.

4. Markings considered appropriate for use when warranted include the following:

   A. Regulatory
      STOP
      RIGHT (LEFT) TURN ONLY
      25 MPH
      SYMBOL ARROWS

   B. Warning
      STOP AHEAD
      SIGNAL AHEAD
      SCHOOL
      SCHOOL X-ING
      PED X-ING
      R X R (see RCPM standard)

   C. Guide
      US XXX
      ROUTE XXX
      STATE XXX
      Other words or symbols may be necessary under certain conditions

5. Uncontrolled use of pavement markings can result in driver confusion. Word and symbol markings should be no more than three lines.

6. The word "STOP" shall not be used on the pavement unless accompanied by a Stop line and Stop sign. The word "STOP" shall not be placed on the pavement in advance to a stop line, unless every vehicle is required to stop at all times.

7. Pavement markings should generally be no more than one lane in width, with School messages being the exception. For details of School and School crossing pavement markings, refer to Part VII of the "Texas Manual on Uniform Traffic Control Devices".

8. Spacing between letters should be approximately 4 inches. The width of letters may vary depending on the width of the travel lanes.

9. Lane-Use arrow markings may be used to convey either guidance or mandatory messages. Arrows used to convey a mandatory movement must be accompanied by standard signs and the pavement marking word "ONLY".

10. Pavement markings are to be located as specified elsewhere in the plans.

SPACING BETWEEN LINES OF PAVEMENT MARKING	
MPH	SPACING
≤ 45	MINIMUM 4 TIMES THE LETTER HEIGHT
> 45	MINIMUM - 4 TIMES THE LETTER HEIGHT MAXIMUM - 10 TIMES THE LETTER HEIGHT

CERTIFICATION:

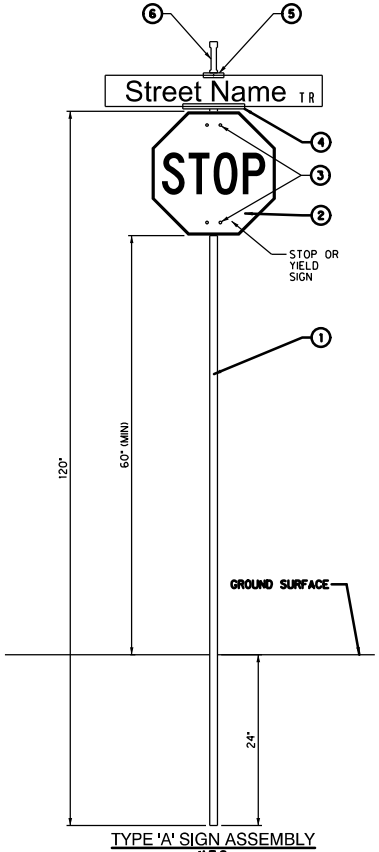
THIS TOWN OF COPPER CANYON STANDARD DETAIL SHEET IS AUTHORIZED FOR USE IN THIS PROJECT BY THE ENGINEER WHOSE SEAL APPEARS ON THIS SHEET. MODIFICATIONS TO THE STANDARD DETAILS SHALL BE NOTED ON THIS SHEET AND SHALL COMPLY WITH THE TOWN'S ORDINANCES, STATE, AND FEDERAL REGULATIONS.

PAVEMENT MARKING STANDARD DETAILS

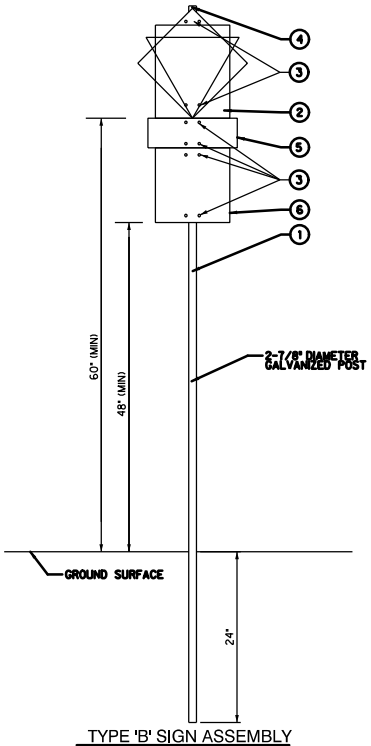
LEGENDS AND ARROWS

TOWN OF HICKORY CREEK
DENTON COUNTY, TEXAS

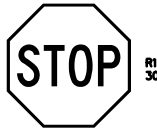
DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
HALFF	HALFF	HALFF	OCT 2012	N.T.S.	P-15	—



TYPE 'A' SIGN ASSEMBLY
N.T.S.



TYPE 'B' SIGN ASSEMBLY
N.T.S.



R1-1
30"X30"

R1-2
30"X30"X30"

R2-1
24"X30"

	STOP SIGN ASSEMBLY (W/ STREET NAME SIGN ON TOP)	
	MATERIALS	QUANTITY
1	10 FOOT (120 INCH) - SIGN POST - 2-7/8" DIAMETER GALVANIZED POST	1
2	24" X 24" OR 30" X 30" STOP SIGN - 0.080" THICK ALUMINUM HIGH INTENSITY PRISMATIC	1
3	3" U-CLAMP	2
4	12" CROSS EXTRUDED BLADE HOLDER	1
5	12" CROSS EXTRUDED BLADE HOLDER	1
6	9" EXTRUDED BLADE STREET NAME MARKER	1

	TRAFFIC SIGN ASSEMBLY	
	MATERIALS	QUANTITY
1	10 FOOT (120 INCH) - SIGN POST - 2-7/8" DIAMETER GALVANIZED POST	1
2	TOP TRAFFIC SIGN	1
3	3" U-CLAMP	2
4	2-7/8" DIA. POST CAP W/ 12" EXTRUDED BLADE HOLDER	1
5	MIDDLE TRAFFIC SIGN	1
6	BOTTOM TRAFFIC SIGN	1

TRAFFIC CONTROL NOTES

1. ALL SIGNAGE, BARRICADES, AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH THE LATEST REVISIONS OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND THE STANDARD HIGHWAY SIGN DESIGN FOR TEXAS.
2. LOCATIONS SHOWN FOR SIGNAGE AND PAVEMENT MARKINGS ARE APPROXIMATE; FINAL LOCATIONS MAY CHANGE DUE TO POST CONSTRUCTION CONDITIONS AND PRESENCE OF OTHER PHYSICAL FEATURES. FINAL LOCATION OF ALL TRAFFIC CONTROL DEVICES SHALL BE FIELD VERIFIED WITH TOWN OF HICKORY CREEK PRIOR TO INSTALLATION.
3. ALL PAVEMENT MARKINGS OTHER THAN BUTTONS SHALL BE THERMOPLASTIC UNLESS OTHERWISE NOTED.
4. ALL SIGNS SHALL BE DIAMOND GRADE INTENSITY AND THE SIZES SHALL BE STANDARD UNLESS OTHERWISE NOTED.
5. ALL TRAFFIC SIGNS, POSTS, AND MATERIALS SHALL BE INSTALLED PER DETAIL ON THIS SHEET.
6. FOR STOP SIGNS THAT WILL ACCEPT FUTURE STREET SIGNS, EXTEND POST ABOVE STOP SIGN SO THAT 2 HOLES ARE AVAILABLE FOR MOUNTING. (FOR ALL OTHERS, POST SHALL NOT EXTEND ABOVE SIGN.)
7. CHANGES TO TYPICAL SIGN POST LOCATION MADE AT ENGINEER'S DISCRETION.

LOCATION:

-9" EXTRUDED STREET NAME BLADE SHALL BE USED AT ALL INTERSECTIONS.

BLADE REQUIREMENTS:
-BLADES SHALL BE ALUMINUM.

LETTERING ALIGNMENT:
- FOR MAJOR ROADS THE TOWN LOGO SHALL APPEAR AT THE LEFT EDGE.
- STREET NAME SHALL BE LEFT JUSTIFIED & ALIGNED WITH TOWN LOGO
- BLOCK NUMBERS SHALL BE LOCATED IN UPPER RIGHT HAND CORNER AND RIGHT JUSTIFIED.
- ABBREVIATED STREET DESIGNATIONS SHALL BE LOCATED IN THE LOWER RIGHT HAND CORNER AND RIGHT JUSTIFIED.

LETTERING FOR 9" EXTRUDE BLADES:
- FONT SHALL BE CLEAR VIEW 2W
- FOR EACH WORD, THE FIRST LETTER SHALL BE UPPERCASE, 6" TALL AND ALL FOLLOWING LETTERS SHALL BE LOWERCASE.
- LETTERS IN ABBREVIATED STREET DESIGNATIONS SHALL BE 3" TALL AND WITH THE FIRST LETTER UPPERCASE (I.e. Ln, Pkwy, Ct, etc.)
- BLOCK NUMBERS SHALL BE 3" TALL

SIGN SHEETING AND COLORS:
- SHEETING SHALL BE 3M REFLECTIVE COATING.
- BACKGROUND COLOR SHALL BE GREEN WITH WHITE LEGEND TEXT.
- ALL LETTERING SHALL BE WHITE.
- EMBLEM SHALL BE ACQUIRED FROM TOWN OF HICKORY CREEK
- "NO OUTLET" PANEL BACKGROUND SHALL BE YELLOW WITH BLACK LEGEND TEXT.
- "PRIVATE" PANEL BACKGROUND SHALL BE WHITE WITH BLACK LEGEND TEXT.

CERTIFICATION:

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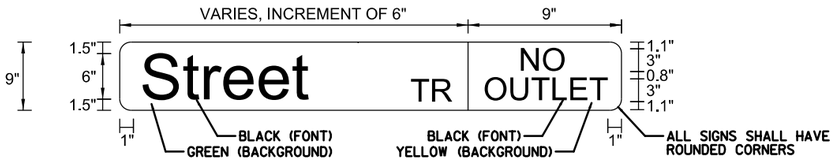
PAVEMENT STANDARD DETAILS

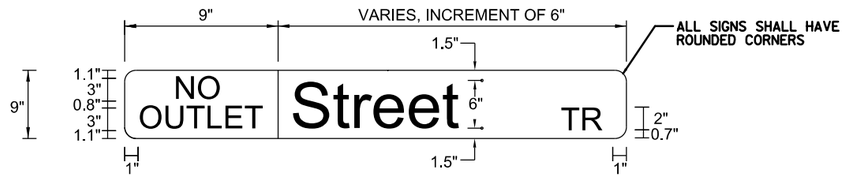
SIGNING DETAILS & TRAFFIC CONTROL NOTES

TOWN OF HICKORY CREEK
DENTON COUNTY, TEXAS

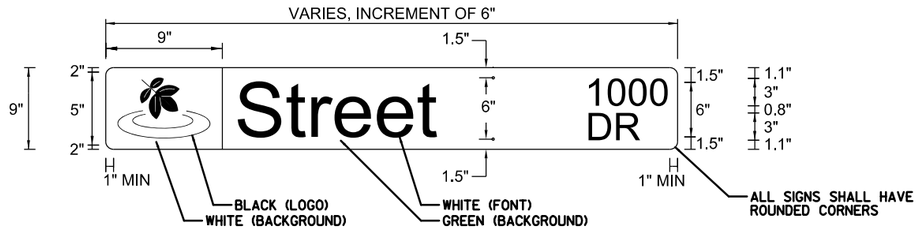
DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
HALFF	HALFF	HALFF	OCT 2012	N.T.S.	P-16	



MINOR STREET - NO OUTLET (FRONT)
N.T.S.



MINOR STREET - NO OUTLET (BACK)
N.T.S.



STREET NAME BLADE SIGNS - ALL STREETS AND ROADS
N.T.S.

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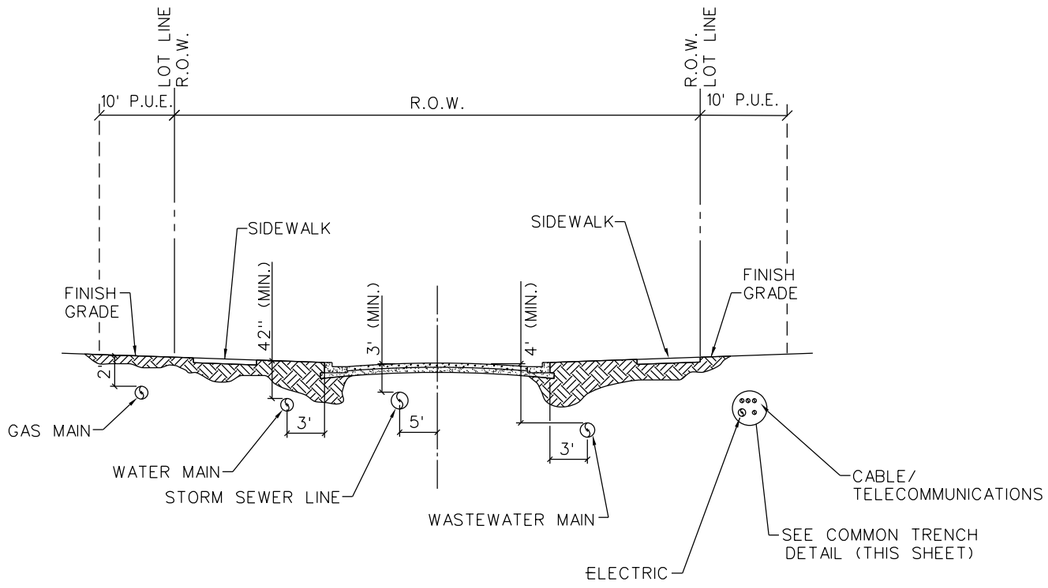
PAVEMENT STANDARD DETAILS

SIGNING DETAILS & TRAFFIC CONTROL NOTES

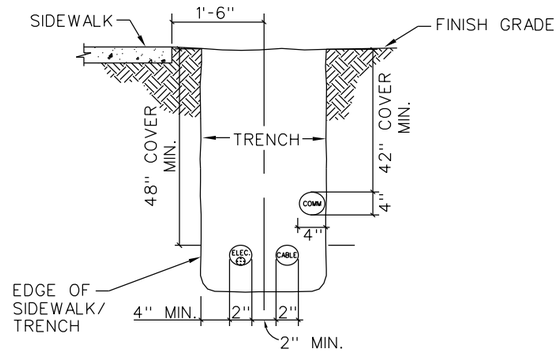
TOWN OF HICKORY CREEK
DENTON COUNTY, TEXAS

DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
HALFF	HALFF	HALFF	OCT 2012	N.T.S.	P-17	—



ROAD SECTION WITH UTILITY ASSIGNMENTS

N.T.S.



COMMON TRENCH DETAIL

N.T.S.

NOTE:
1. WATER LINE SHALL BE LOCATED ON NORTH AND EAST SIDE OF STREET AND ON THE OPPOSITE SIDE OF STREET FROM WASTEWATER MAIN.
2. WHEN USING JOINT TRENCH FOR ELECTRIC AND COMMUNICATION, THE GAS MAIN WILL BE LOCATED ON THE OPPOSITE SIDE OF THE STREET FROM THE JOINT TRENCH.
3. UTILITIES CROSSING EXISTING ROADWAY SHALL BE BORED. NO OPEN CUT OF ROADWAY WILL BE ALLOWED.

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PAVEMENT DETAILS

ROAD SECTION WITH UTILITY ASSIGNMENTS

TOWN OF HICKORY CREEK
DENTON COUNTY, TEXAS

DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
HALFF	HALFF	HALFF	OCT 2012	N.T.S.	P-18	

SILT FENCE GENERAL NOTES

(1) STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF ONE FOOT.

(2) THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (e.g. PAVEMENT), WEIGHT FABRIC FLAP WITH ROCK ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.

(3) THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.

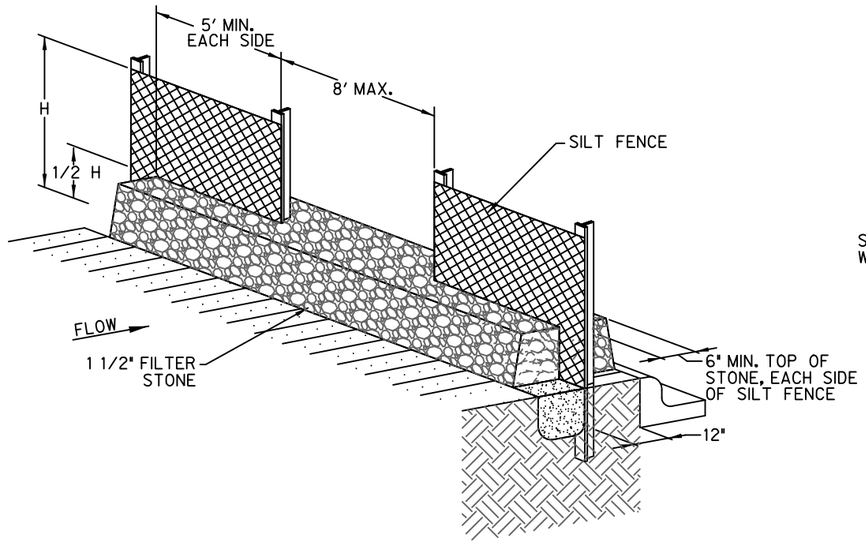
(4) SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IN TURN IS ATTACHED TO THE STEEL FENCE POST. THERE SHALL BE A 3 FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.

(5) INSPECTION SHALL BE MADE EVERY TWO WEEKS AND AFTER EACH ½" RAINFALL. REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.

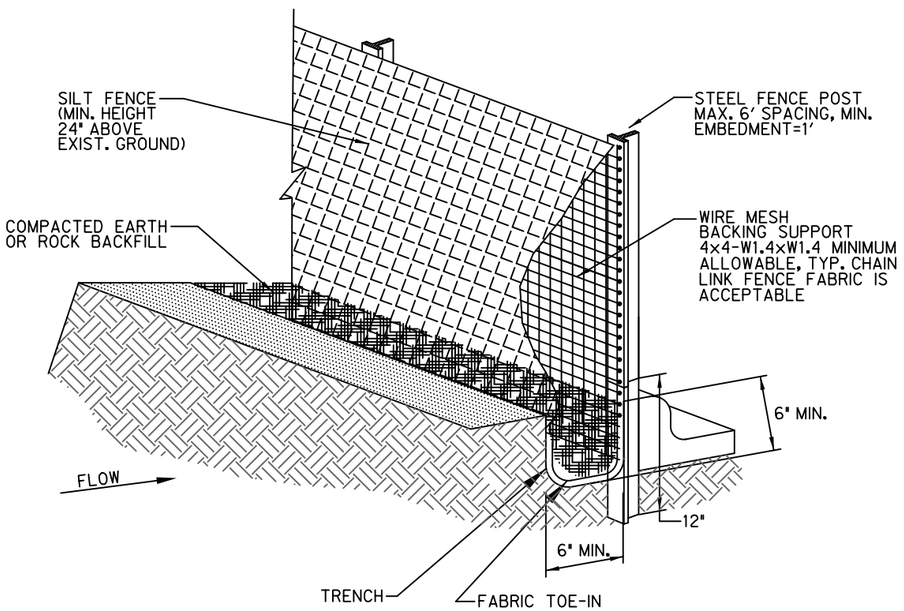
(6) SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

(7) ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF HALF THE HEIGHT OF THE FENCE. THE SILT SHALL BE DISPOSED OF AT AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.

NOTE:
STONE OVERFLOW STRUCTURES OF OTHER OUTLET CONTROL DEVICES SHALL BE INSTALLED AT ALL LOW POINTS ALONG THE FENCE OR EVERY 300 FEET IF THERE IS NO APPARENT LOW POINT



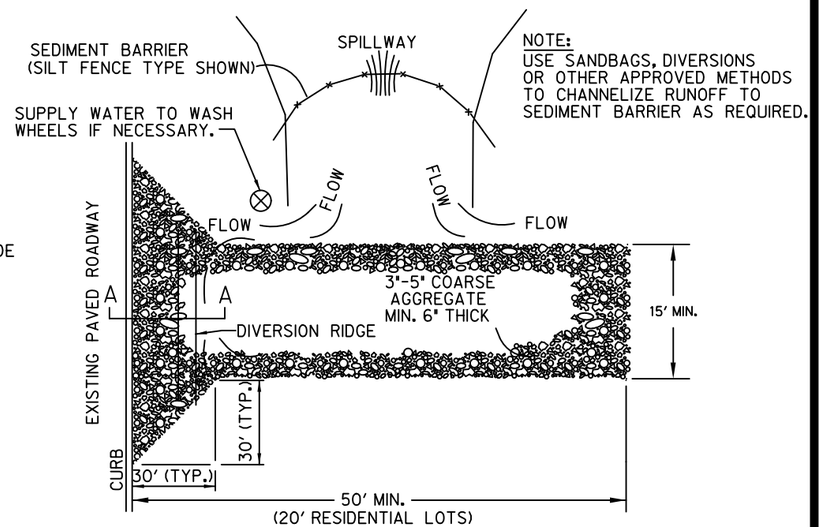
SILT FENCE
STONE OVERFLOW STRUCTURE
N.T.S.



ISOMETRIC PLAN VIEW
N.T.S.

DIVERSION RIDGE REQUIRED WHERE GRADE EXCEEDS 2%

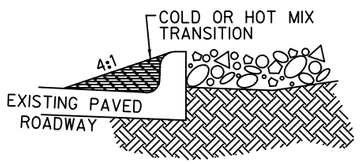
SECTION A - A



NOTE:
USE SANDBAGS, DIVERSIONS OR OTHER APPROVED METHODS TO CHANNELIZE RUNOFF TO SEDIMENT BARRIER AS REQUIRED.

PLAN

NOTE:
WHEN SEDIMENT HAS SUBSTANTIALLY CLOGGED THE VOID AREA BETWEEN THE ROCKS, THE AGGREGATE MAT MUST BE WASHED DOWN OR REPLACED. PERIODIC RE-GRADING AND TOP DRESSING WITH ADDITIONAL STONE MUST BE DONE TO KEEP THE EFFICIENCY OF THE ENTRANCE FROM DIMINISHING.



TRANSITION

TEMPORARY STONE CONSTRUCTION ENTRANCE/EXIT
N.T.S.

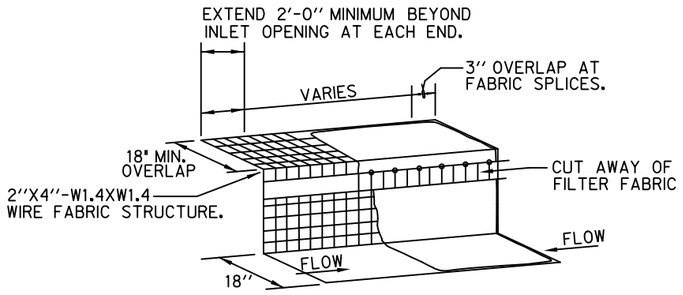
CERTIFICATION:
THIS TOWN OF HICKORY CREEK STANDARD DETAIL SHEET IS AUTHORIZED FOR USE IN THIS PROJECT BY THE ENGINEER WHOSE SEAL APPEARS ON THIS SHEET. MODIFICATIONS TO THE STANDARD DETAILS SHALL BE NOTED ON THIS SHEET AND SHALL COMPLY WITH THE TOWN'S ORDINANCES, STATE, AND FEDERAL REGULATIONS.

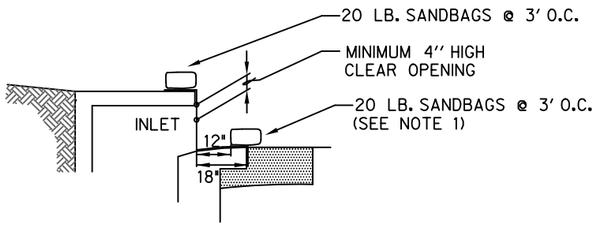
EROSION CONTROL

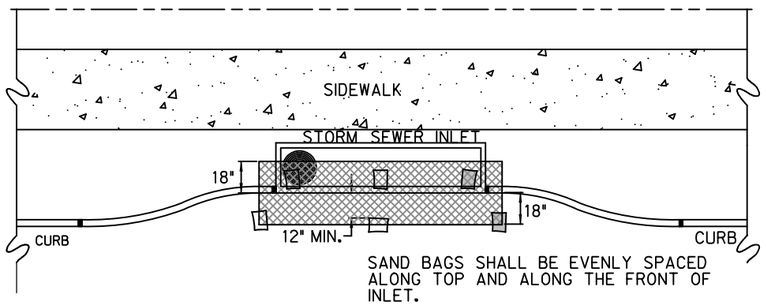
EROSION CONTROL DETAILS (SHEET 1 OF 2)

TOWN OF HICKORY CREEK
DENTON COUNTY, TEXAS

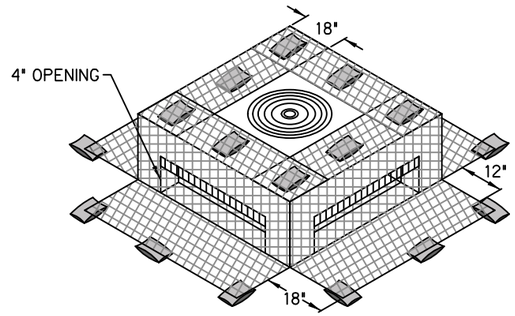
DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
HALFF	HALFF	HALFF	OCT 2012	N.T.S.	EC-1	—



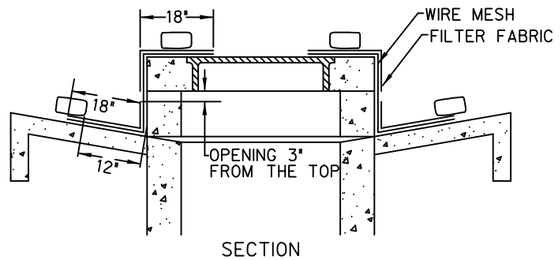




CURB INLET PROTECTION DETAIL
N.T.S.



ISOMETRIC VIEW



SECTION

FILTER FABRIC WYE INLET PROTECTION
N.T.S.

ESTABLISHMENT OF GROUND COVER

(1) Eighty percent (80%) evenly distributed ground cover, without large bare areas, shall be established after the designated areas have been completed to the lines, grades and cross sections shown on the plans and prior to final acceptance by the Town.

(2) Ground cover, for Seeding Turf Grass, shall be in accordance with the standard specifications of the Town of Hickory Creek, which has also adopted the Fourth Edition of the "Standard Specifications For Public Works Construction - North Central Texas" herein referred to as "COG" specifications. Copies may be obtained from the North Central Texas Council of Governments, 616 Six Flags Drive, Suite 200, Arlington, Texas 76005-5888. (817) 640-3300.
A copy of the contract documents, plans and specifications shall be available on-site at all times by the Contractor.

(3) Refer to COG Item 202.6 specifications.

(4) Prior to planting, contractor shall provide the Town with the State of Texas Certificate stating analysis of purity and germination of seed.

(5) Planting season and application rates. All planting shall be done between the dates specified in Table 1, for each grass type except when specifically authorized in writing. The seeds planted per acre shall be of a type specified with the mixture, rate and planting dates as shown in the Table 1, or as specified by the Engineer.

Table 1. Seeding Turfgrass

TYPE	PLANTING SEASON	SEED AND RATE
TYPE I	MARCH THROUGH SEPTEMBER	BERMUDA GRASS, HULLED 50-LB (22.7-KG) PLS PER ACRE
TYPE II	OCTOBER THROUGH FEBRUARY	RYE GRASS, 100-LB (45.4-KG) PLS PER ACRE COMBINED WITH BERMUDA GRASS, HULLED 20-LB (9.1-KG) PLS PER ACRE.
OTHER	AS SPECIFIED ON PLANS	AS SPECIFIED ON PLANS

[1]PLS - Pure Live Seed is determined by multiplying the gross weight times purity times the germination (For example, a 100-lb bag with 85% purity and 80% germination. (PLS=pounds in bag x Purity x germination) 100 x 0.85 x 0.8 = 60.8 -lbs of pure live seed.)

(6) Seeded areas shall be maintained, including watering and mowing, at such time and in a manner and quality to establish a minimum 80% evenly distributed ground cover, without large bare areas, until completion and final acceptance of the project by the Town.

NOTES:

(1) A SECTION OF FILTER FABRIC SHALL BE REMOVED AS SHOWN ON THIS DETAIL TO PROVIDE A 4-INCH MINIMUM CLEAR OPENING. FABRIC MUST BE SECURED TO WIRE BACKING WITH CLIPS OR HOG RINGS AT THIS LOCATION.

(2) INSPECTION SHALL BE MADE BY THE CONTRACTOR AND SILT ACCUMULATION MUST BE REMOVED WHEN DEPTH REACHES 2-INCHES.

(3) CONTRACTOR SHALL MONITOR THE PERFORMANCE OF INLET PROTECTION DURING EACH RAINFALL EVENT AND IMMEDIATELY REMOVE THE INLET PROTECTIONS IF THE STORM-WATER BEGINS TO OVERTOP THE CURB.

(4) INLET PROTECTIONS SHALL BE REMOVED AS SOON AS THE SOURCE OF SEDIMENT IS STABILIZED.

INLET OPENING	MINIMUM NUMBER OF SAND BAGS	
	TOP	FRONT
5'	2	3
10'	3	3
15'	3	4
20'	4	4

CERTIFICATION:

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EROSION CONTROL

EROSION CONTROL DETAILS (SHEET 2 OF 2)

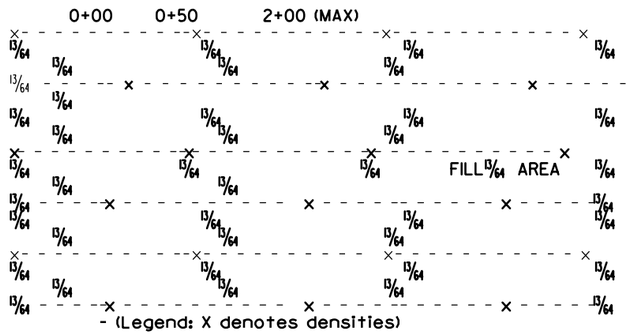
TOWN OF HICKORY CREEK
DENTON COUNTY, TEXAS

DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
HALFF	HALFF	HALFF	OCT 2012	N.T.S.	EC-2	

STORM DRAIN GENERAL NOTES

1. All construction shall be in accordance with the standard specifications of the Town of Hickory Creek and the Fourth Edition of the "Standard Specifications for Public Works Construction - North Central Texas" herein referred to as "COG" specifications. Copies may be obtained from the North Central Texas Council of Governments, 616 Six Flags Drive, Suite 200, Arlington, Texas 76005-5888. (817) 640- 3300.
2. Storm drain lines shall be installed per COG Item 508 specifications.
3. Only Reinforced Concrete Pipe (RCP) or Reinforced Concrete Box (RCB) is approved for use in public right-of-way or easements.
4. For pipes, embedment shall be per the Street Backfill & Repair detail on the Backfill / Embedment Standard Detail. For box culverts, embedment shall be per the Box Culvert Embedment detail on the Backfill / Embedment Standard Detail.

   Note that flowable backfill is only required below areas to be paved.
5. The CONTRACTOR shall seal all joints on closed conduits with Omni-Flex joint seals, or equal; unless approved otherwise by the Town.
6. All concrete to be used in pre-cast products for reinforced concrete pipes or boxes shall come from plants certified by the National Pre-cast Concrete Association.
7. The CONTRACTOR shall use only pre-fabricated fittings on new construction projects. Field connections shall be made only to existing pipe with Town approval. The connection shall be a smooth connection and concrete wrapped on the outside and inside.
8. Concrete collars shall be constructed per the Concrete Collar Details on the Headwalls & Pipe Collars Standard Detail at all storm drain size and at grade changes or in curves where the joint is being pulled more than recommended by the manufacturer. Please refer to the details on the Headwalls & Pipe Collars Standard Detail and COG Item 508.3.4.1 specifications.
9. All inlets shall be poured in place. Precast inlets, junction boxes, manholes, and headwalls are not allowed without prior approval from Town Engineer.
10. Bottoms, tops, and variable height curb to be separate pours (3 pours) for curb inlets.
11. Curb inlet bottoms shall be poured prior to any paving.
12. Ring and cover on curb inlets to be located directly over the outlet pipe.
13. Concrete shall be made with a minimum of 5 sacks of cement and have a minimum compressive strength of 3,600 PSI at 28 days.
14. All reinforcing steel shall be new, neat, billet-steel per ASTM designation A-615, Grade 60, and shall be detailed and placed for ACI Manuals SP-88 and 318, latest additions. All reinforcing steel shall have minimum 15 inch lap splices, unless noted otherwise on the plans.
15. The CONTRACTOR shall use a liquid membrane-forming curing compound per COG Item 303.2.13.1.1.
16. All exposed surfaces shall have 3/4 -inch chamfer.
17. All closed conduits shall be Television inspected.
18. The CONTRACTOR shall be responsible for notifying the Town Inspector at least 24 hours prior to any required testing.
    a. Soil and material testing technicians shall provide written proof of having minimum of two (2) years of related field experience.
    b. The CONTRACTOR shall coordinate all testing activities with the Town Inspector and shall facilitate required testing throughout the construction period. The Inspector shall be present during all testing.
    c. The Town shall make final decision as to the validity of all testing results.
    d. The CONTRACTOR shall be responsible for ensuring that materials to be tested are in compliance with all plans and specifications prior to testing. All materials found not to be in compliance with the plans and specifications before and after testing shall be removed and replaced at the CONTRACTOR'S expense.
    e. All costs associated with the retesting of work that fails to meet the specifications required in the contract documents shall be borne by the CONTRACTOR. For Town projects, retesting cost shall be withheld from pay requests submitted by the CONTRACTOR, this cost will be based on the Town's cost with no additional mark-up. A letter of acceptance will not be issued until all testing deficiencies are addressed and all related cost paid.
    f. The Town Inspector shall be notified of concrete placement 24 hours in advance for steel and form inspection.
    g. One set of four cylinders (2-7 day, 2-28 day) for cast-in-place concrete shall be made for every day that concrete is placed (ASTM C-31). Air, slump, and temperature tests shall be taken for every set of cylinders made. Concrete with a temperature above 95 degrees will be rejected. Additional cylinders and or tests may be requested at the Inspector or ENGINEER's discretion. Exterior forms shall not be removed for a minimum of 24 hours unless approved by Inspector or ENGINEER. Sulfate resistant concrete shall be used for all manholes.
    h. Backfill and Density Testing
        1) All trenches shall be backfilled in accordance with standard details and mechanically compacted with approved vibratory methods in accordance with COG Item 504.5.3.2.1 and paragraph 3) below unless otherwise stated on the plans or in the specifications.
        2) Densities shall conform to standard trench details, COG Item 504.5.3.2.1, and Paragraph 3) below unless otherwise stated on the plans or in the specifications. Proctor samples shall be taken for all classifications of soil on site. Atterberg Limits shall be determined on all Proctor samples. No "potholing" will be allowed. Densities shall be taken on all storm drain laterals within the Right-of-Way and shall conform to Paragraph 3) below and COG Item 504.5.3.2.1, unless otherwise stated on the plans or in the specifications. Backfill adjacent to all structures shall be compacted manually and density tested on every lift.
        3) Mechanical Tamping of Backfill
            a) All ditch lines and bore pits shall be mechanically tamped.
            b) Backfill, other than select fill, may consist of onsite or offsite inorganic soils and should be placed in loose lifts 6-inches - 8-inches in thickness (not to exceed 12-inches) and should be mechanically compacted to 98 percent of the maximum dry density as defined by ASTM D-698 (Standard Proctor) procedures under existing and proposed pavement, and to 95 percent standard proctor procedures elsewhere. The moisture content of the fill at the time of compaction shall be between minus 2% of optimum to four percentage points above the proctor optimum value.
            c) All backfill material to be select native material, 6" diameter clods and smaller, unless directed otherwise on the plans or in the specifications and to be mechanically tamped and density controlled as described in Paragraph b) above.
            d) Water jetting is not permitted.
            e) Densities shall be taken every one (1) lift at staggered locations not to exceed 200 feet increments. Offset fifty (50') feet every other lift.
            f) Densities may be taken at typical locations as shown below; also, densities will be taken at random locations and at the geotechnician's discretion.



- (Legend: X denotes densities)

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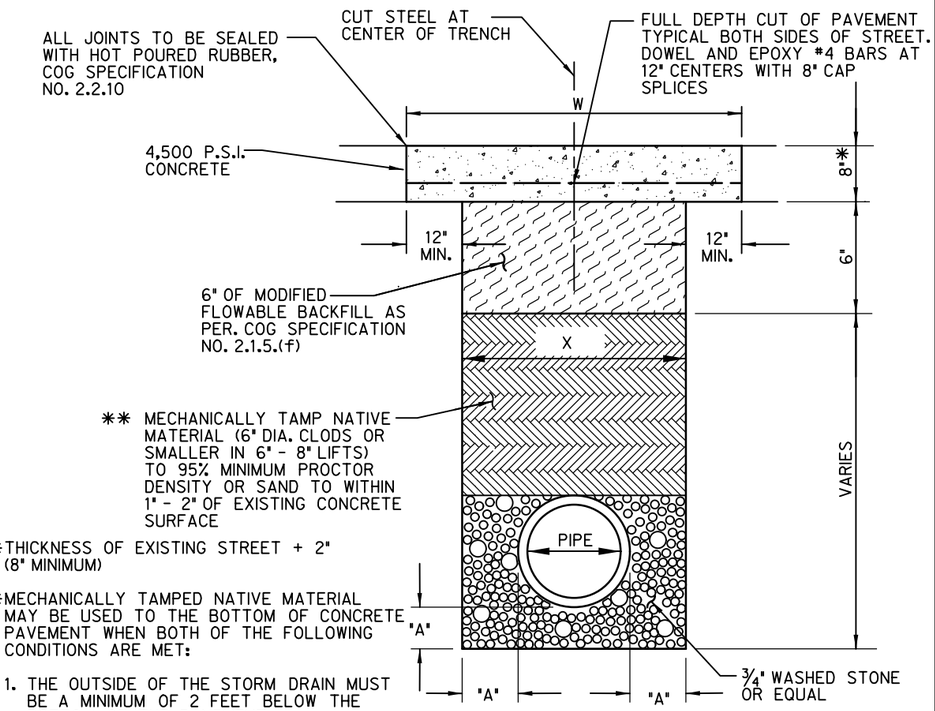
STORM DRAIN STANDARD DETAILS

STORM DRAIN GENERAL NOTES

TOWN OF HICKORY CREEK
DENTON COUNTY, TEXAS

DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
HALFF	HALFF	HALFF	OCT 2012	N.T.S.	SD-1	

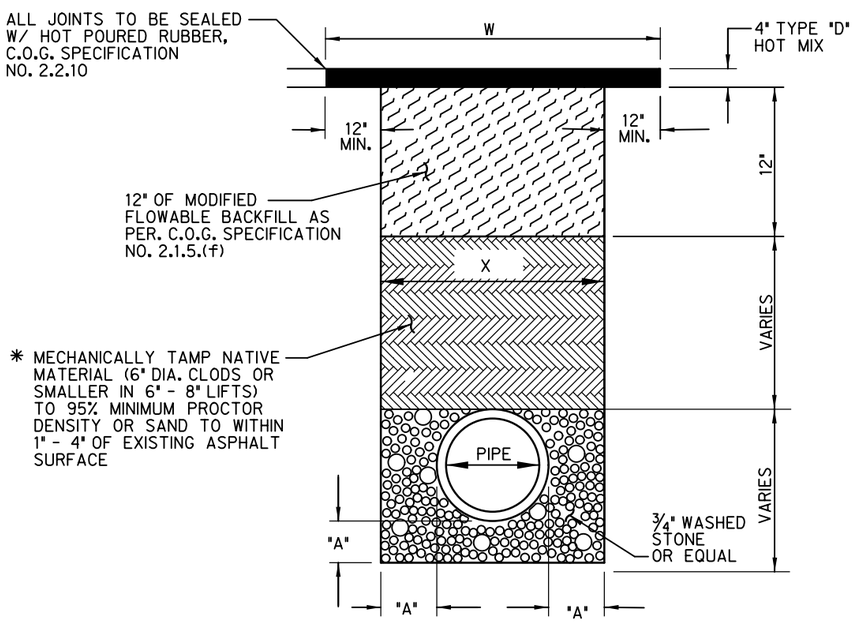


CONCRETE STREET REPAIR

*THICKNESS OF EXISTING STREET + 2" (8" MINIMUM)

**MECHANICALLY TAMPED NATIVE MATERIAL MAY BE USED TO THE BOTTOM OF CONCRETE PAVEMENT WHEN BOTH OF THE FOLLOWING CONDITIONS ARE MET:

1. THE OUTSIDE OF THE STORM DRAIN MUST BE A MINIMUM OF 2 FEET BELOW THE BOTTOM OF THE PAVEMENT.
2. THE STREET IS BEING COMPLETELY REPLACED OR IT IS A NEW STREET.

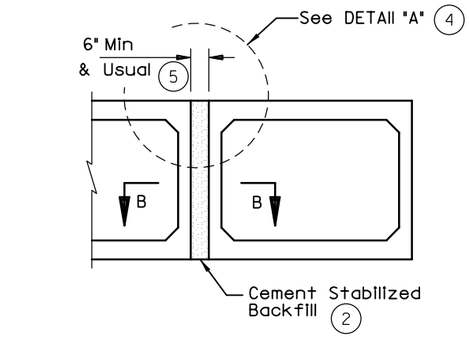


ASPHALT STREET REPAIR

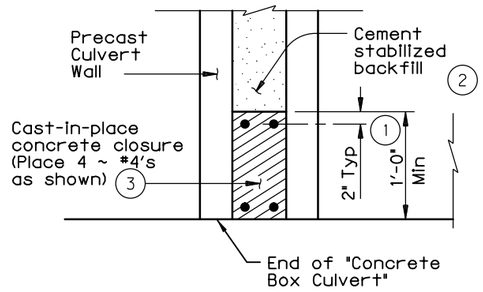
STREET BACKFILL & REPAIR

N.T.S.

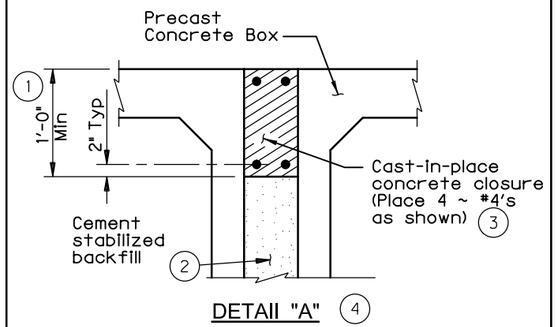
NOTE:
SAWCUT TO REPAIR ASPHALT OR CONCRETE PAVEMENT PRIOR TO OPENING THE DITCH IN ORDER TO ENSURE A NEAT STRAIGHT EDGE.



MULTIPLE UNIT PLACEMENT



SECTION B-B



DETAIL "A" (4)

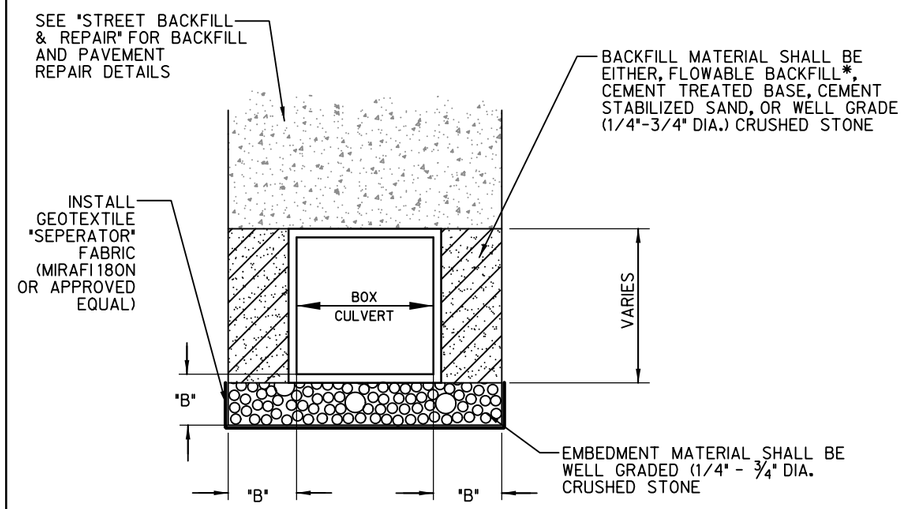
(1) For multiple unit placements the length of the closure for the interior walls may be adjusted as necessary. The length of the top slab, bottom slab, and exterior wall closure shall not be less than 3'-0". See Section B-B detail when interior walls are cast full length.

(2) Cement Stabilized Backfill between boxes is considered part of the Box Culvert for payment.

(3) Any additional concrete and reinforcing required for the closures shall be considered as subsidiary to the Concrete Box Culvert.

(4) For multiple unit placement with the top slab as the final riding surface, provide wall closure as shown in DETAIL "A".

(5) This dimension may be increased with approval of the Engineer to allow the precast boxes to be tunneled or jacked. No payment will be made for any additional material in the gap between adjacent boxes.



BOX CULVERT EMBEDMENT

"B"=7" MINIMUM

NOTE: PREFABRICATED MULTIPLE BOX CULVERTS SHALL CONFORM TO ASTM C789 UNLESS OTHERWISE NOTED.

*FLOWABLE BACKFILL IS ONLY REQUIRED FOR AREAS TO BE PAVED.

NORMAL SIZE OF PIPE IN INCHES	O.D. OF PIPE BELL IN INCHES CLASS III R.C.P.	MINIMUM TRENCH WALL CLEARANCE "A" IN INCHES	WIDTH OF TRENCH ('X')		WIDTH OF PVMT. REPLACEMENT *
			MAXIMUM ** IN INCHES	MINIMUM ** IN INCHES	('W') CONC. & ASPHALT **
18	22.5	6	48	36	60
24	29.0	6	48	42	60
30	35.5	6	52	48	72
36	42.5	6	61	55	72
42	49.75	6	68	62	86
48	56.5	8	75	69	93
54	63.25	8	82	76	100
60	70.5	8	89	83	107
66	77.5	8	96	90	114
72	84.5	8	103	97	121
72+	VARIES	8	•	•	•

NOTE: • REFER TO THE PLANS FOR SPECIFIED WIDTH OF REPLACEMENT.
** RECOMMENDED WIDTHS - VARIES BASED ON DEPTH AND SOIL MATERIAL.

TABLE OF DIMENSIONS FOR WIDTH OF TRENCH AND PAVEMENT REPLACEMENT

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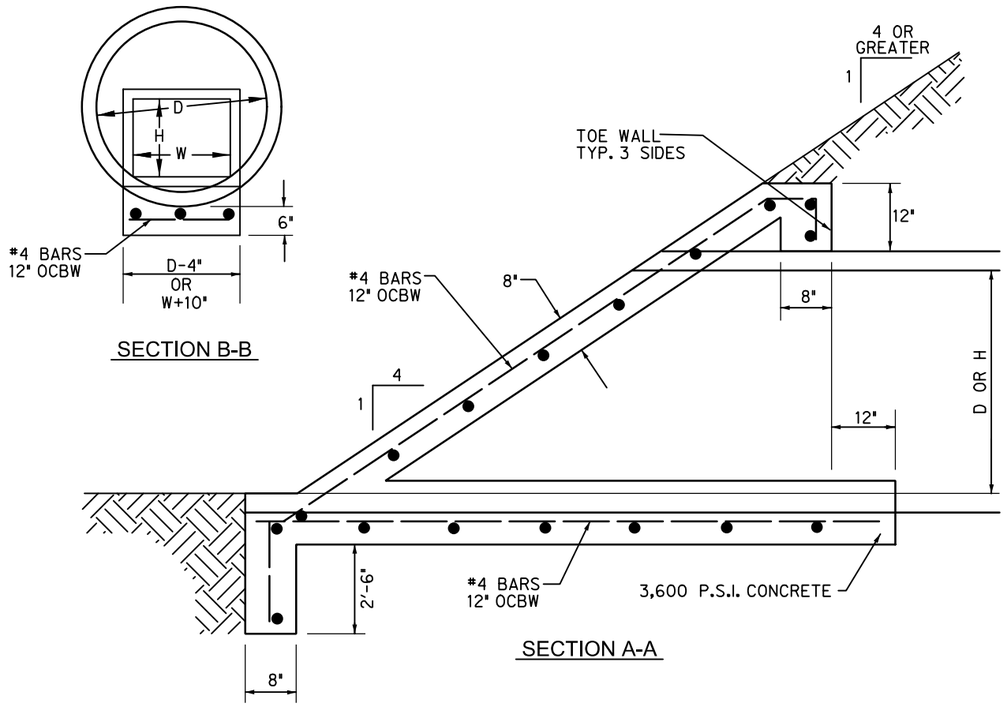
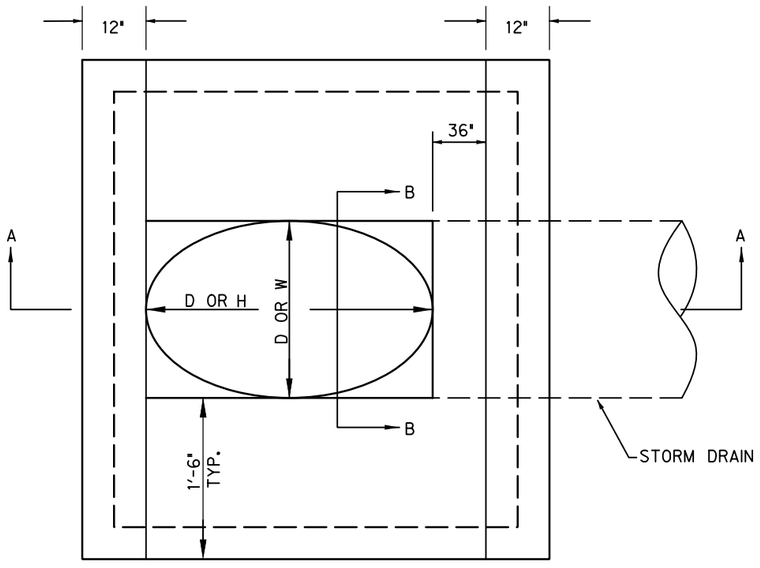
STORM DRAIN STANDARD DETAILS

BACKFILL / EMBEDMENT

TOWN OF HICKORY CREEK
DENTON COUNTY, TEXAS

DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
HALFF	HALFF	HALFF	OCT 2012	N.T.S.	SD-2	

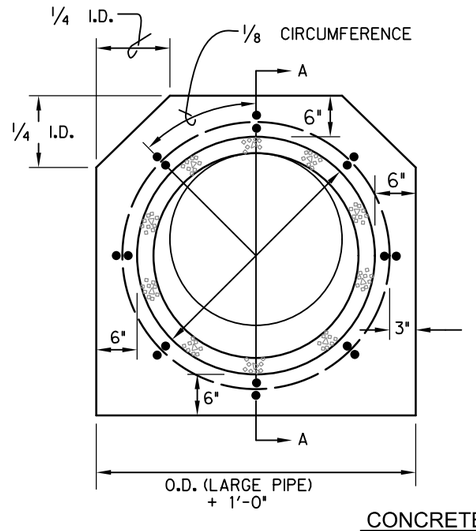


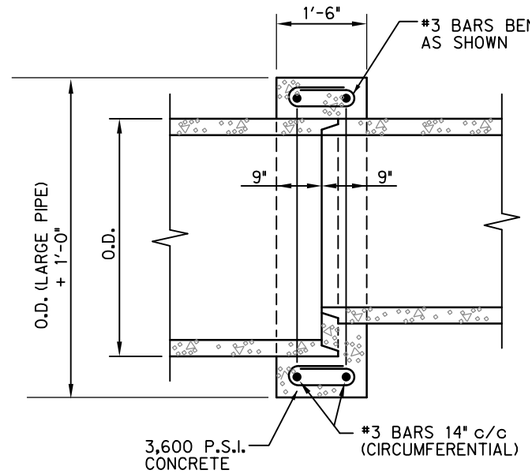


PLAN

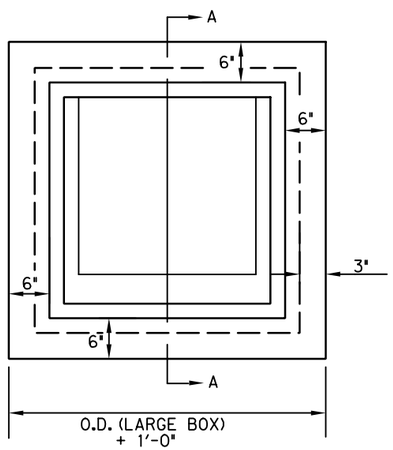
SLOPED HEADWALL

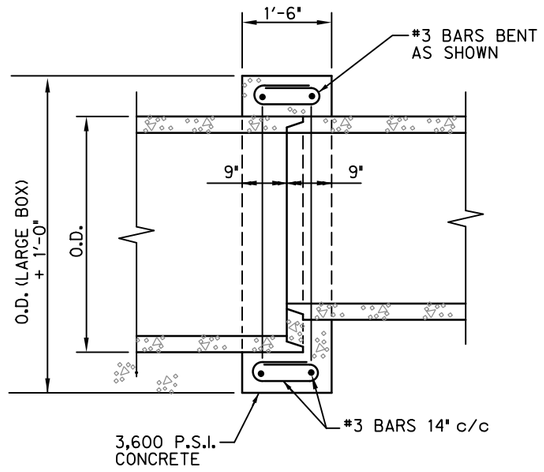
N.T.S.





CONCRETE COLLAR DETAIL (PIPE)





CONCRETE COLLAR DETAIL (BOX)

CONCRETE COLLAR

N.T.S.

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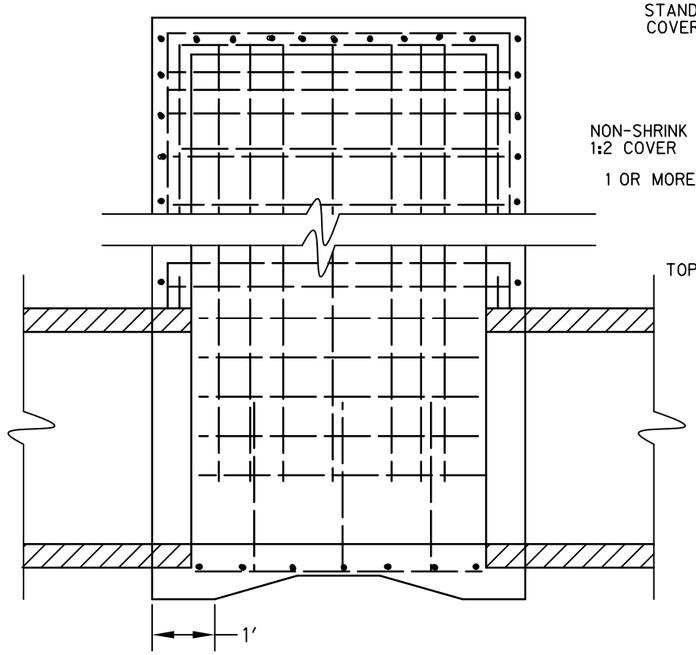
STORM DRAIN STANDARD DETAILS

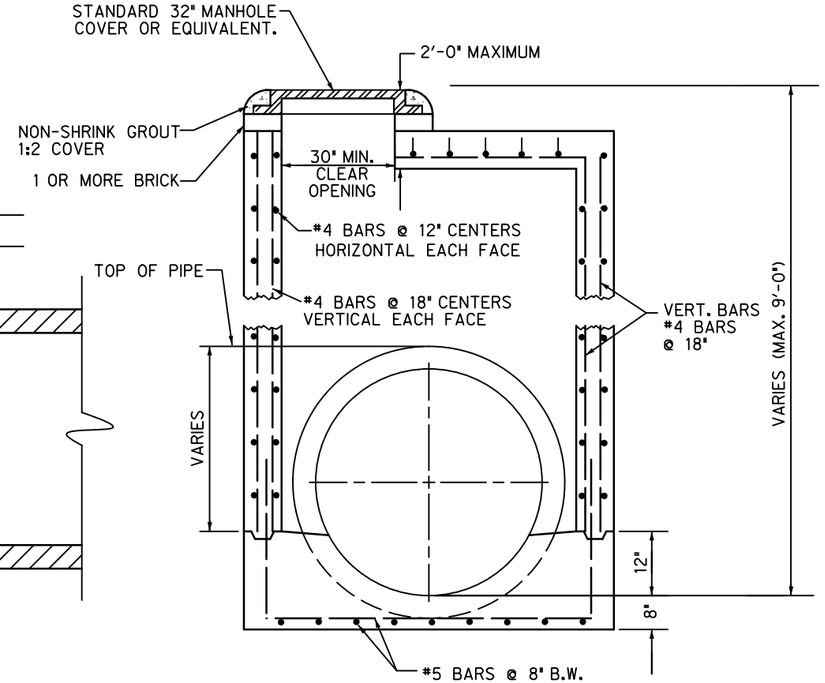
HEADWALLS & PIPE COLLARS

TOWN OF HICKORY CREEK
DENTON COUNTY, TEXAS

DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
HALFF	HALFF	HALFF	OCT 2012	N.T.S.	SD-3	—



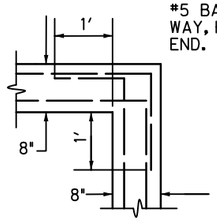
SECTION A-A



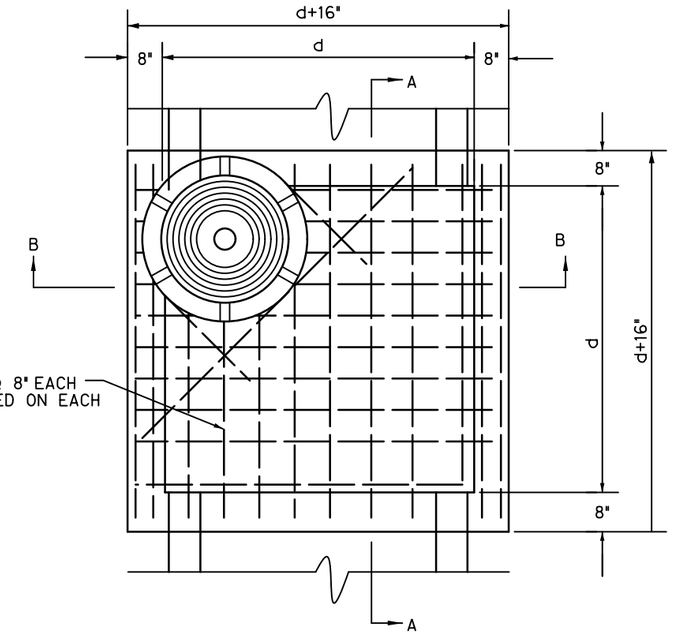
SECTION B-B

NO.	* PIPE SIZES	d
1	24"-45"	4'
2	48"-54"	5'
3	60"	6'

* PIPE SIZE > 60" REQUIRES SPECIAL DESIGN



CORNER

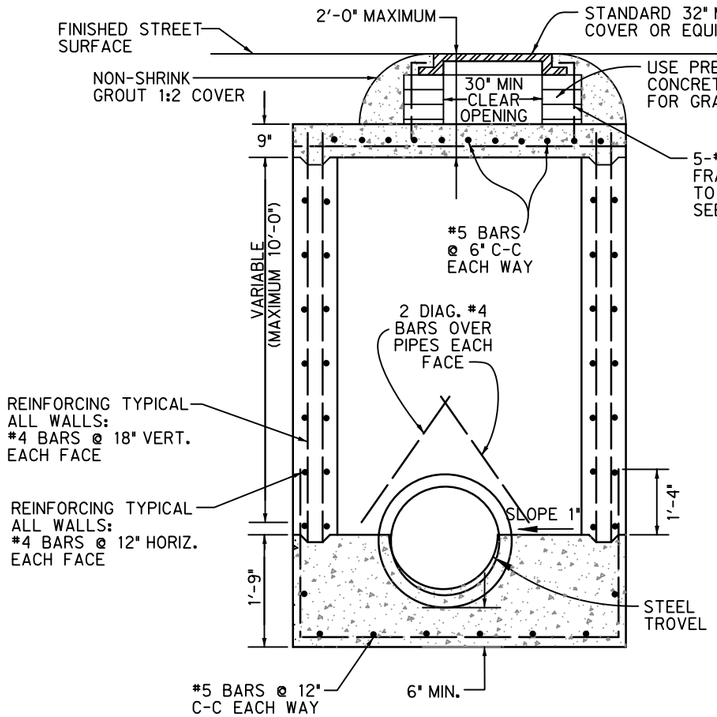


PLAN

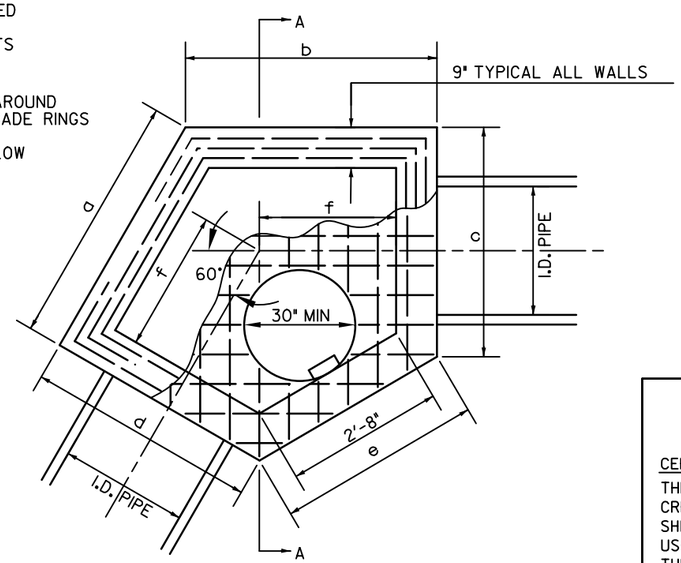
N.T.S.

TYPE "B" JUNCTION BOX

NOTE: JUNCTION BOX FOR PIPE > 60" DIAMETER REQUIRE A SPECIAL DESIGN



SECTION A-A

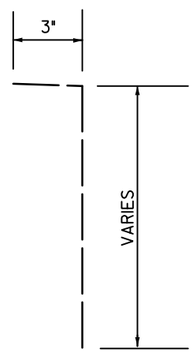


PLAN

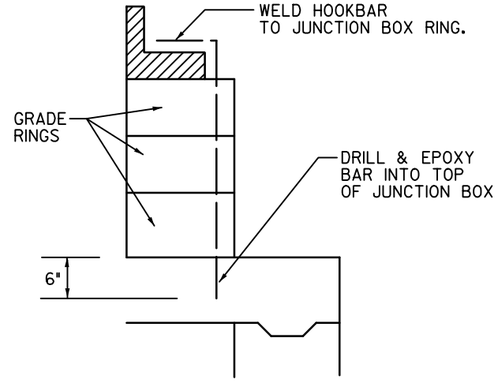
NOTE:
SEE "JUNCTION BOX-SHEET 2 OF 2 FOR DIMENSIONS

TYPE "A" JUNCTION BOX

N.T.S.



HOOK BAR



DETAIL "A"

CERTIFICATION:

THIS TOWN OF HICKORY CREEK STANDARD DETAIL SHEET IS AUTHORIZED FOR USE IN THIS PROJECT BY THE ENGINEER WHOSE SEAL APPEARS ON THIS SHEET. MODIFICATIONS TO THE STANDARD DETAILS SHALL BE NOTED ON THIS SHEET AND SHALL COMPLY WITH THE TOWN'S ORDINANCES, STATE, AND FEDERAL REGULATIONS.

STORM DRAIN STANDARD DETAILS

JUNCTION BOX DETAILS (SHEET 1 OF 2)

TOWN OF HICKORY CREEK
DENTON COUNTY, TEXAS

DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
HALFF	HALFF	HALFF	OCT 2012	N.T.S.	SD-4	

TYPE "A" JUNCTION BOX DIMENSIONS

NO.	PIPE SIZES	a	b	c	d	e	f
1	18"-24"	4'-5½"	4'-5½"	4'-2"	4'-2"	3'-6½"	2'-5"
2	27"-33"	4'-11⅝"	4'-11⅝"	5'-1"	5'-1"	3'-6⅜"	2'-8"
3	36"-42"	5'-5⅝"	5'-5⅝"	5'-11¼"	5'-11¼"	3'-6⅜"	2'-11"
4	48"-54"	6'-1¾"	6'-1¾"	7'-1¼"	7'-1¼"	3'-6½"	3'-3"
5	60"-66"	6'-9⅞"	5'-9⅞"	8'-3¼"	8'-3¼"	3'-6½"	3'-7"
6	72"-78"	7'-6"	7'-6"	9'-5¼"	9'-5¼"	3'-6½"	3'-11
7	84"-96"	8'-6⅛"	8'-6⅛"	11'-2¼"	11'-2¼"	3'-6½"	4'-5½"

GENERAL NOTES:

(A) All construction shall be in accordance with the standard specifications of the TOWN OF HICKORY CREEK, which has also adopted the Fourth Edition of the "Standard Specifications for Public Works Construction - North Central Texas" herein referred to as "COG" specifications. Copies may be obtained from the North Central Texas Council of Governments, 616 Six Flags Drive, Suite 200, Arlington, Texas 76005-5888. (817) 640-3300.

(B) All manholes shall be poured in place. Precast junction boxes or manholes are not allowed.

(C) Concrete shall be made with a minimum of 5 sacks of cement and have a minimum compressive strength of 3,600 PSI at 28 days.

(D) All reinforcing steel shall be new, neat, billet-steel per ASTM designation A-615, Grade 60, and shall be detailed and placed per ACI Manuals SP-88 and 318, latest additions. All reinforcing steel shall have minimum 15 inch lap splices, unless noted otherwise on the plans.

(E) The Contractor shall use a liquid membrane-forming curing compound per COG Item 303.2.13.1.1 specifications.

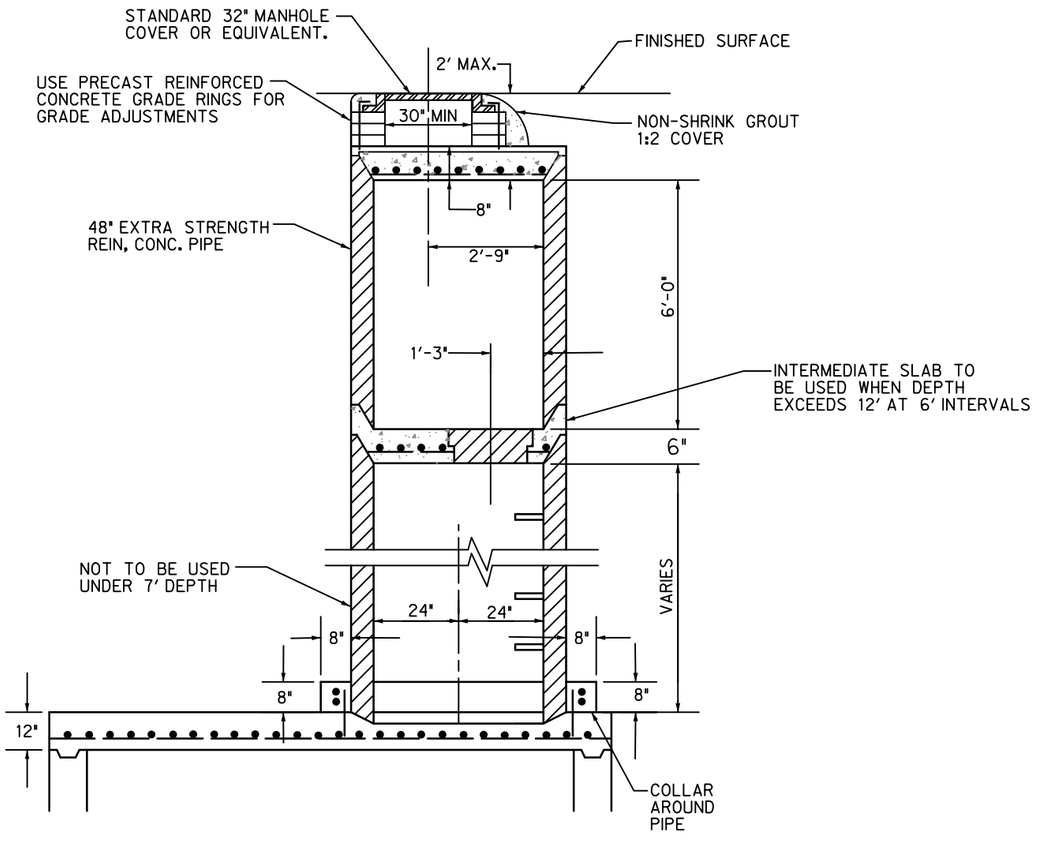
(F) Light broom finish required on all exposed manhole tops.

(G) Manhole steps, frame and cover shall be installed as per the details on this sheet.

(H) Staked manhole extension shall be installed, where specified on the plans and as per the details on this sheet.

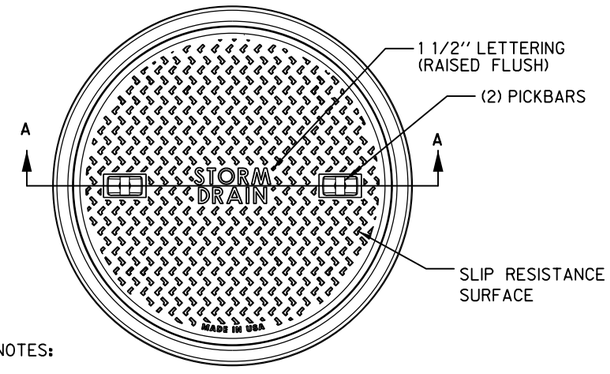
(I) Manholes shall be constructed per details on this sheet and COG Item 502.1.4 specifications.

(J) the clear opening for the manhole shall be a minimum of 30-inches in diameter per Texas Administrative Code TAC 217.55.f.1.A



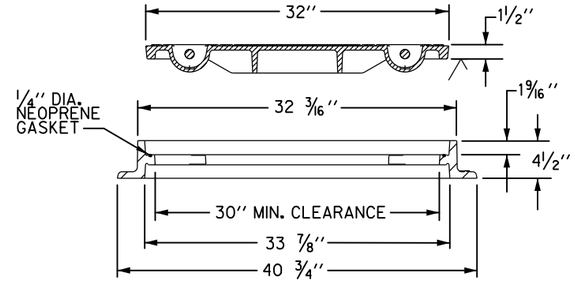
STACKED JUNCTION BOX EXTENSION

N.T.S.



NOTES:

1. COVER SHALL BE DUCTILE IRON ASTM A536 FRAME SHALL BE CAST IRON ASTM A48 CL35B.
2. MANHOLE COVER AND FRAME SHALL HAVE A MINIMUM TOTAL WEIGHT OF 300 POUNDS.
3. MANHOLE FRAME SHALL HAVE A MINIMUM CLEAR OPENING OF 30".
4. MANHOLE COVER AND FRAME SHALL HAVE MACHINED SURFACES WHERE SHOWN.



SECTION A-A

STANDARD 32" RING & COVER

N.T.S.

CERTIFICATION:

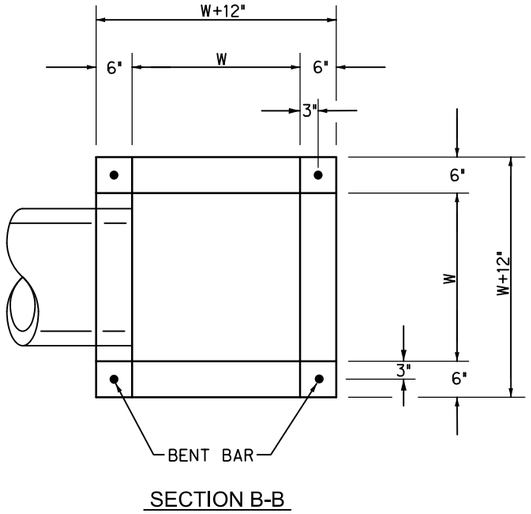
THIS TOWN OF HICKORY CREEK STANDARD DETAIL SHEET IS AUTHORIZED FOR USE IN THIS PROJECT BY THE ENGINEER WHOSE SEAL APPEARS ON THIS SHEET. MODIFICATIONS TO THE STANDARD DETAILS SHALL BE NOTED ON THIS SHEET AND SHALL COMPLY WITH THE TOWN'S ORDINANCES, STATE, AND FEDERAL REGULATIONS.

STORM DRAIN STANDARD DETAILS

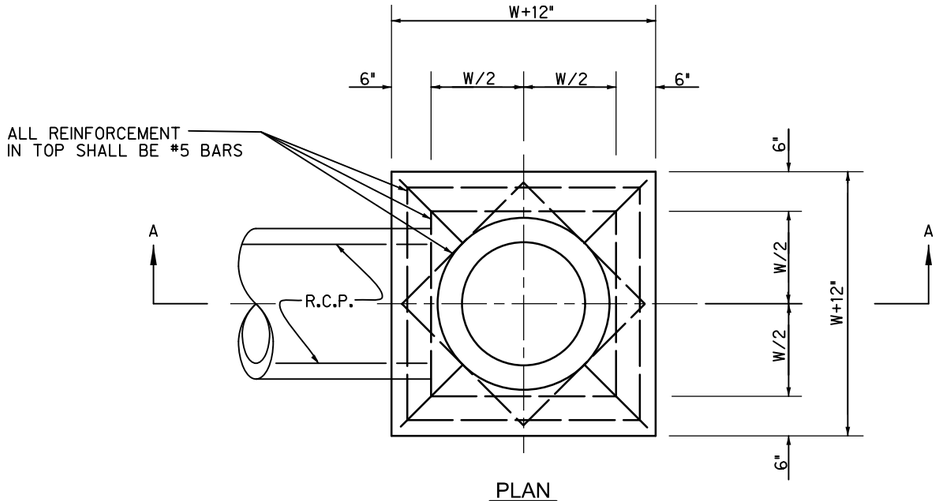
JUNCTION BOX DETAILS (SHEET 2 OF 2)

TOWN OF HICKORY CREEK
DENTON COUNTY, TEXAS

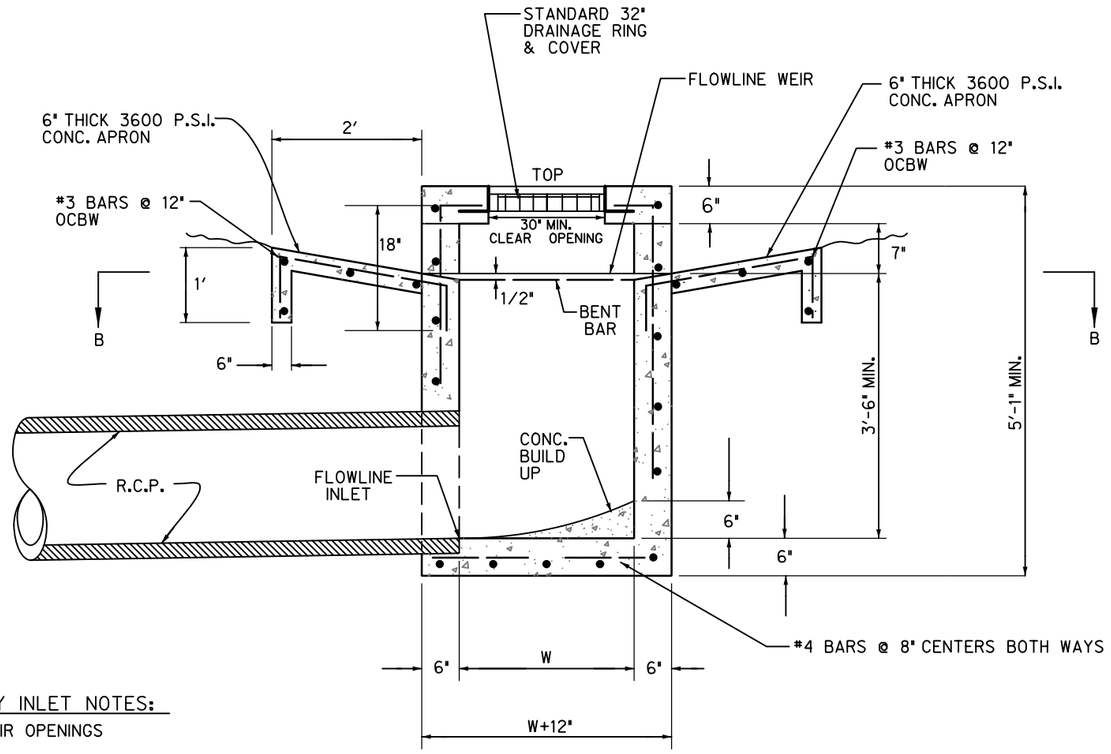
DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
HALFF	HALFF	HALFF	OCT 2012	N.T.S.	SD-5	—



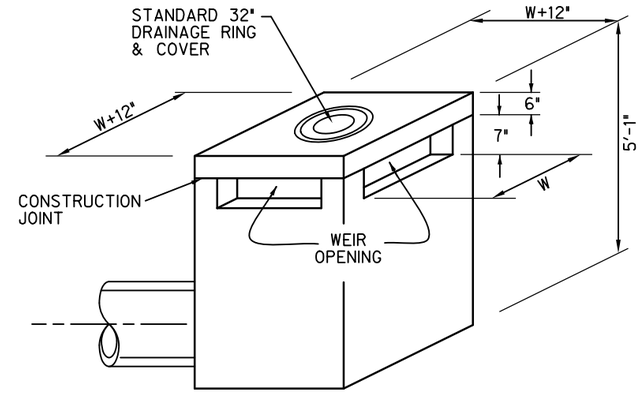
SECTION B-B



PLAN



SECTION A-A



ISOMETRIC DETAIL

TYPE Y AND SPECIAL TYPE Y INLET NOTES:

1. SPECIAL TYPE Y INLET HAS WEIR OPENINGS REQUIRED ON TWO SIDES.
2. TYPE Y INLET HAS WEIR OPENINGS REQUIRED ON FOUR SIDES.
3. THE MINIMUM OPENINGS FOR TYPE Y AND SPECIAL TYPE Y INLETS IS W=3 FEET
4. ALL REINFORCING SHALL BE WITH #4 BARS @ 12 INCH CENTERS, EXCEPT IN TOP.

TYPE Y & SPECIAL TYPE Y INLET

N.T.S.

NOTE: MINIMUM DIMENSION FOR "W" = 36 INCHES

CERTIFICATION:

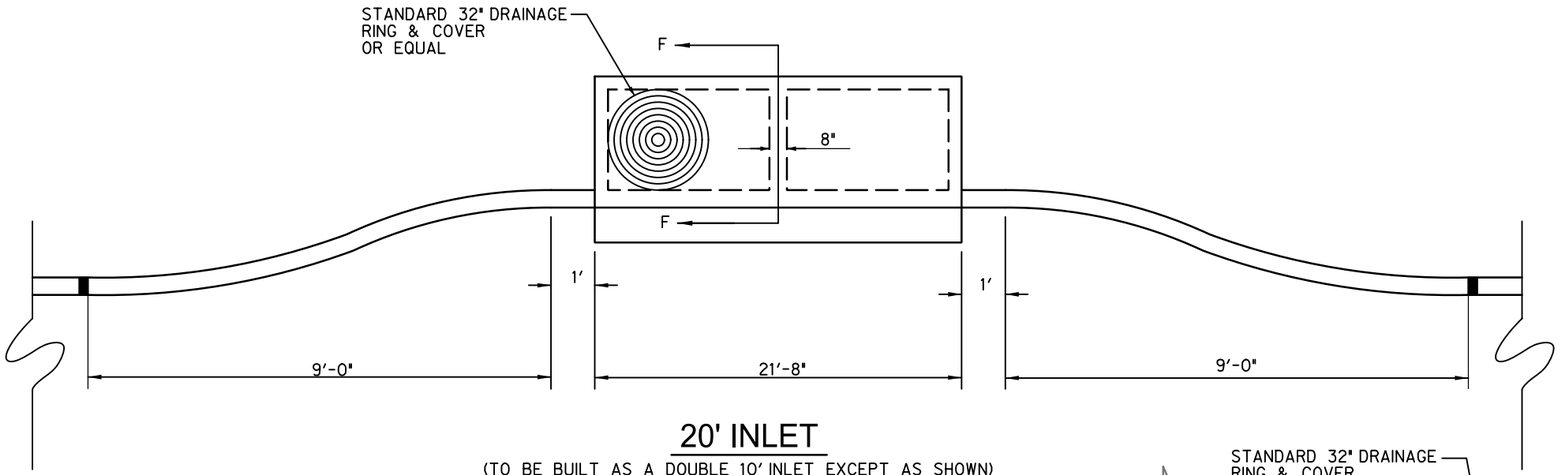
THIS TOWN OF HICKORY CREEK STANDARD DETAIL SHEET IS AUTHORIZED FOR USE IN THIS PROJECT BY THE ENGINEER WHOSE SEAL APPEARS ON THIS SHEET. MODIFICATIONS TO THE STANDARD DETAILS SHALL BE NOTED ON THIS SHEET AND SHALL COMPLY WITH THE TOWN'S ORDINANCES, STATE, AND FEDERAL REGULATIONS.

STORM DRAIN STANDARD DETAILS

INLETS
(SHEET 1 OF 3)

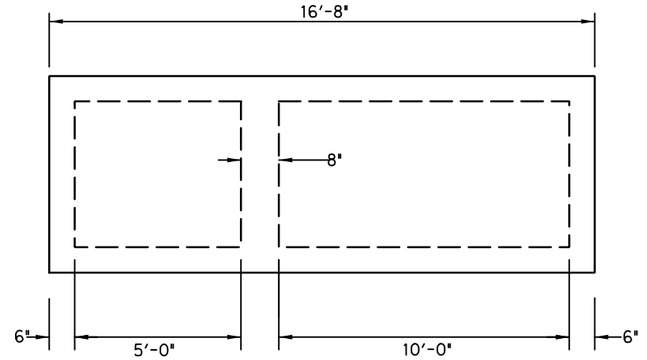
TOWN OF HICKORY CREEK
DENTON COUNTY, TEXAS

DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
HALFF	HALFF	HALFF	OCT 2012	N.T.S.	SD-6	



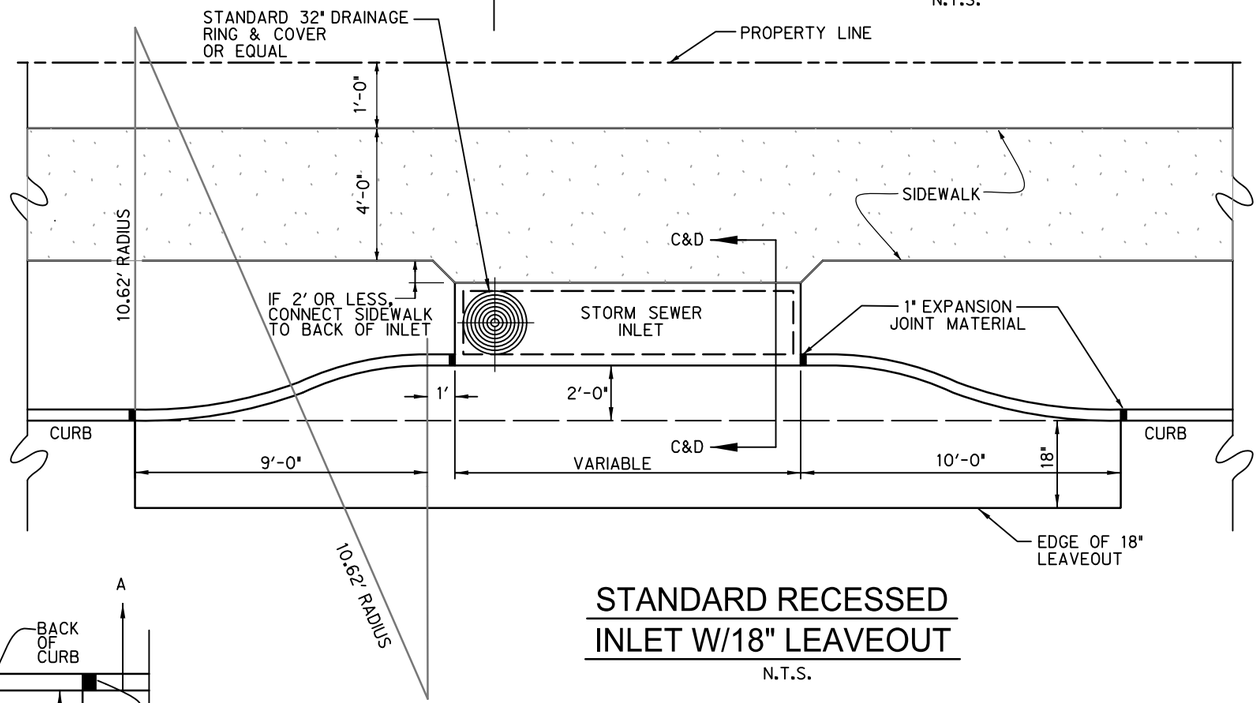
20' INLET

(TO BE BUILT AS A DOUBLE 10' INLET EXCEPT AS SHOWN)
N.T.S.



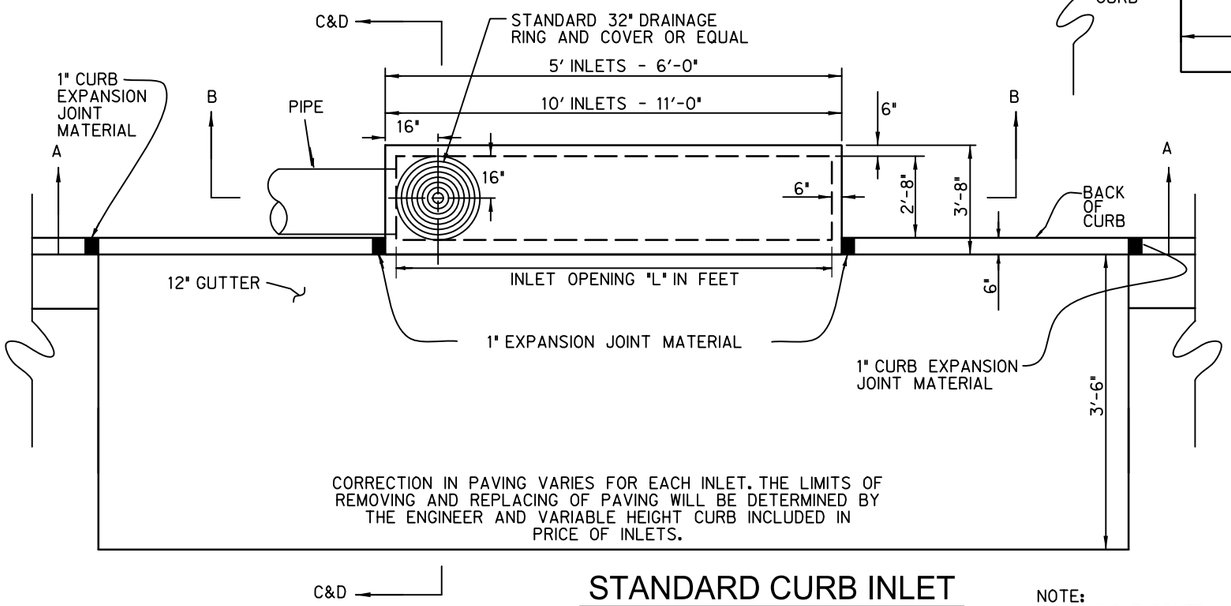
15' INLET

N.T.S.



STANDARD RECESSED
INLET W/18" LEAVEOUT

N.T.S.



STANDARD CURB INLET
W/36" LEAVEOUT

N.T.S.

NOTE:
1. MANHOLE COVER AND NECK SHALL HAVE A MINIMUM CLEAR OPENING OF 30".

CERTIFICATION:
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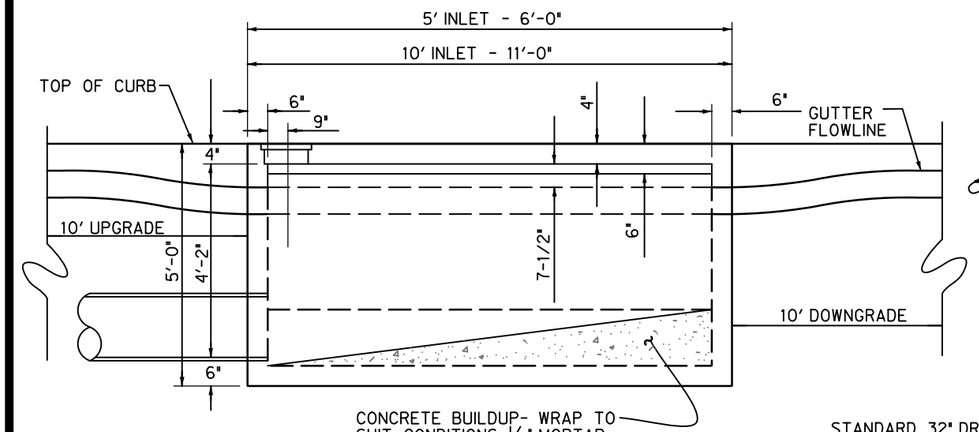
STORM DRAIN STANDARD DETAILS

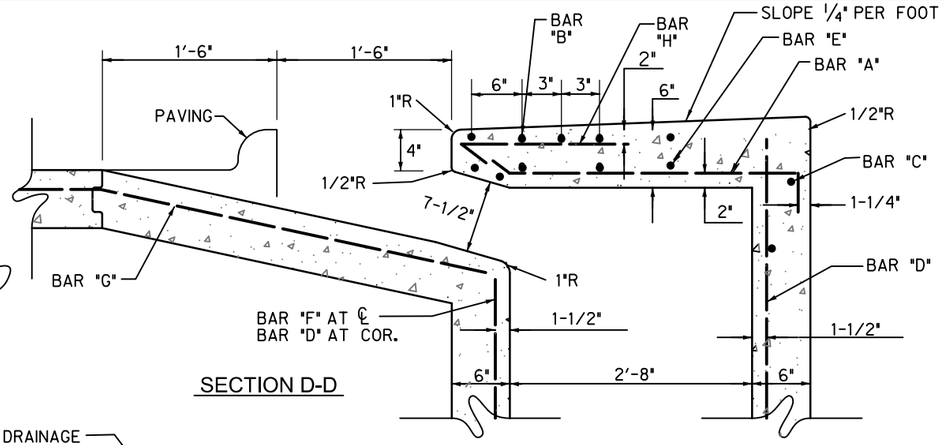
INLETS
(SHEET 2 OF 3)

TOWN OF HICKORY CREEK
DENTON COUNTY, TEXAS

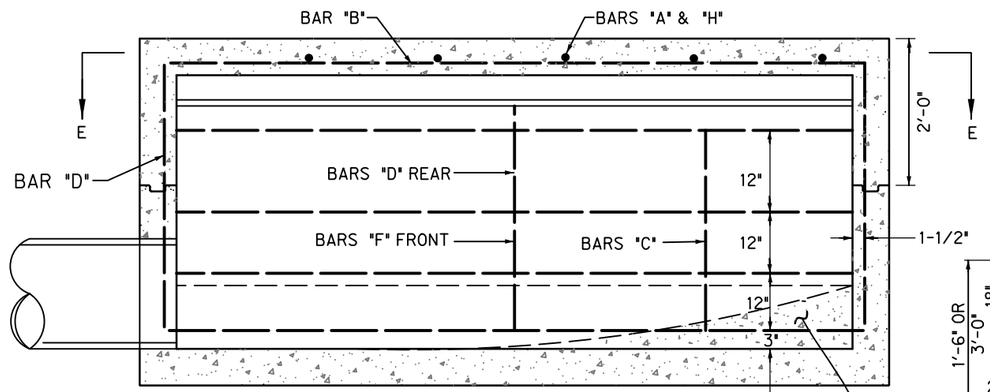
DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
HALFF	HALFF	HALFF	OCT 2012	N.T.S.	SD-7	



SECTION A-A



SECTION D-D



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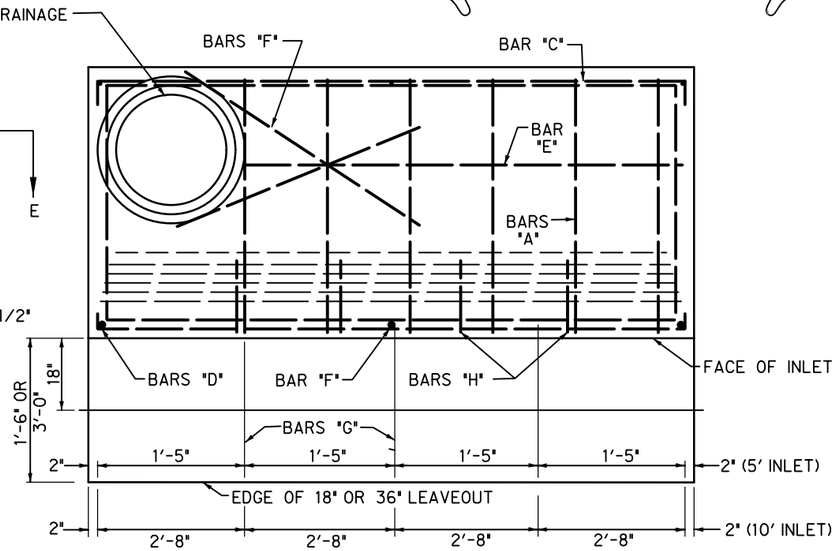
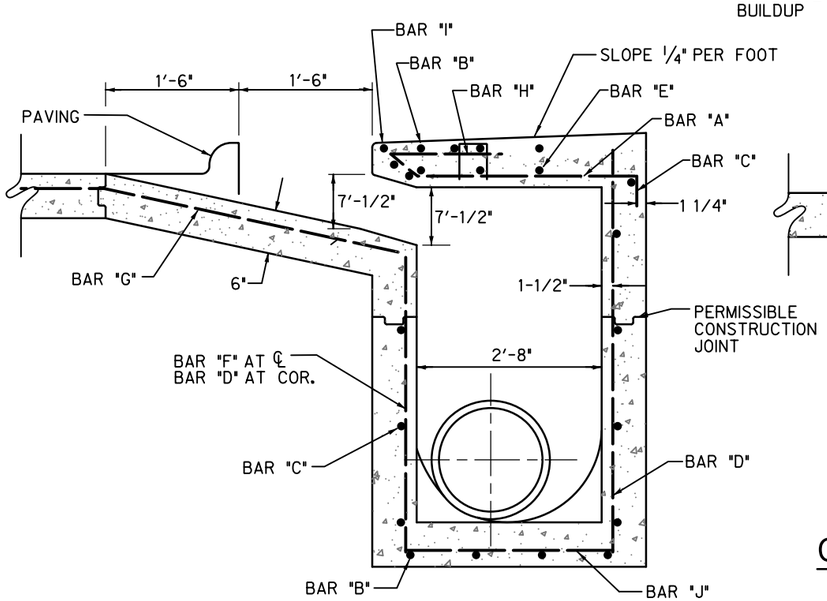
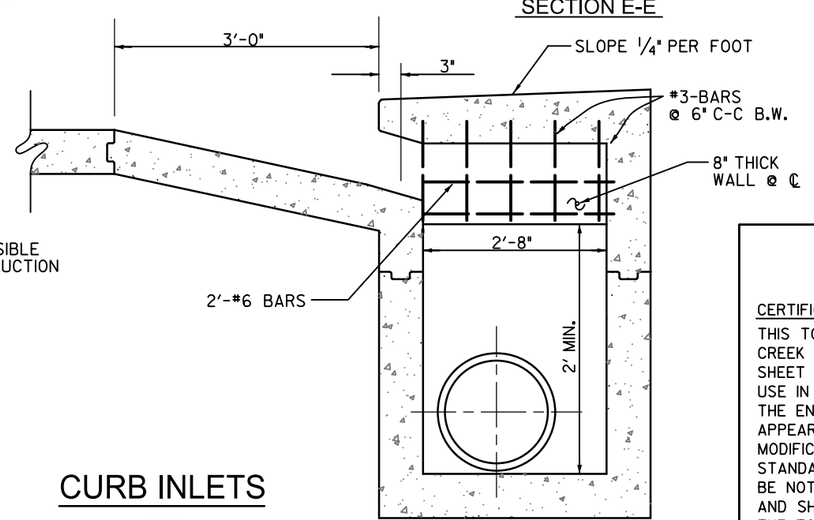


SECTION E-E



SECTION C-C



SECTION F-F

CURB INLETS

N.T.S.

BAR	DESCRIPTION	
A	6" 2'-9" 2" 3"	5' INLET -6 NO. 4 10' INLET -9 NO. 4
B	5' INLET- 5'-8" 10' INLET-10'-8"	5' INLET -12 NO. 4 10' INLET -13 NO. 4
C	6" 5' INLET-5'-8" 10' INLET-10'-8"	5' INLET -8 NO. 4 10' INLET -8 NO. 4
D	4'-8"	5' INLET -5 NO. 4 10' INLET -7 NO. 4
E	5' INLET-3'-10" 10' INLET 8-10"	5' INLET -1 NO. 3 10' INLET -1 NO. 3
BAR	**DESCRIPTION**	
F	3'-6"	5' INLET -3 NO. 4 10' INLET -4 NO. 4
G	3'-0"	5' INLET -5 NO. 3 10' INLET -7 NO. 3
H	3" 1'-0"	5' INLET -6 NO. 4 10' INLET -9 NO. 4
I	5' INLET-5'-8" 10' INLET-10'-8"	5' INLET -1 NO. 3 10' INLET -1 NO. 3
J	2'-10"	5' INLET -6 NO. 4 10' INLET -11 NO. 4

REINFORCING STEEL SCHEDULE

N.T.S.

CERTIFICATION:

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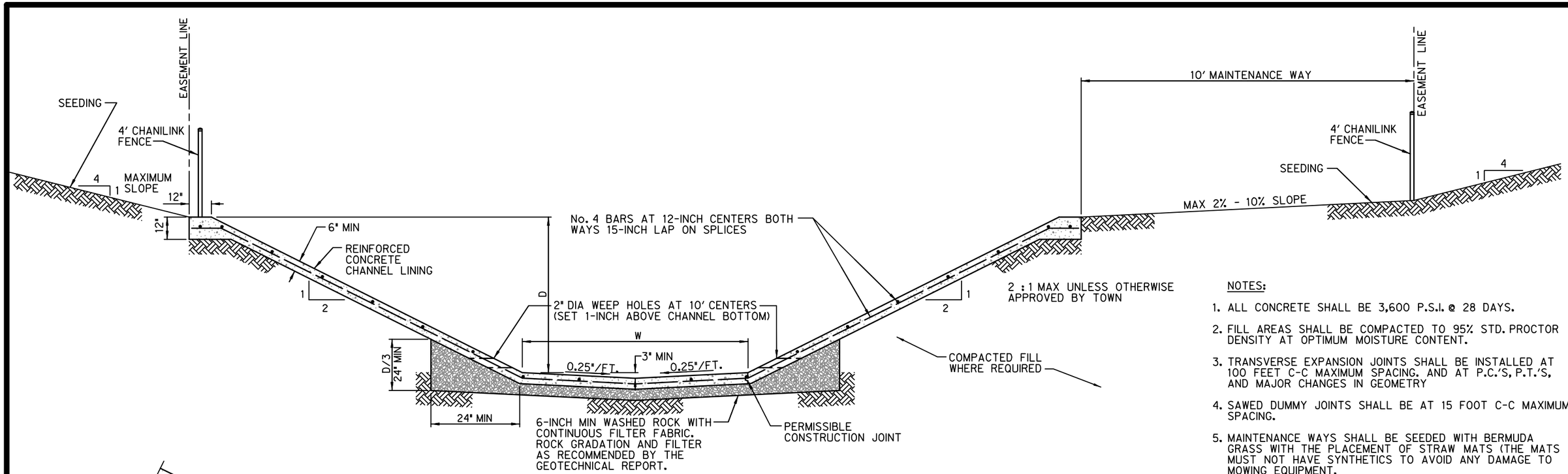
STORM DRAIN STANDARD DETAILS

INLETS
(SHEET 3 OF 3)

TOWN OF HICKORY CREEK
DENTON COUNTY, TEXAS

DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
HALFF	HALFF	HALFF	OCT 2012	N.T.S.	SD-8	___

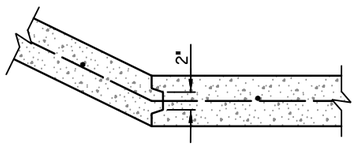


REINFORCED CONCRETE CHANNEL SECTION

NOT TO SCALE

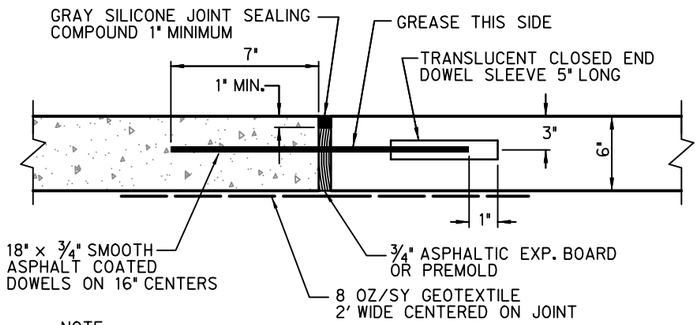
NOTES:

1. ALL CONCRETE SHALL BE 3,600 P.S.I. @ 28 DAYS.
2. FILL AREAS SHALL BE COMPACTED TO 95% STD. PROCTOR DENSITY AT OPTIMUM MOISTURE CONTENT.
3. TRANSVERSE EXPANSION JOINTS SHALL BE INSTALLED AT 100 FEET C-C MAXIMUM SPACING, AND AT P.C.'S, P.T.'S, AND MAJOR CHANGES IN GEOMETRY
4. SAWED DUMMY JOINTS SHALL BE AT 15 FOOT C-C MAXIMUM SPACING.
5. MAINTENANCE WAYS SHALL BE SEEDED WITH BERMUDA GRASS WITH THE PLACEMENT OF STRAW MATS (THE MATS MUST NOT HAVE SYNTHETICS TO AVOID ANY DAMAGE TO MOWING EQUIPMENT.



CONSTRUCTION JOINT

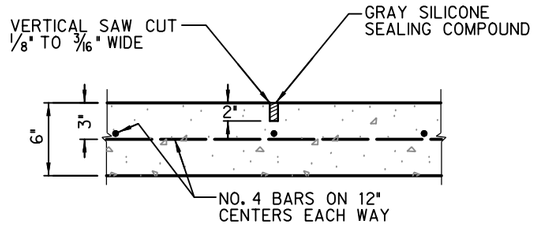
NOT TO SCALE



NOTE:
SLEEVES FOR DOWELS SHALL HAVE AN INSIDE DIAMETER OF 1/16-INCH GREATER THAN THE DIAMETER OF THE DOWELS AND SHALL BE APPROVED BY THE ENGINEER PRIOR TO USE.

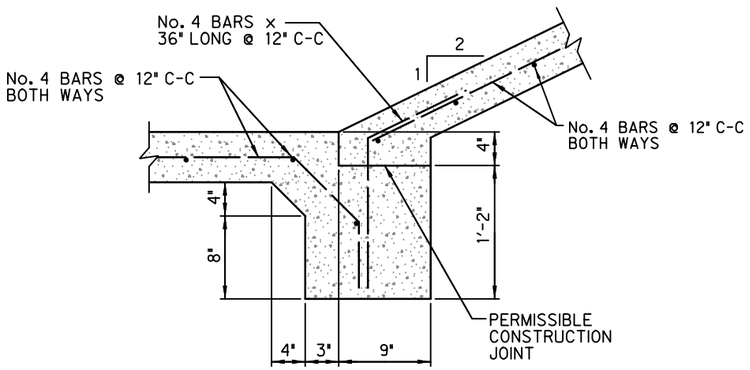
TRANSVERSE EXPANSION JOINT

NOT TO SCALE



SAWED DUMMY JOINT

NOT TO SCALE



ALTERNATE CONSTRUCTION JOINT

NOT TO SCALE

CERTIFICATION:
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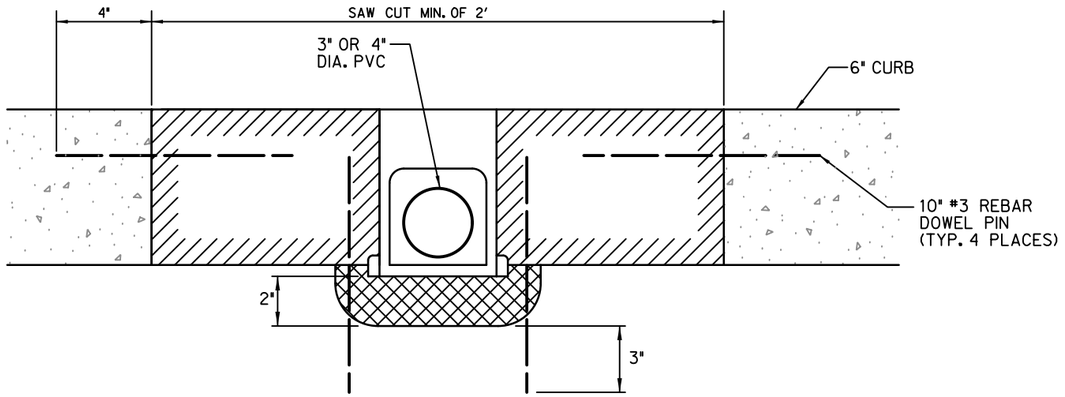
STORM DRAIN STANDARD DETAILS

FULL CHANNEL LINING CONCRETE REINFORCED

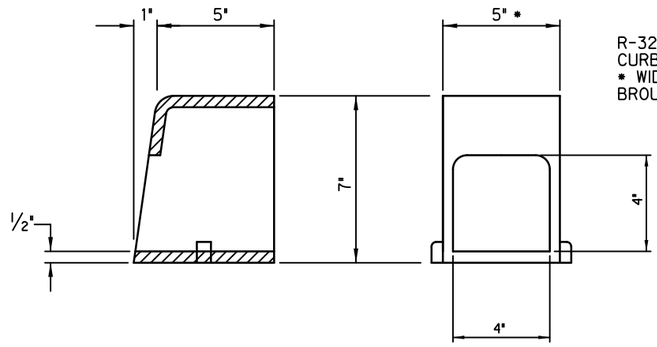
TOWN OF HICKORY CREEK
DENTON COUNTY, TEXAS

DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
HALFF	HALFF	HALFF	OCT 2012	N.T.S.	SD-9	—

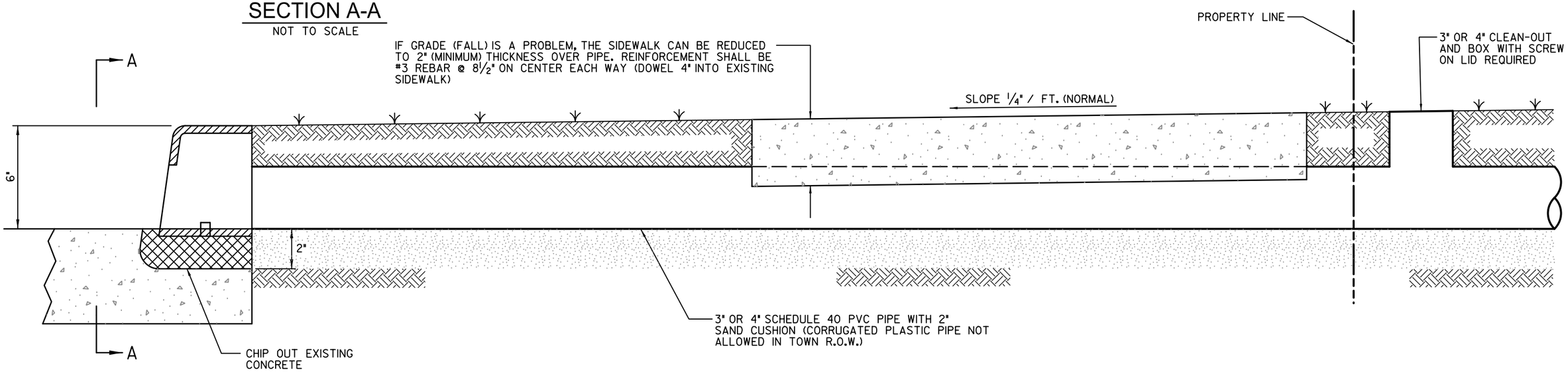


SECTION A-A

NOT TO SCALE

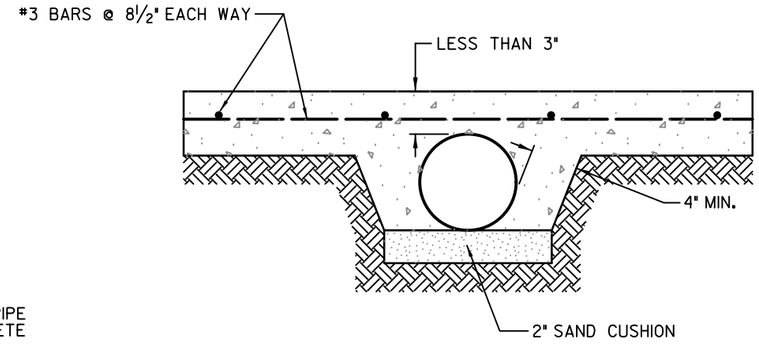


R-3262 NEENAH STORM WATER
CURB OPENINGS (OR APPROVED EQUAL)
* WIDTH CAN VARY WHEN MORE THAN ONE PIPE IS
BROUGHT THROUGH THE CURB



STORM WATER THROUGH CURB DETAIL

NOT TO SCALE



CONCRETE ENCASED DETAIL

(REQUIRED WHEN LESS THAN 3" CONCRETE OVER PIPE)

NOT TO SCALE

NOTES:

1. REMOVE AND REPLACE ONE 5 FOOT SECTION OF SIDEWALK.
2. IF PIPE COMING FROM PRIVATE PROPERTY IS LARGER THAN 4" IN DIAMETER, A "MANIFOLD" WILL BE USED SO THAT ONLY 3-INCH OR 4-INCH PIPES WILL BE BROUGHT TO AND THROUGH THE SIDEWALK CURB.
3. IF THICKNESS OF SIDEWALK IS LESS THAN 3-INCHES OVER THE PIPE (I.E. WHEN SIDEWALK IS ADJACENT TO CURB), THEN USE CONCRETE ENCASED PIPE (SEE DETAIL).
4. THERE SHALL BE A DUMMY JOINT IN THE SIDEWALK AT CENTERLINE OF DRAIN PIPE.
5. ROOF DRAIN DISCHARGE TO CURB ALLOWED BY TOWN APPROVAL.

CERTIFICATION:

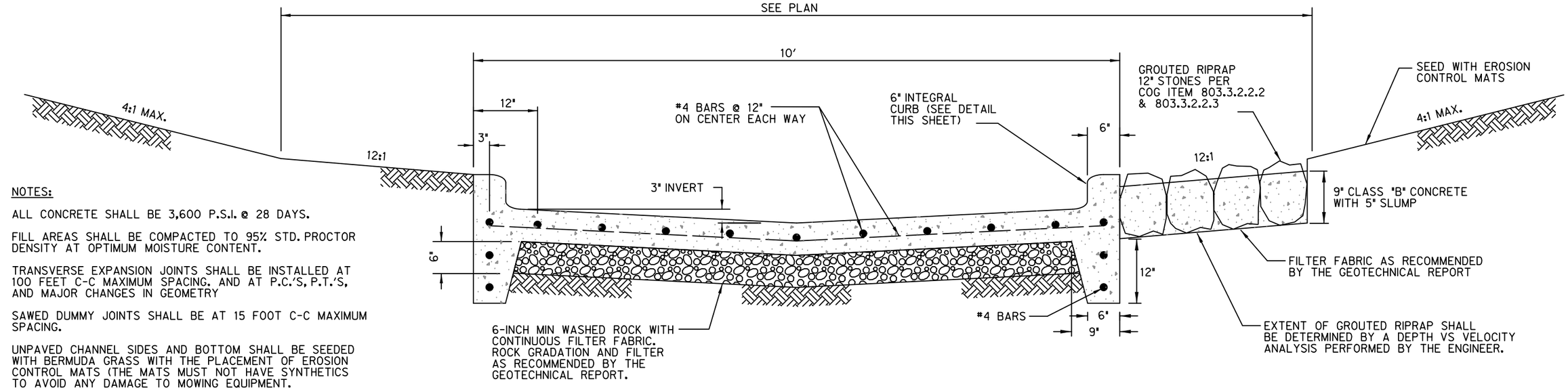
THIS TOWN OF HICKORY CREEK STANDARD DETAIL SHEET IS AUTHORIZED FOR USE IN THIS PROJECT BY THE ENGINEER WHOSE SEAL APPEARS ON THIS SHEET. MODIFICATIONS TO THE STANDARD DETAILS SHALL BE NOTED ON THIS SHEET AND SHALL COMPLY WITH THE TOWN'S ORDINANCES, STATE, AND FEDERAL REGULATIONS.

STORM DRAIN STANDARD DETAILS

ROOF DRAIN DISCHARGE TO CURB

TOWN OF HICKORY CREEK
DENTON COUNTY, TEXAS

DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
HALFF	HALFF	HALFF	OCT 2012	N.T.S.	SD-10	—

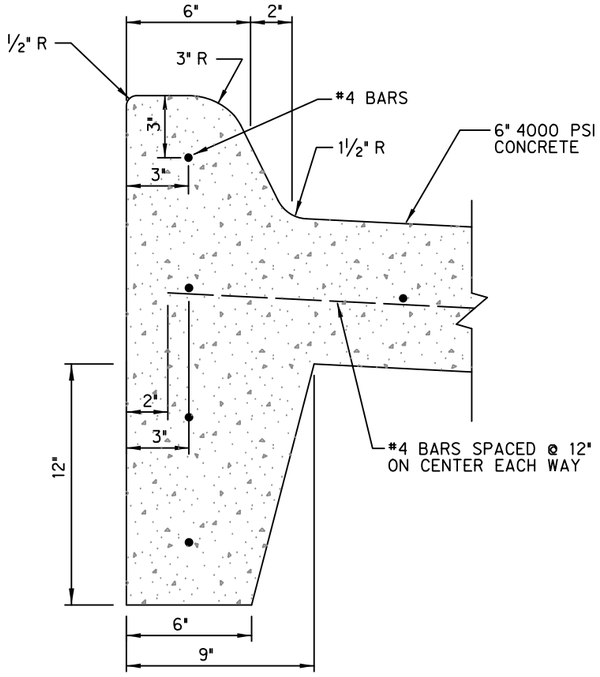


NOTES:

1. ALL CONCRETE SHALL BE 3,600 P.S.I. @ 28 DAYS.
2. FILL AREAS SHALL BE COMPACTED TO 95% STD. PROCTOR DENSITY AT OPTIMUM MOISTURE CONTENT.
3. TRANSVERSE EXPANSION JOINTS SHALL BE INSTALLED AT 100 FEET C-C MAXIMUM SPACING. AND AT P.C.'S, P.T.'S, AND MAJOR CHANGES IN GEOMETRY
4. SAWED DUMMY JOINTS SHALL BE AT 15 FOOT C-C MAXIMUM SPACING.
5. UNPAVED CHANNEL SIDES AND BOTTOM SHALL BE SEEDED WITH BERMUDA GRASS WITH THE PLACEMENT OF EROSION CONTROL MATS (THE MATS MUST NOT HAVE SYNTHETICS TO AVOID ANY DAMAGE TO MOWING EQUIPMENT.

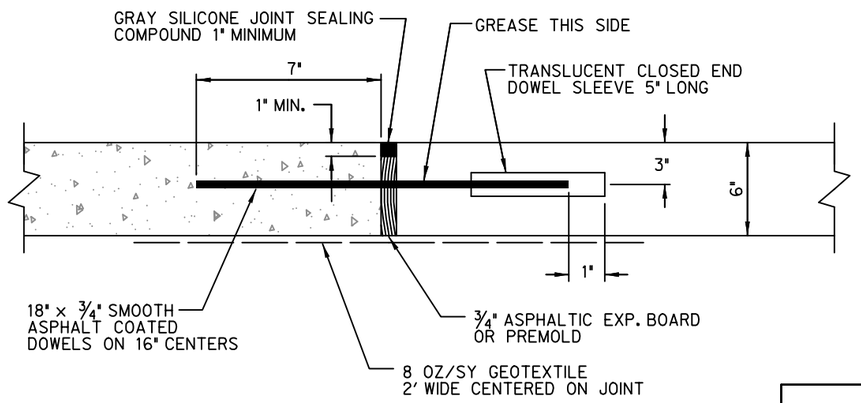
CONCRETE PILOT CHANNEL DETAIL

NOT TO SCALE



6" INTEGRAL CONCRETE CURB

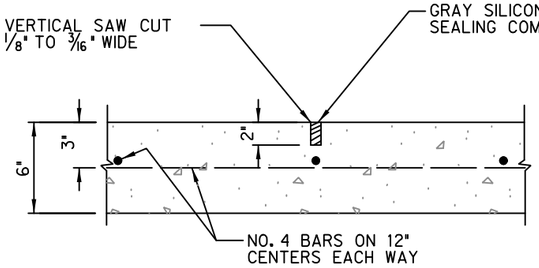
NOT TO SCALE



NOTE:
SLEEVES FOR DOWELS SHALL HAVE AN INSIDE DIAMETER OF 1/16-INCH GREATER THAN THE DIAMETER OF THE DOWELS AND SHALL BE APPROVED BY THE ENGINEER PRIOR TO USE.

TRANSVERSE EXPANSION JOINT

NOT TO SCALE



SAWED DUMMY JOINT

NOT TO SCALE

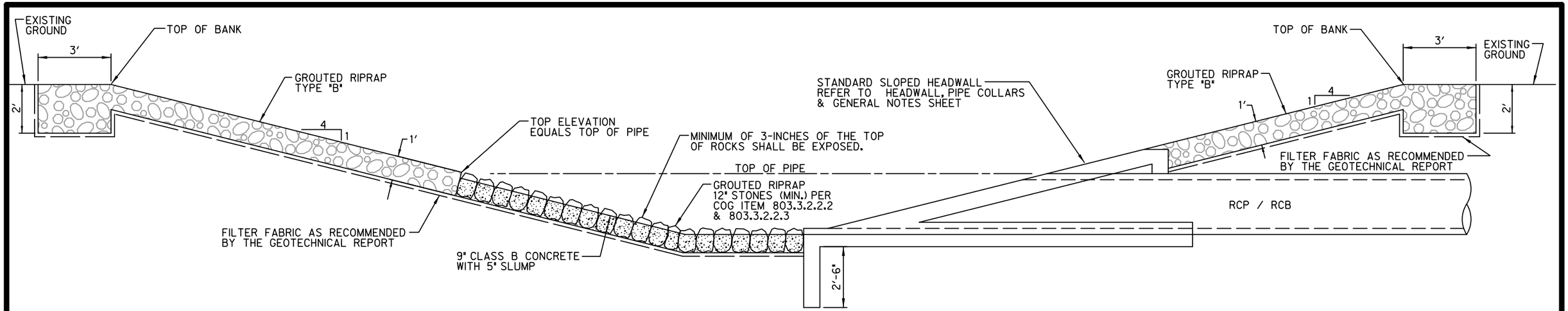
CERTIFICATION:
THIS TOWN OF HICKORY CREEK STANDARD DETAIL SHEET IS AUTHORIZED FOR USE IN THIS PROJECT BY THE ENGINEER WHOSE SEAL APPEARS ON THIS SHEET. MODIFICATIONS TO THE STANDARD DETAILS SHALL BE NOTED ON THIS SHEET AND SHALL COMPLY WITH THE TOWN'S ORDINANCES, STATE, AND FEDERAL REGULATIONS.

STORM DRAIN STANDARD DETAILS

TYPICAL PILOT CHANNEL

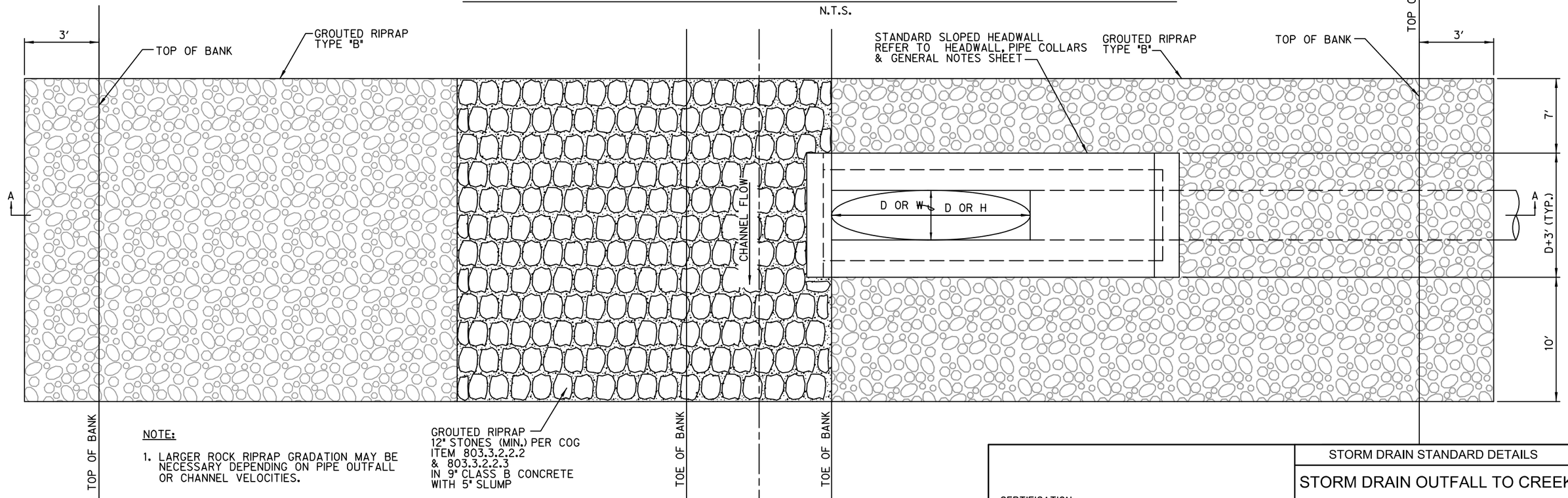
TOWN OF HICKORY CREEK
DENTON COUNTY, TEXAS

DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
HALFF	HALFF	HALFF	OCT 2012	N.T.S.	SD-11	



SECTION A-A
STORM DRAIN OUTFALL PERPENDICULAR TO CENTERLINE OF CREEK

N.T.S.



NOTE:

1. LARGER ROCK RIPRAP GRADATION MAY BE NECESSARY DEPENDING ON PIPE OUTFALL OR CHANNEL VELOCITIES.

STORM DRAIN OUTFALL PLAN VIEW

N.T.S.

CERTIFICATION:

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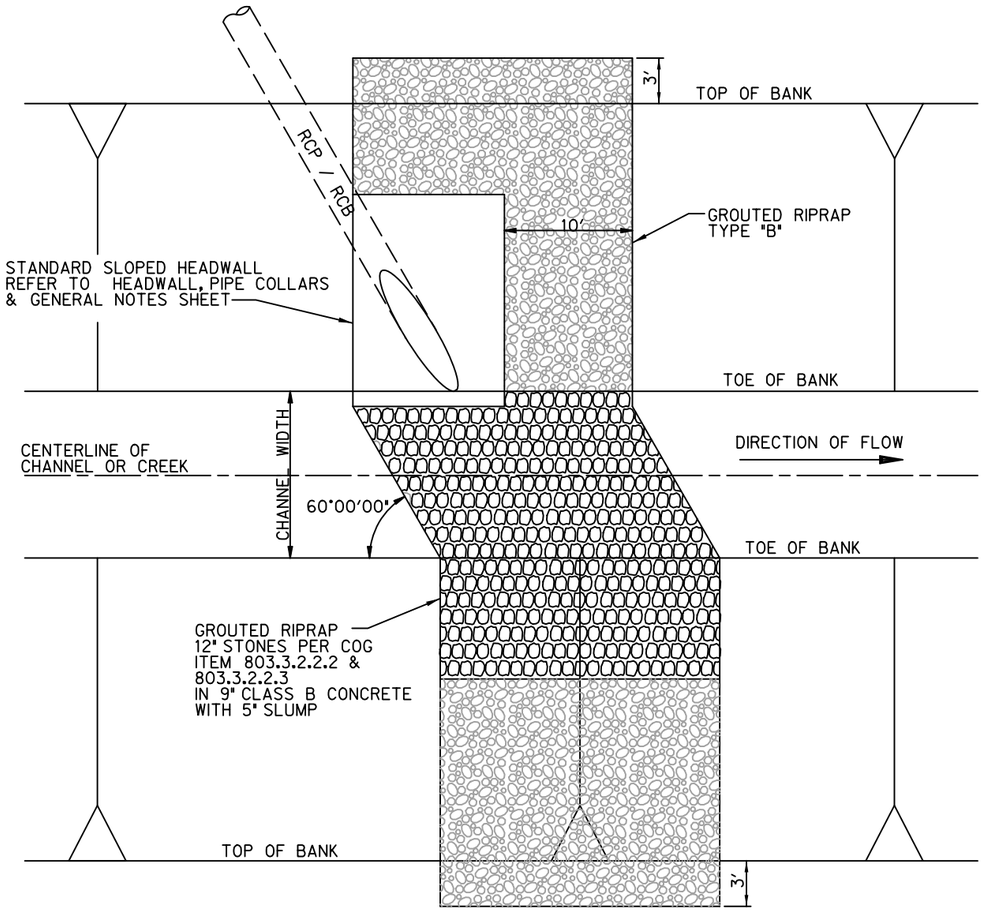
STORM DRAIN STANDARD DETAILS

STORM DRAIN OUTFALL TO CREEK

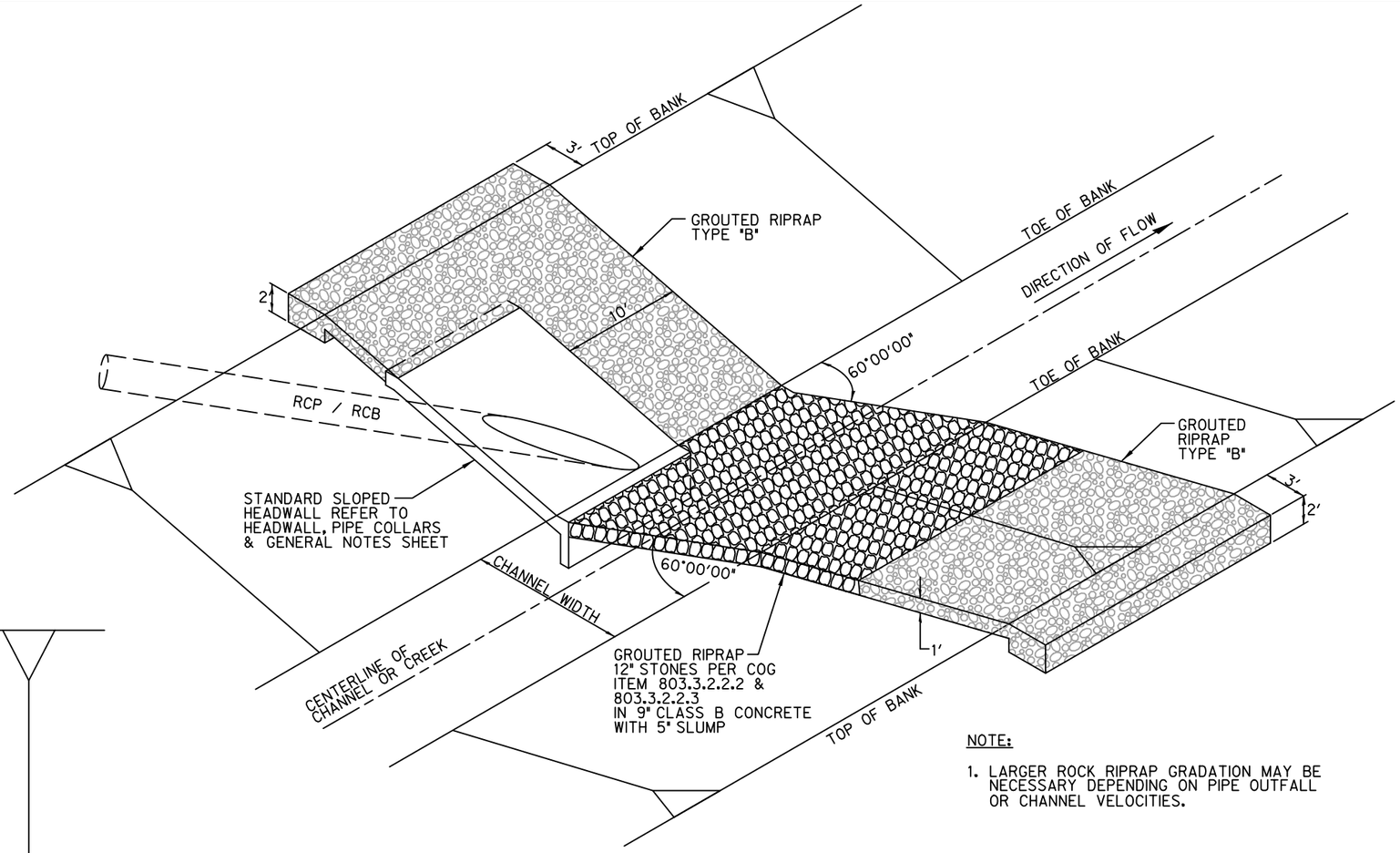
TOWN OF HICKORY CREEK
DENTON COUNTY, TEXAS

DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
HALFF	HALFF	HALFF	OCT 2012	N.T.S.	SD-12	—



STORM DRAIN OUTFALL PLAN VIEW

N.T.S.



ISOMETRIC STORM DRAIN OUTFALL VIEW

N.T.S.

NOTE:

1. LARGER ROCK RIPRAP GRADATION MAY BE NECESSARY DEPENDING ON PIPE OUTFALL OR CHANNEL VELOCITIES.

STORM DRAIN OUTFALL - 60 DEGREE ANGLE TO CREEK

CERTIFICATION:

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STORM DRAIN STANDARD DETAILS

STORM DRAIN OUTFALL
60 DEGREE ANGLE TO CREEK

TOWN OF HICKORY CREEK
DENTON COUNTY, TEXAS

DESIGN	DRAWN	CHECK	DATE	SCALE	FILE	NO.
HALFF	HALFF	HALFF	OCT 2012	N.T.S.	SD-13	—