

CITY OF DENISON, TEXAS

STANDARD CONSTRUCTION DETAILS



AUGUST 4th 2025

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GENERAL NOTES

- ALL MATERIALS MUST BE DOMESTICALLY SOURCED AND PRODUCED UNLESS OTHERWISE APPROVED BY THE PUBLIC WORKS DIRECTOR.
- ALL WATER AND SEWER SERVICES SHOULD BE INSTALLED IN NON-PAVED AREAS WHENEVER POSSIBLE. INSTALLATIONS IN PAVED AREAS SHOULD ONLY OCCUR WHEN UNAVOIDABLE, AND CARE SHOULD BE TAKEN TO MINIMIZE PLACEMENT IN DRIVEWAYS AND SIDEWALKS.

PAVING NOTES

- CONCRETE FOR ALL STREETS, ALLEYS, & DRIVEWAYS SHALL BE IN ACCORDANCE WITH NCTCOG CLASS "C" CONCRETE (3,600 P.S.I. COMPRESSIVE STRENGTH @ 28 DAYS). DRIVEWAYS SHALL BE HAND POURED. CONCRETE FOR ALL SIDEWALKS SHALL BE IN ACCORDANCE WITH NCTCOG CLASS "A" CONCRETE (3,000 COMPRESSIVE STRENGTH @ 28 DAYS).
- REINFORCING STEEL SHALL BE DEFORMED BARS NO. 3 ON 18 INCH CENTERS OR NO. 4 BARS ON 24 INCH CENTERS UNLESS OTHERWISE NOTED IN THE DETAILS. REINFORCING SHALL BE IN BOTH DIRECTIONS ON CENTER. REINFORCING STEEL SHALL BE IN ACCORDANCE WITH ASTM 615, 616 AND 617.
- ALL REINFORCING STEEL SHALL BE TIED (100%). REINFORCING STEEL SHALL BE SET ON PLASTIC CHAIRS. BAR LAPS BE MINIMUM 30 DIAMETERS.
- EXPANSION JOINTS SHALL BE SPACED EVERY 200 FEET AND AT ALL INTERSECTIONS. ALLEYS SHALL HAVE A MINIMUM OF TWO EXPANSION JOINTS.
- SAWED TRANSVERSE DUMMY JOINTS SHALL BE SPACED EVERY 20 FEET ON PAVING 8 INCHES OR THICKER AND EVERY 10 FEET FOR PAVING THICKNESS LESS THAN 8 INCHES SAWING SHALL OCCUR WITHIN 5 TO 12 HOURS AFTER THE POUR INCLUDING SEALING. OTHERWISE THE SECTION SHALL BE REMOVED AND LONGITUDINAL BUTT JOINT CONSTRUCTED.
- SUBGRADE UNDER PAVEMENTS SHALL BE A MINIMUM OF 8 INCHES OF EITHER HYDRATED LIME OR CEMENT TREATED SUBGRADE, WITH OPTIMUM CONTENT AND COMPACTION REQUIREMENTS AS RECOMMENDED BY THE GEOTECHNICAL DESIGN, AS WELL AS APPROVED BY THE PUBLIC WORKS DIRECTOR. CONTENT AND COMPACTION TESTS SHALL BE TAKEN ALONG THE EXCAVATION AT ALL CHANGES IN SOIL AND A MINIMUM OF 300 FEET DISTANCES. ALL TESTS SHALL BE COMPLETED BY AN INDEPENDENT LABORATORY APPROVED BY THE CITY AND PAID FOR BY THE CONTRACTOR.
- LIME TREATED SUBGRADE SHALL BE COMPACTED TO A DENSITY OF NOT LESS THAN 95 PERCENT OF THE MAXIMUM DENSITY AS DETERMINED BY ASTM D 698. MOISTURE CONTENT SHALL BE WITHIN -2 TO +4 OF OPTIMUM. DENSITY TEST RESULTS SHALL BE COMPLETED BY AN INDEPENDENT LABORATORY APPROVED BY THE CITY. ALL RESULTS SHALL BE PROVIDED TO THE CITY.
- LIME TRIMMINGS ARE NOT ACCEPTABLE FOR ANY USE.
- ALL FILL SHALL BE COMPACTED BY MECHANICAL METHODS. MAXIMUM LOOSE LIFT FOR COMPACTION SHALL BE 8 INCHES. ALL LIFTS SHALL BE TESTED FOR DENSITY BY AN INDEPENDENT LABORATORY APPROVED BY THE CITY. DENSITY REQUIREMENT SHALL BE AS SHOWN ON THE PLANS FOR THE TYPE OF MATERIAL CALLED FOR IN THE PLANS.
- ALL DISTURBED AREAS OF ROADWAY WORK SHALL HAVE GRASS ESTABLISHED IMMEDIATELY. GRASS SHALL MEET THE REQUIREMENTS OF ITEM 3.8, 3.9, 3.10 & 3.11 OF NCTCOG.
- ALL AREAS TO BE EXCAVATED OR FILLED SHALL HAVE EROSION CONTROL PLACED PRIOR TO COMMENCING EARTHWORK. EROSION CONTROL DEVICES SHALL BE MAINTAINED THROUGHOUT THE PROJECT IN ACCORDANCE WITH NCTCOG ITEM 3.12.
- ALL SIDEWALKS SHALL INCLUDE BARRIER FREE RAMPS AT INTERSECTING STREETS, ALLEYS, DRIVEWAYS, ETC. BARRIER FREE RAMPS SHALL MEET CURRENT ADA REQUIREMENTS AND BE APPROVED BY THE TEXAS LICENSING BOARD.
- SIDEWALKS SHALL BE DOWELED INTO PAVEMENT WHERE IT ABUTS DRIVEWAYS. REDWOOD EXPANSION JOINT MATERIAL SHALL BE USED AT THESE LOCATIONS.
- NO VEHICLES SHALL BE PERMITTED ON CONCRETE PAVEMENT WITHOUT APPROVAL FROM THE CITY. THE CITY WILL MAKE DETERMINATION BASED ON CONCRETE BREAK REPORT.
- SIDEWALKS REQUIRE 2-INCH SAND CUSHION ON SUBGRADE COMPACTED WITHIN 95% STANDARD PROCTOR DENSITY.
- POURS SHALL REQUIRE A PRE-POUR INSPECTION FOR FORMWORK, REINFORCEMENT AND GEOMETRY. VISUAL INSPECTIONS MAY BE MADE AFTER THE POUR TO ADDRESS TOOLED JOINTS, FINISH, SUBGRADE INTEGRITY, ETC.
- ENSURE THAT FLATWORK DOES NOT OBSCURE ABOVE-GROUND APPURTENANCES (I.E. VALVES, MH LIDS).
- EXPOSED AGGREGATE CONCRETE IS NOT ACCEPTABLE FOR SIDEWALK WITHIN PUBLIC RIGHT-OF-WAY.
- SIDEWALKS SHALL BE 5' WIDE MINIMUM WIDTH.

LINED CHANNELS

- CONSTRUCTION JOINT SHOWN IN DETAILS FOR CONVENIENCE ONLY, MONOLITHIC CONSTRUCTION MAY BE USED.
- ALL VISIBLE SURFACES SHALL BE A TROWEL FINISH.
- ALL REINFORCING STEEL SHALL BE 3/8" DIAMETER AND SPACED 12" CENTER TO CENTER BOTH WAYS UNLESS OTHERWISE SPECIFIED.
- IF WOOD FORMS ARE USED WITH CONSTRUCTION JOINT, THEY SHALL BE TWO, 2"x4", AND SHALL NOT BE REMOVED UNTIL CONCRETE ON SLOPES IS READY TO BE PLACE.
- ALL CONCRETE IN LINED CHANNEL SHALL BE NCTCOG CLASS "A" (MINIMUM 3,000 P.S.I.) CONCRETE.
- FLAT BOTTOM TO BE CONSTRUCTED WHEN CHANNEL WIDTH IS LESS THAN 12 FOOT.
- 3/4" CHAMFER ON ALL CONCRETE CORNERS.

STORM SEWER

- THE FLOOR OF THE EXCAVATION FOR INLET BOX MUST PROVIDE A FIRM, LEVEL BED FOR THE BASE SECTION TO REST UPON.
- A MINIMUM OF 6 INCHES OF 1" DIAMETER (MAXIMUM) ROCK OR GRAVEL SHALL BE USED TO PREPARE THE BEDDING TO FINAL GRADE OR IN LIEU OF THIS, AT LEAST 6 INCHES OF 2- SACK CEMENT STABILIZED SAND SHALL BE USED TO PREPARE THE BEDDING TO GRADE CEMENT STABILIZED-SAND SHALL BE ALLOWED TO SET BY KEEPING HOLE PUMPED DRY.
- AFTER PIPE HAS BEEN LAID ON PROPER BEDDING, BACKFILLING TO COMMENCE WITH 8' MAXIMUM LOOSE LIFTS MECHANICALLY COMPACTED TO 95% STANDARD PROCTOR UNDER ROADWAY OR 12' MAXIMUM LOOSE LIFT BEHIND CURB. MAXIMUM SIZE ROCK IN BACKFILL SHALL NOT EXCEED 4 INCHES IN DIAMETER.
- PRECAST INLETS MUST BE APPROVED BY THE CITY.
- CONCRETE TO BE MINIMUM 4,200 P.S.I.
- LOCKING DEVICE IS REQUIRED ON ALL STORM SEWER LIDS.
- "NO DUMPING" WARNING PLAQUE TO BE INSTALLED ON ALL STANDARD AND RECESSED INLETS.
- CONCRETE CAST-IN-PLACE INLETS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,200 PSI @ 28 DAYS.
- STORM DRAIN TILE SHALL BE PLACED IN THE CENTER OF THE INLET, 2 INCHES FROM THE EDGE OF OPENING AS SHOWN IN THE DRAWING USE PL-200 CONSTRUCTION ADHESIVE FOR APPLICATION. TILES CAN BE ORDERED FROM: CENTERLINE SUPPLY, INC., 425 JESSE STREET, GRAND PRAIRIE, TEXAS 75061-1141. 1-800-321-1731, METRO: 214-647-8300, FAX: 214-641-1221.
- EXISTING STORM SEWER PIPE AND/ OR LATERALS SHALL BE LOCATED PRIOR TO SETTING OF CONSTRUCTING INLET BOXES. IF ADJUSTMENT IN GRADE OF LATERAL IS REQUIRED, A REVISED DESIGN BY THE ENGINEER OF RECORD SHALL BE SUBMITTED TO THE CITY FOR APPROVAL.
- REINFORCED CONCRETE PIPE CLASS III MINIMUM.

SANITARY SEWER

- ALL SEWER LINES CROSSING POTABLE WATERLINES SHALL BE AS SHOWN IN THE PLANS AND MEET TCEQ REQUIREMENTS
- ALL SANITARY SEWER MAINS SHALL BE A MINIMUM OF 6" INSIDE DIAMETER. ALL SERVICE LINES SHALL BE A MINIMUM OF 4" INSIDE DIAMETER. PIPES 6 INCHES THROUGH 24 INCHES SHALL BE IN ACCORDANCE WITH ASTM D3034 WITH A MINIMUM SDR OF 26.
- PIPES LARGER THAN 24 INCHES SHALL BE CCFRPM, CENTRIFUGALLY CAST FIBER REINFORCED POLYMER MORTAR PIPE(HOBAS OR APPROVED EQUIVALENT) OR AS DIRECTED BY THE PUBLIC WORKS DIRECTOR. SHALL BE IN ACCORDANCE WITH ASTM STANDARDS D3262, D4161, D2412, D3681, D638.
- MANHOLES SHALL BE CAST IN PLACE OR PRECAST. ALL MANHOLES SHALL BE WATER TIGHT. ALL RING AND COVERS SHALL INCLUDE AN INTERNAL CHIMNEY SEAL.
- ALL PIPE OPENINGS IN MANHOLES SHALL INCLUDE COUPLINGS WITH "O" RING RUBBER GASKETS.
- STUBOUTS OUT OF MANHOLES SHALL BE FITTED WITH A STOPPER AND CAP. STUBOUTS SHALL BE A MINIMUM OF 5 FEET FROM MANHOLE AND BE SUPPORTED BY A CONCRETE CRADLE.
- ALL DROP MANHOLES SHALL BE OF THE EXTERNAL TYPE.
- MANHOLES SHALL BE VENTED IN ACCORDANCE WITH TCEQ REQUIREMENTS.
- ALL SANITARY SEWER PIPE SHALL BE TESTED (NCTCOG ITEM 6.7.2) AFTER CONSTRUCTION. TESTING SHALL INCLUDE PRESSURE TESTING, MANDREL TEST (TCEQ REQUIRED) AND COLOR TV INSPECTION. COLOR TV INSPECTION SHALL BE COMPLETED IN PRESENCE OF CITY REPRESENTATIVE AND THE ORIGINAL VHS FORMATTED TAPE SHALL BE GIVEN TO THE CITY AT THE COMPLETION OF THE INSPECTION.
- MANHOLES SHALL BE VACUUM TESTED IN THE PRESENCE OF THE CITY REPRESENTATIVE.

WATER

- ALL WATER LINE CROSSINGS OF SANITARY SEWER LINES SHALL BE AS SHOWN IN THE PLANS AND MEET TCEQ REQUIREMENTS.
- PIPES 12 INCHES IN DIAMETER AND SMALLER SHALL BE POLYVINYL CHLORIDE (P.V.C.) MEETING THE REQUIREMENTS OF AWWA C900 DR-18.
- FOR PIPES LARGER THAN 12 INCHES IN DIAMETER, THE PIPE SHALL BE POLYVINYL CHLORIDE PIPE UP TO 18 INCHES MEETING THE REQUIREMENTS OF AWWA C900 DR-14 305 P.S.I. RATED PIPE.
- ALL VALVES ON PIPES 12 INCHES AND SMALLER SHALL BE RESILIENT SEALED WEDGE VALVES (AWWA C509).
- ALL VALVES ON PIPES LARGER THAN 12 INCHES BUT SMALLER THAN 30 INCHES SHALL BE BUTTERFLY VALVES (AWWA C504) OR WEDGE VALVES (AWWA C509).
- ALL VALVES ON PIPES 30 INCHES AND LARGER SHALL BE BUTTERFLY VALVES (AWWA C504).
- EMBEDMENT SHALL BE AS SHOWN IN THE PLANS. BACKFILL WITHIN THE LIMITS OF EXISTING AND PROPOSED PAVEMENT SHALL BE COMPACTED TO 95% STANDARD PROCTOR. OUTSIDE PAVEMENT (EXISTING OR PROPOSED) SHALL BE COMPACTED TO MINIMUM OF 95% STANDARD PROCTOR ALL COMPACTION SHALL BE BY MECHANICAL METHODS.
- WATER LINES SHALL BE PRESSURE TESTEDCOG ITEM 6.7.3..
- ALL HORIZONTAL AND VERTICAL BENDS SHALL BE BLOCKED USING 3,000 PSI COMMERCIAL CONCRETE. NO HAND MIXING OF SAID CONCRETE SHALL BE PERFORMED ON SITE.
- ALL SADDLES SHALL BE MUELLER/HYMAX BR2B 4"-16" SADDLES, FORD METER 202B DOUBLE STRAP BRASS SADDLE, OR APPROVED EQUIVALENT.
- THE CONTRACTOR IS REQUIRED TO COORDINATE AND SCHEDULE A FIRE HYDRANT PRESSURE TEST AND A WATER LINE DISINFECTION TEST WITH THE CITY AFTER ANY WATER DISTRIBUTION RELATED WORK. THIS TEST MUST BE CONDUCTED IN ACCORDANCE WITH TCEQ WATER DISTRIBUTION SYSTEM GENERAL CONSTRUCTION NOTES.
- ALL WATER VALVES, BONNETS, AND HYDRANTS MUST BE IDENTIFIED WITH SAW-CUT CURB MARKINGS TO INDICATE THEIR LOCATION AND DESIGNATION ON EXISTING CURBS. ADDITIONALLY, THESE MARKINGS MUST BE PAINTED ACCORDING TO CITY STANDARDS TO ENSURE CLEAR VISIBILITY FROM THE ROADWAY. NEW CURB INSTALLATIONS MUST BE STAMPED WITH A 3" X 3" MARKING INDICATING THE UTILITY AND PAINTED ACCORDINGLY.

- COLOR SPECIFICATIONS FOR UTILITY MARKINGS ARE AS FOLLOWS:
 WATER: TNEMEC SERIES 2H HI-BUILD GLOSS TRUE BLUE SAFETY
 FIRE LINES: TNEMEC 2H HI-BUILD GLOSS CANDY APPLE RED SAFETY
 GAS: TNEMEC 2H HI-BUILD GLOSS LEMON YELLOW SAFETY
 ELECTRIC, FIBER OPTIC, AND TELECOM: TNEMEC 2H HI-BUILD GLOSS TANGERINE ORANGE SAFETY
 SANITARY SEWER: TNEMEC 2H HI-BUILD GLOSS SPEARMINT GREEN

SCREENING WALLS

- CONCRETE - MINIMUM COMPRESSIVE STRENGTH OF 3,000 P.S.I. @28 DAYS.
- REINFORCEMENT - ASTM A-36.
- MASONRY - COMPRESSIVE STRENGTH SHALL BE PRESCRIBED IN ITEM 2.3.6 SPECIAL PROVISIONS.
- WIND LOAD FOR DESIGN - 20 P.S.F.
- PIER BEARING STRESSES - SEE BRICK SCREENING WALL NOTES.
- MORTAR - TYPE "S".
- PROVIDE CONTROL JOINTS AT 50 FEET.
- PROVIDE EXPANSION JOINTS AT 200 FEET CENTER MAXIMUM.
- PROVIDE PIER WITH MINIMUM 9 FOOT W/ 24 INCH DIAMETER BELL IN CLAY OR OTHER MATERIAL EXCEPT BLUE SHALE, 6 FOOT MINIMUM WITH 3 FOOT MINIMUM INTO BLUE SHALE.
- ALL EXPOSED CONCRETE SHALL BE CLASS 2 RUBBED FINISHED SURFACE.
- SIDEWALKS ADJACENT TO WALLS MUST BE 5 FOOT MINIMUM WIDTH FROM ALL PORTIONS OF THE WALL (INCLUDING PILASTERS, COLUMNS, ETC.).
- MAXIMUM PILASTER SPACING 40 FEET.
- WALLS SHALL NOT BE PLACED IN THE VISIBILITY EASEMENT OR STREET RIGHT OF WAY. THE WALL SHALL BE A MINIMUM OF EIGHT FEET IN HEIGHT AS MEASURED FROM THE NEAREST ALLEY EDGE OR SIDEWALK GRADE, WHICHEVER IS THE HIGHER. THE COLOR OF THE WALL SHALL BE LIMITED TO EARTH-TONE COLORS, EXCLUDING GRAY, GREEN AND WHITE. THE COLOR OF THE WALL SHALL BE UNIFORM ON EACH SIDE OF A THOROUGHFARE FOR THE ENTIRE LENGTH BETWEEN INTERSECTING THOROUGHFARES, UNLESS OTHERWISE APPROVED BY THE CITY'S PUBLIC WORKS DEPARTMENT. THE FINISH OF THE WALL SHALL BE CONSISTENT ON ALL SURFACES.
- IF WROUGHT IRON FENCING IS TO BE UTILIZED ON REQUIRED SCREENING, ALL WROUGHT IRON MUST BE SOLID STOCK, NO TUBULAR STEEL WILL BE ALLOWED.
- A 3"x8"x10' GALVANIZED ANGLE IRON PLATE SHALL BE INSTALLED BELOW THE BOTTOM ROW OF BRICKS & ANCHORED INTO THE COLUMNS FOR MASONRY SCREENING WALLS.

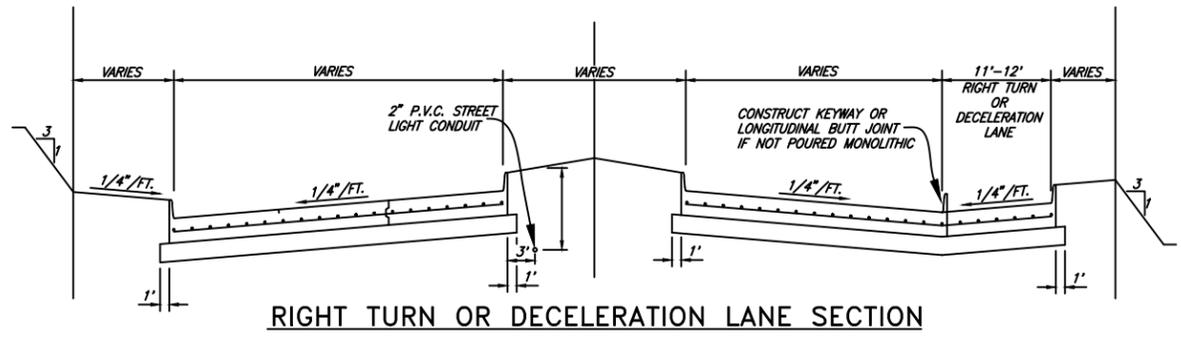
TRAFFIC SIGNS AND LIGHTING

- THE EXISTING SIGNS LOCATED ON PUBLIC CONSTRUCTION SITES ARE THE PROPERTY OF THE CITY OF DENISON. THROUGHOUT THE PERIOD OF THE CONTRACT, THE CONTRACTOR SHALL PROTECT THESE SIGNS SUCH THAT THEY ARE NOT DAMAGED IN THE COURSE OF CONSTRUCTION ACTIVITY.
- PRIOR TO THE START OF CONSTRUCTION, ALL EXISTING SIGNS WITHIN THE AREA OF CONSTRUCTION WILL BE INVENTORIED AND DOCUMENTED JOINTLY BY THE CITY INSPECTOR AND THE CONTRACTOR. THIS DOCUMENT WILL BE JOINTLY SIGNED BY BOTH PARTIES REFLECTING THE SIGN TYPE, SIGN SIZE, SIGN CONDITION, SIGN LOCATION, REFLECTIVITY ADEQUACY, ETC.THE CONTRACTOR IS HELD ACCOUNTABLE FOR THESE SIGNS THROUGHOUT THE PROJECT AND AT THE COMPLETION OF THE PROJECT.
- ALL GROUND MOUNTED AND OVERHEAD SIGNS SHALL USE ANSI STANDARD BQ1528 ALUMINUM BLANKS.
- ALL BLANKS TO BE INSTALLED SHALL BE 5052-H38 ALUMINIUM (ASTM B –209).
- THE THICKNESS FOR ALL SIGN BLANKS IS 0.080" EXCEPT OVERHEAD STREET NAME BLADES WHICH ARE 0.100".
- ALL HOLES SHALL BE 3/8" DIAMETER DRILLED OR PUNCHED AS SHOWN ON EACH BLANK DETAIL AND SHALL BE FREE OF BURRS AND / OR ROUGH EDGES.
- ALL SIGN FACE MATERIALS SHALL BE ASTM-4956 TYPE XI FULL CUBE PRISMATIC GRADE RETROREFLECTIVE SHEETING OR EQUIVALENT.
- ALL STREETNAME SIGNS SHALL HAVE 1/4" DIAMETER HOLES DRILLED ON EACH END AND AFFIXED TOGETHER.
- SIGN BLANK CORNERS TO BE ROUNDED AS SHOWN ON SHEET 5.
- ALL SIGN BLANK ARE TO BE ETCHED, DEGREASEODINE FINISH PRIOR TO APPLICATION OF LEGENDS.
- ALL SIGNS SHALL BE MANUFACTURED AND INSTALLED IN CONFORMANCE TO THE LATEST CITY OF DENISON SIGN STANDARDS.
- DETAILS ARE FOR ALL NEW AND REPLACEMENT SIGN INSTALLATIONS.
- ALL ADVISORY SPEED SIGNS SHALL BE BASED ON A TRAFFIC STUDY, PLEASE FOLLOW TXDOT PROCEDURES FOR ESTABLISHING SPEED ZONES. THE PROCEDURES ARE AVAILABLE AT <http://onlinemanuals.txdot.gov/txdotmanuals/szn/szn.pdf>.
- ALL SCHOOL ZONE WARNING SIGNS SHALL HAVE FLUORESCENT YELLOW GREEN BACKGROUNDS. REFER TO STANDARD HIGHWAY SIGN DESIGNS FOR TEXAS AVAILABLE AT <https://www.txdot.gov/inside-txdot/forms-publications/publications/highway-signs.html> OR CONTACT THE PUBLIC WORKS MAINTENANCE MANAGER FOR GUIDANCE.

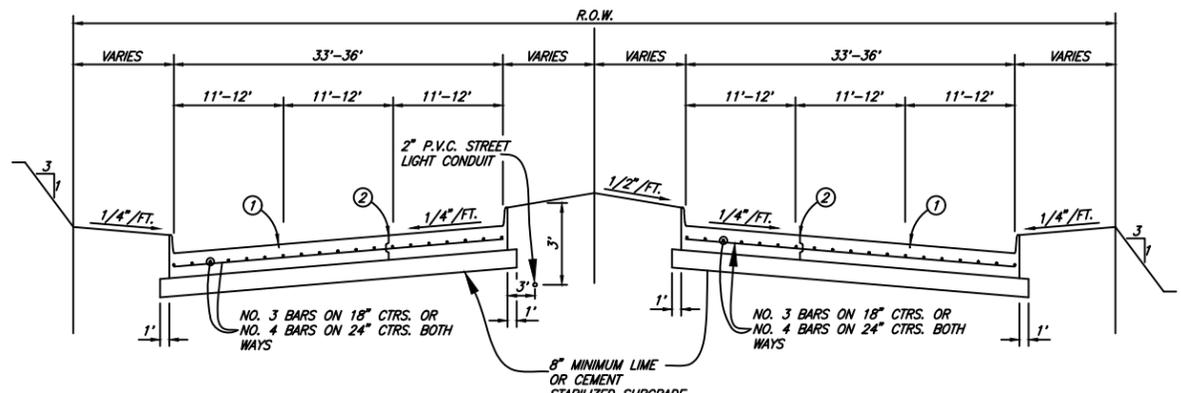
DETAILS

- ALL DETAILS ARE NOT TO SCALE
- SPECIAL DETAILS OR MODIFICATIONS TO THESE STANDARD DETAILS TO BE UTILIZED ON ANY GIVEN PROJECT SHALL BE SUBMITTED TO THE CITY FOR APPROVAL FOR USE.

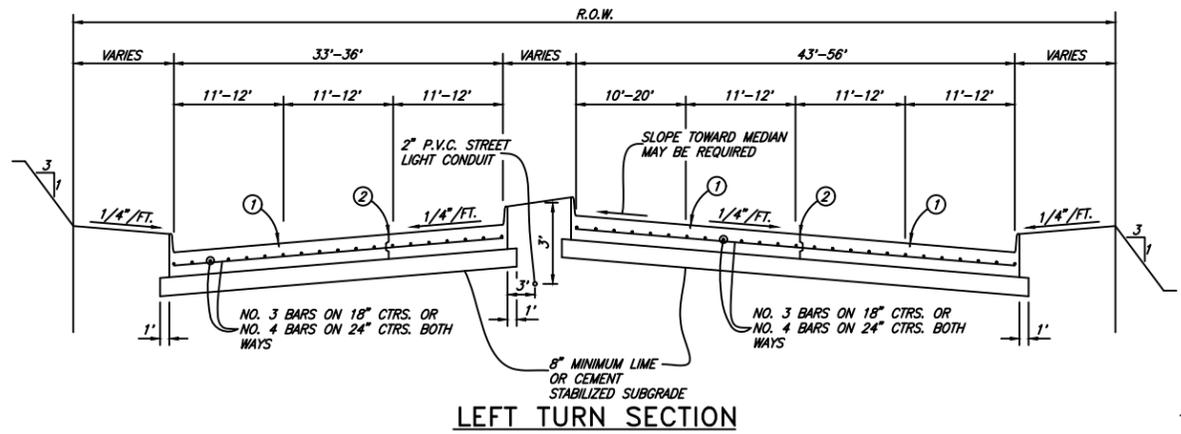
		<p style="text-align: center;">CITY OF DENISON, TEXAS</p> <p>STANDARD CONSTRUCTION DETAILS GENERAL NOTES</p>			<p style="text-align: center;">AUGUST 2025</p>	<p style="text-align: center;">SHEET NO. 1</p>



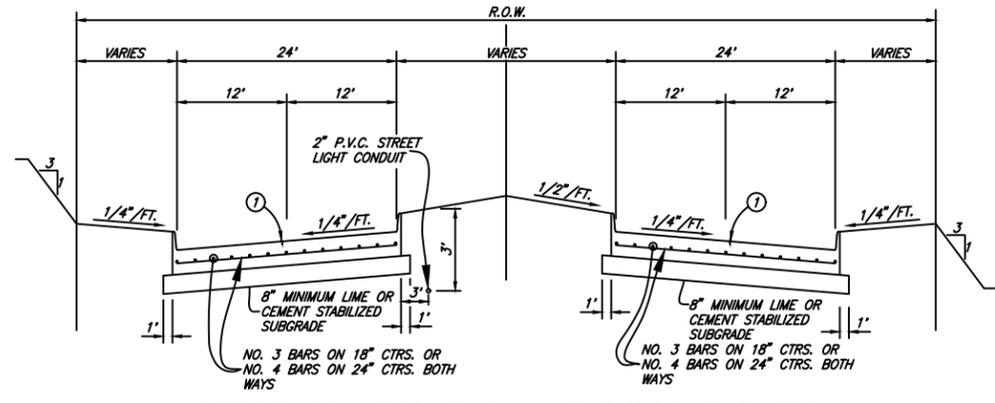
RIGHT TURN OR DECELERATION LANE SECTION



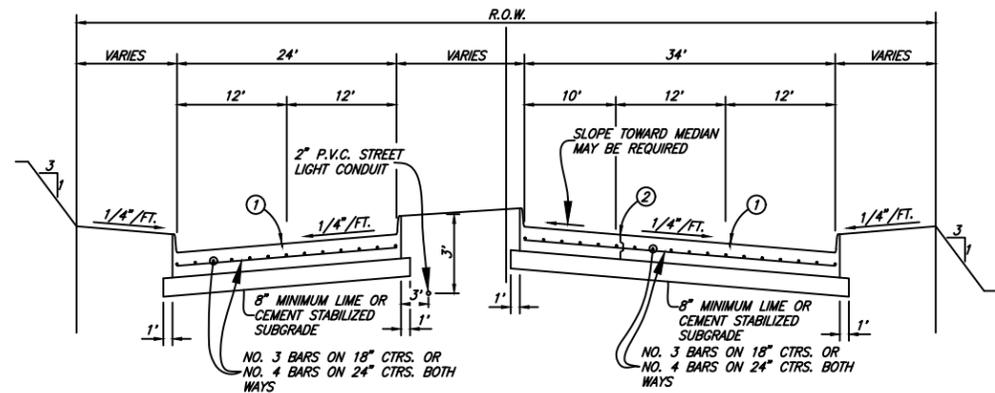
MAJOR ARTERIAL STREET REGULAR SECTION
M6D & P6D



LEFT TURN SECTION



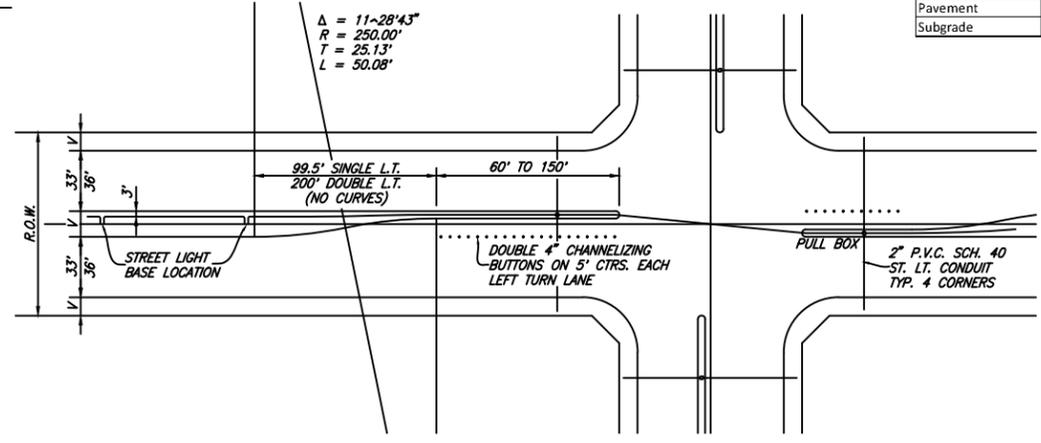
MINOR ARTERIAL STREET REGULAR SECTION
M4D



LEFT TURN SECTION

NOTE:
FOR RETROFIT TURN LANES AND MEDIAN OPENINGS, TWO ADDITIONAL
INCHES OF CONCRETE CAN BE PLACED IN LIEU OF LIME STABILIZATION.

Minimum Thickness	Arterial	Collector	Local	Truck Lane	Fire Lane	Industrial
Pavement	10"	10"	8"	12"	8"	12"
Subgrade	8"	8"	8"	8"	8"	8"



LEFT TURN PLAN

LEGEND

- ① - SAWED LONGITUDINAL DUMMY JOINT
- A. CONSTRUCTION JOINT (FULL WIDTH PVMT. IS ALLOWED WHERE APPROVED BY CITY).
- ② - B. DELETE IT WHEN PAVING IS 25 FT. WIDTH TO BE WIDENED IN FUTURE.
C. INSTALL CURB IF PAVING IS LESS THAN FULL WIDTH OF 33'-36'.
(LEGND_PVMT)

NOTE:
LIME OR CEMENT SUBGRADE TO BE RECOMMENDED BY GEOTECHNICAL ENGINEER AND MUST BE APPROVED BY THE PUBLIC WORKS DIRECTOR.

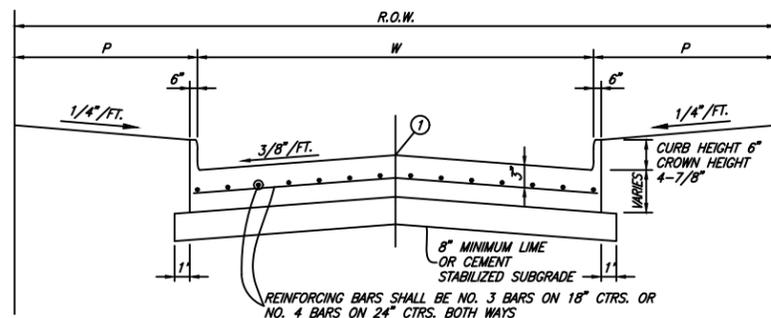


CITY OF DENISON, TEXAS

STANDARD CONSTRUCTION DETAILS
PAVING / SECTIONS / MAJOR & MINOR ARTERIAL STREETS

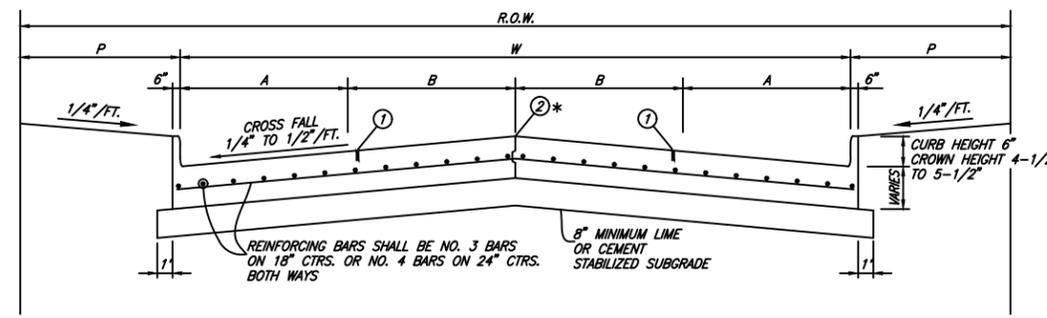
AUGUST
2025

SHEET NO.
2



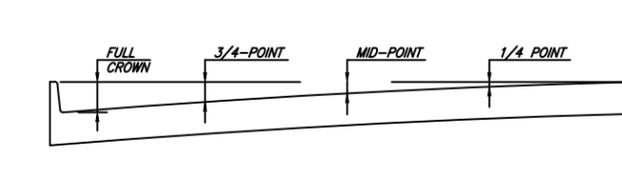
CONCRETE LOCAL STREET REGULAR SECTION

R2U
C2U



CONCRETE LOCAL STREET REGULAR SECTION

C4U
M4U
M5U



ROADWAY WIDTH (W)	TOTAL CROWN HEIGHT	3/4 POINT	MID-POINT	1/4 POINT
26'	4"	2-1/4"	1"	1/4"
36'	6"	3-3/8"	1-1/2"	3/8"
44'	6"	3-3/8"	1-1/2"	3/8"

TABLE OF CROWN HEIGHTS AND ORDINATES FOR VARIOUS PARABOLIC SECTIONS

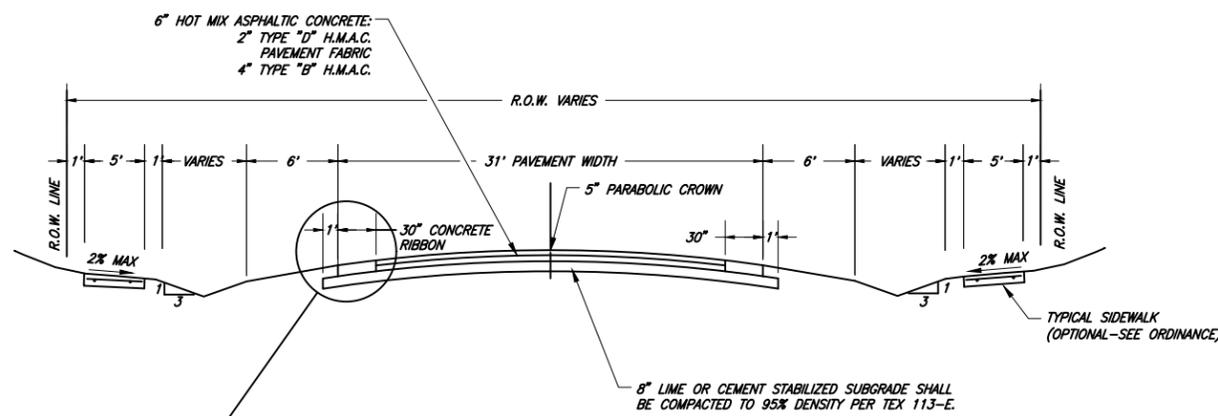
SLIP-FORM PAVEMENT MUST MEET CROWN GRADES AT GUTTERS, AT MID-POINTS & E
PARABOLIC ROADS ONLY TO BE CONSTRUCTED WITH SLIP FORM PAVERS

Minimum Thickness	Arterial	Collector	Local	Truck Lane	Fire Lane	Industrial
Pavement	10"	10"	8"	12"	8"	12"
Subgrade	8"	8"	8"	8"	8"	8"

LEGEND

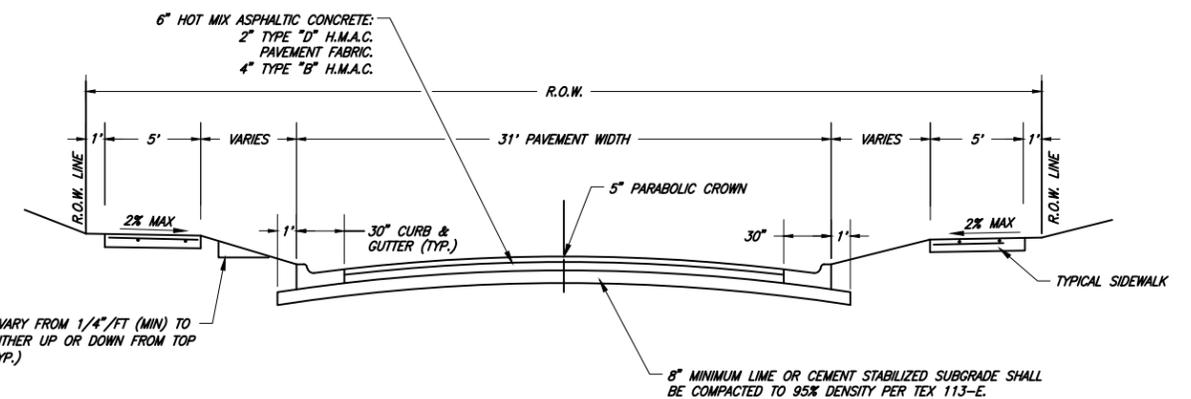
- ① - SAWED LONGITUDINAL DUMMY JOINT
- ② - CONSTRUCTION JOINT (FULL WIDTH PYMT. IS ALLOWED WHERE APPROVED BY CITY)

R2U, C2U, C4U, M4U & M5U PAVING SECTIONS SHALL HAVE A MINIMUM PAVEMENT THICKNESS OF 8 INCHES UNLESS THE GEOTECHNICAL ENGINEER RECOMMENDS GREATER.



31' HMAC PAVEMENT SECTION ESTATE LOT TYPICAL CROSS SECTION

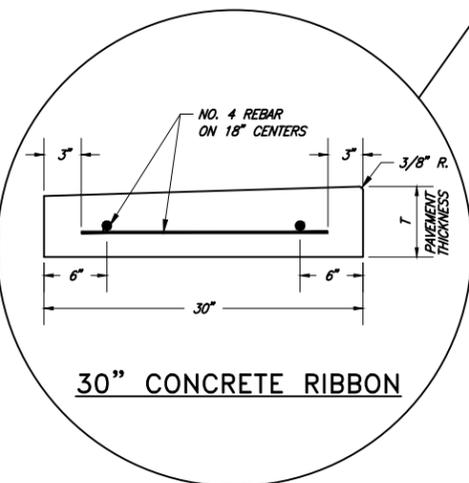
- NOTES:**
1. BAR DITCH SIDE SLOPE VARIES DEPENDING UPON DESIGN. NO GREATER THAN 3:1 WITHOUT ARMORING.
 2. CUL DE SAC SHALL HAVE A 7 INCH PARABOLIC CROWN.
 3. PAVING AND SUBGRADE ARE MINIMUMS AND SHALL BE VERIFIED BY GEOTECHNICAL RECOMMENDATION.
 4. HMAC SECTIONS SHALL ONLY BE USED FOR REPAIR OF EXISTING HMAC STREET. NO PROPOSED STREETS MAY BE HMAC.



31' HMAC PAVEMENT SECTION LOCAL STREET TYPICAL CROSS SECTION

- NOTES:**
1. FOR 30" GUTTER DETAIL, SEE "SEPARATE CURB & GUTTER" DETAIL.
 2. CUL DE SAC SHALL HAVE A 7 INCH PARABOLIC CROWN.
 3. PAVING AND SUBGRADE ARE MINIMUMS AND SHALL BE VERIFIED BY GEOTECHNICAL RECOMMENDATION.
 4. HMAC SECTIONS SHALL ONLY BE USED FOR REPAIR OF EXISTING HMAC STREET. NO PROPOSED STREETS MAY BE HMAC.

NOTE:
LIME OR CEMENT SUBGRADE DESIGN TO BE RECOMMENDED BY GEOTECHNICAL ENGINEER AND MUST BE APPROVED BY THE PUBLIC WORKS DIRECTOR.



30" CONCRETE RIBBON



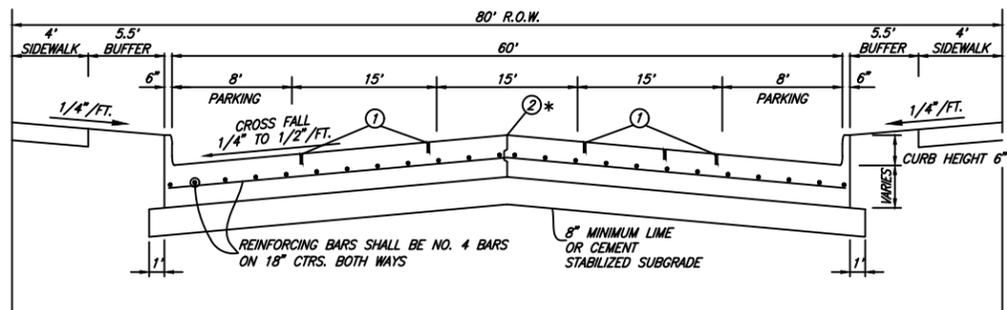
CITY OF DENISON, TEXAS

STANDARD CONSTRUCTION DETAILS
PAVING / SECTIONS / LOCAL STREETS

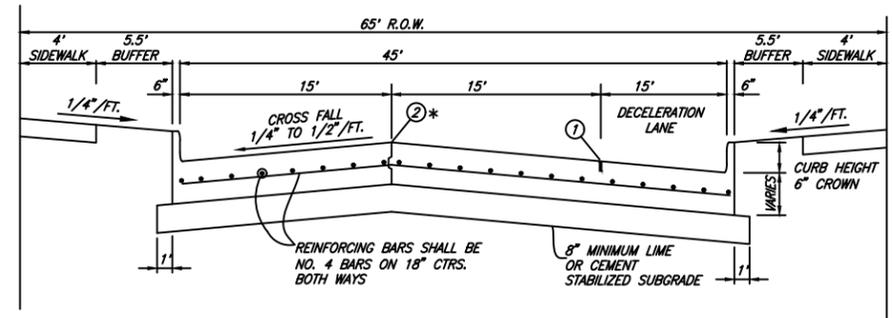
**AUGUST
2025**

SHEET NO.

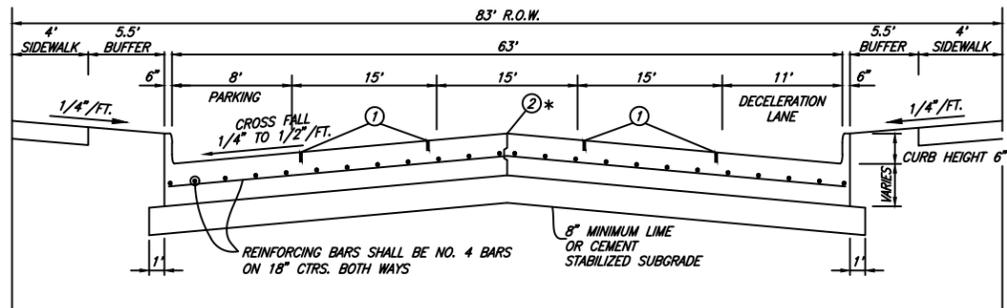
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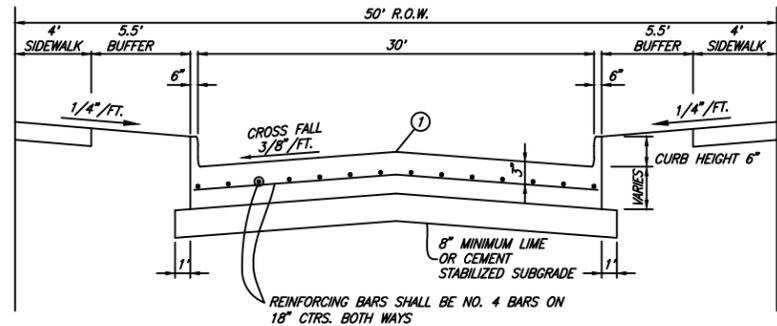
CONCRETE INDUSTRIAL STREET WITH PARKING SECTION



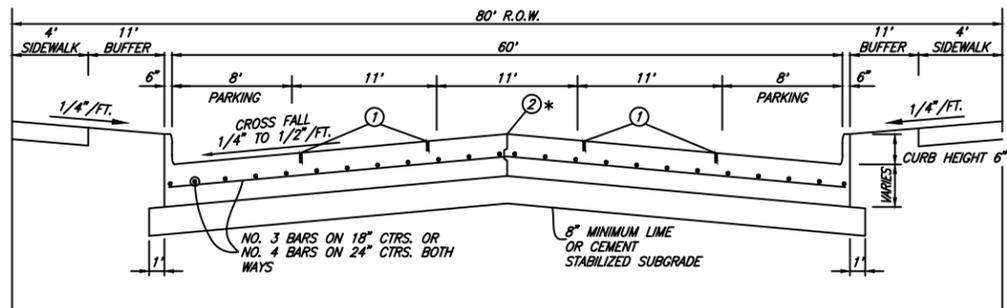
CONCRETE INDUSTRIAL LOCAL STREET WITH RIGHT TURN DECELERATION LANE SECTION



CONCRETE INDUSTRIAL STREET WITH DECELERATION LANE SECTION



CONCRETE INDUSTRIAL STREET REGULAR SECTION



MAJOR COLLECTOR WITH PARKING SECTION

LEGEND

- ① - SAWED LONGITUDINAL DUMMY JOINT
- ② - CONSTRUCTION JOINT (FULL WIDTH PVMT. IS ALLOWED WHERE APPROVED BY CITY)

Minimum Thickness	Arterial	Collector	Local	Truck Lane	Fire Lane	Industrial
Pavement	10"	10"	8"	12"	8"	12"
Subgrade	8"	8"	8"	8"	8"	8"

NOTE:
LIME OR CEMENT SUBGRADE DESIGN TO BE RECOMMENDED BY GEOTECHNICAL ENGINEER AND MUST BE APPROVED BY THE PUBLIC WORKS DIRECTOR.



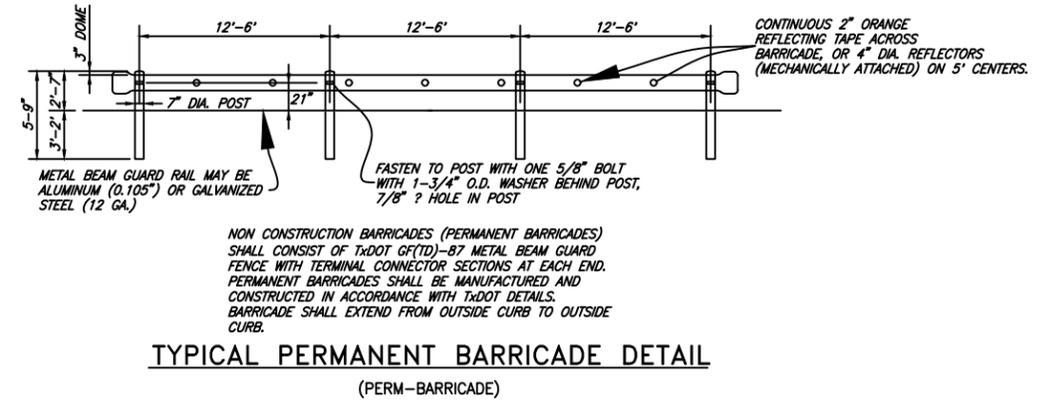
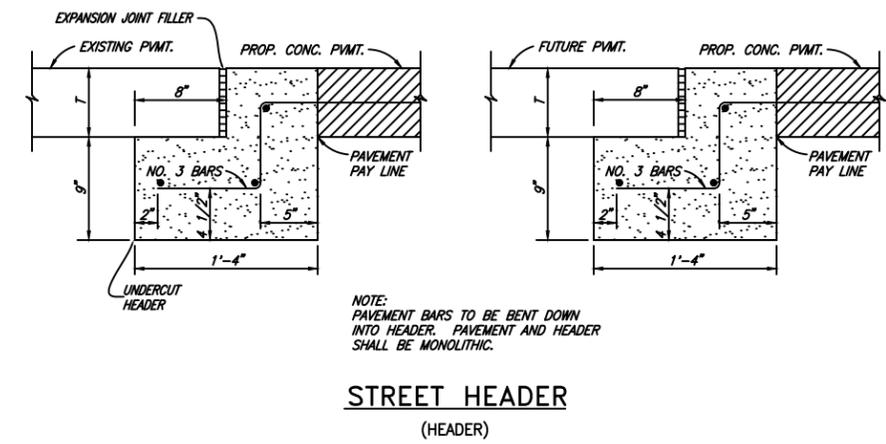
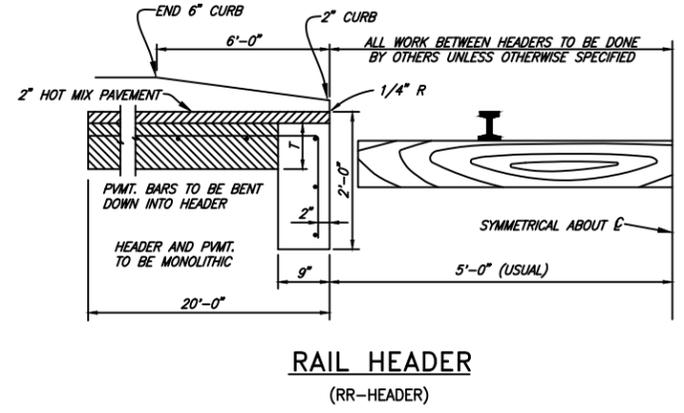
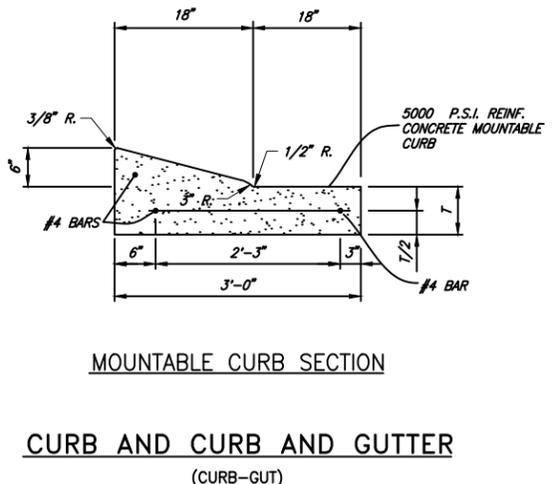
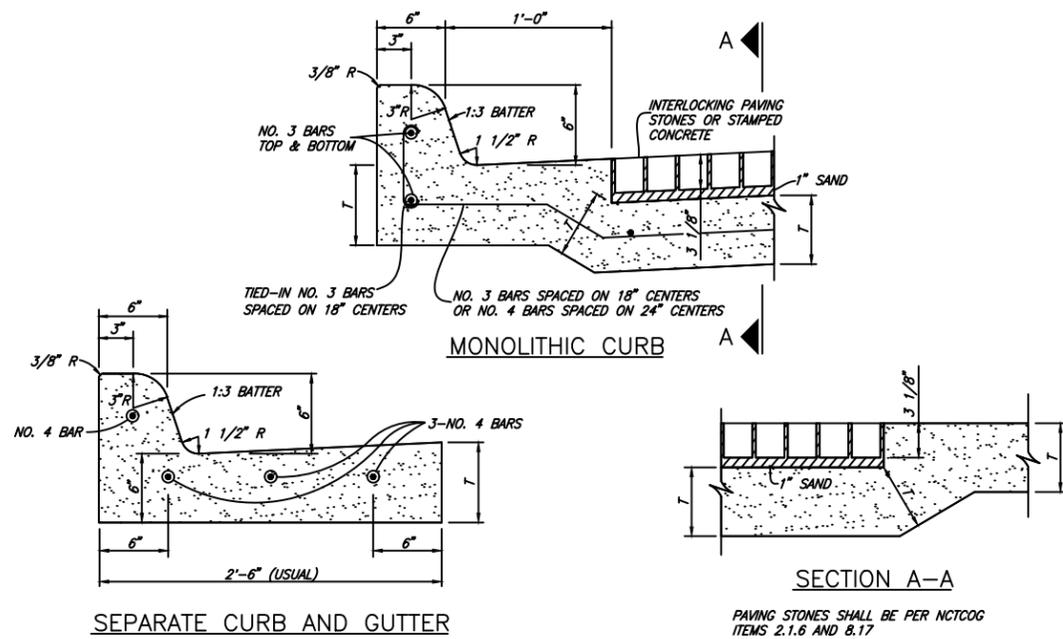
CITY OF DENISON, TEXAS

STANDARD CONSTRUCTION DETAILS
PAVING / SECTIONS / LOCAL & COLLECTOR STREETS

**AUGUST
2025**

SHEET NO.

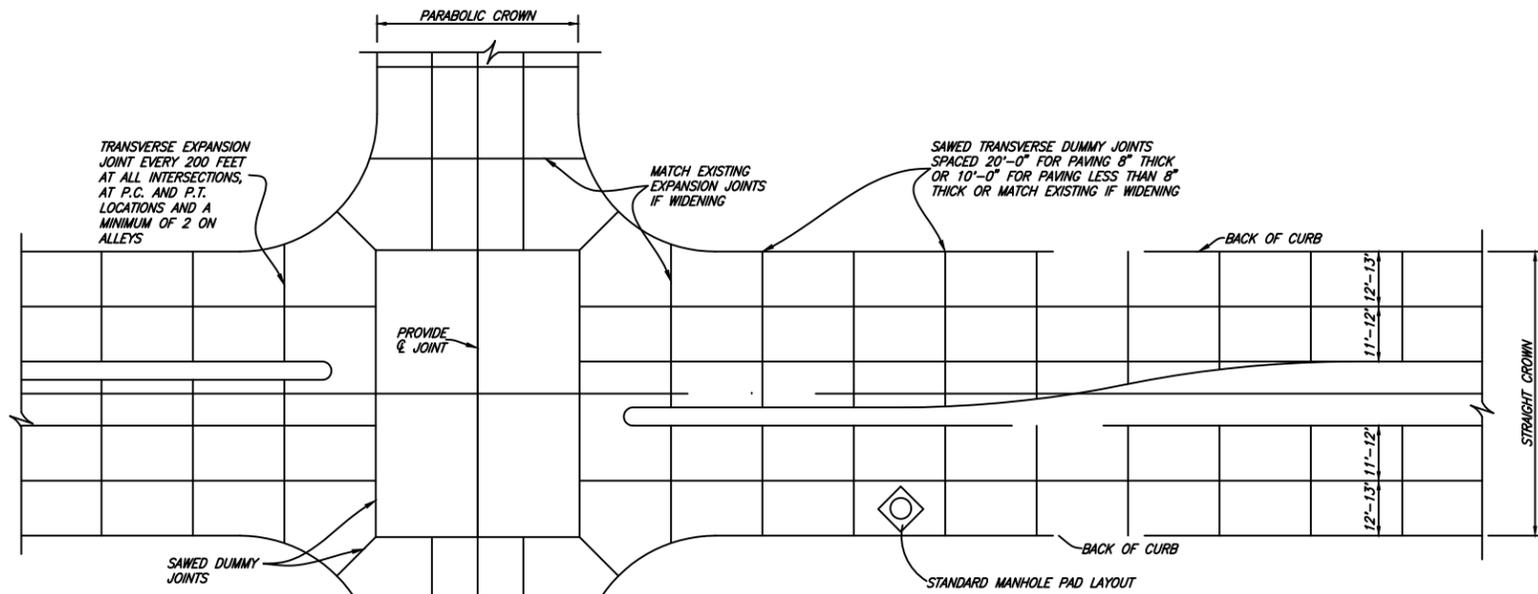
4



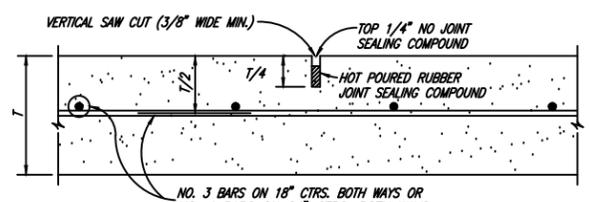
CITY OF DENISON, TEXAS
STANDARD CONSTRUCTION DETAILS
PAVING / DETAILS

AUGUST 2025

SHEET NO.
5

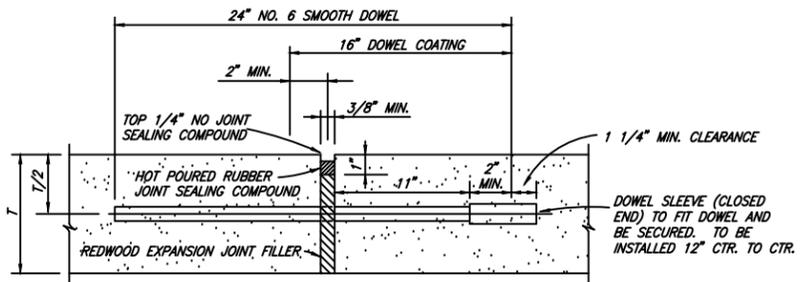


SPACING DIAGRAM FOR TRANSVERSE JOINTS
(ROADWAYS AND ALLEYS)
(JOINT-SPACING)



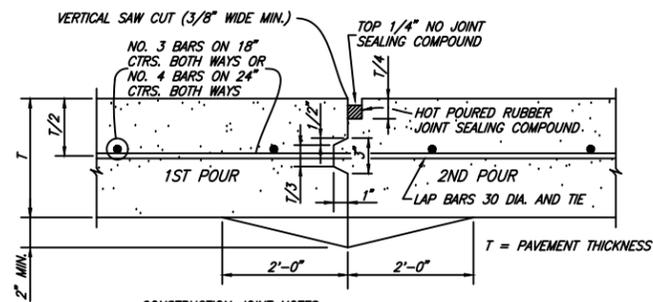
NO. 3 BARS ON 18" CTRS. BOTH WAYS OR
NO. 4 BARS ON 24" CTRS. BOTH WAYS

SAWED DUMMY JOINT
(DUMMYJNT)



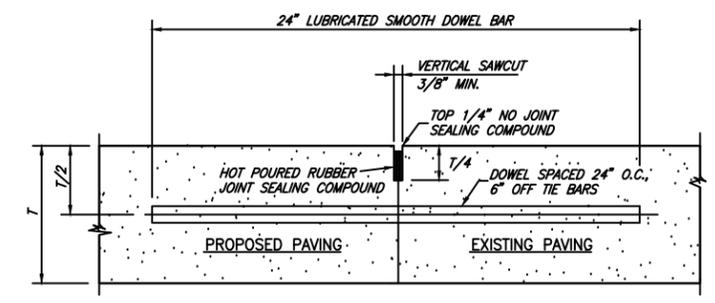
- TRANSVERSE EXPANSION JOINT NOTES:**
1. DOWELS AND REINFORCING BARS SHALL BE SUPPORTED BY AN APPROVED DEVICE.
 2. TRANSVERSE EXPANSION JOINTS SHALL BE SPACED AT 200 FT. MAXIMUM AND AT ALL INTERSECTIONS.

TRANSVERSE EXPANSION JOINT
(EXPJNT)



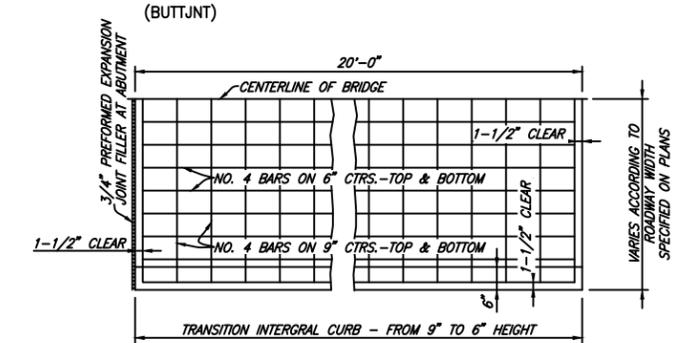
- CONSTRUCTION JOINT NOTES:**
1. CONTRACTOR SHALL PROTECT KEYWAY PRIOR TO SECOND POUR. IF LONGITUDINAL KEYWAY IS DAMAGED, CONTRACTOR SHALL REPAIR WITH THE USE OF LONGITUDINAL BUTT JOINT (DRILL DOWELS INTO FIRST POUR).
 2. THICKENED EDGES ARE REQUIRED FOR FUTURE WIDENING ONLY.

CONSTRUCTION JOINT
(CONSTJNT)

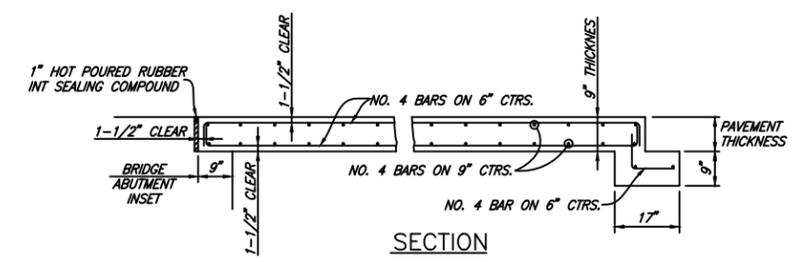


- NOTE:**
1. T-8" AND GREATER NO. 6 BAR, T-6" AND LESS NO. 5 BAR
 2. LONGITUDINAL BUTT CONSTRUCTION MAY BE UTILIZED IN PLACE OF LONGITUDINAL HINGED (KEYWAY) JOINT AT CONTRACTORS OPTION.
 3. DOWEL BARS SHALL BE DRILLED INTO PAVEMENT HORIZONTALLY BY USE OF A MECHANICAL RIG. HAND DRILLING NOT ACCEPTABLE. DAMAGE TO EXISTING PAVEMENT SHALL BE REMOVED BY CONTRACTOR AND JOINT CONSTRUCTED AT CONTRACTORS EXPENSE.
 4. DOWEL BAR SHOWN IS IN ADDITION TO TIE BARS (12" O.C.-6" OFF DOWELS).
 5. TIE BARS SHALL BE NO. 5 BAR DEFORMED. TIE BAR SHALL HAVE A LENGTH OF 24 INCHES.

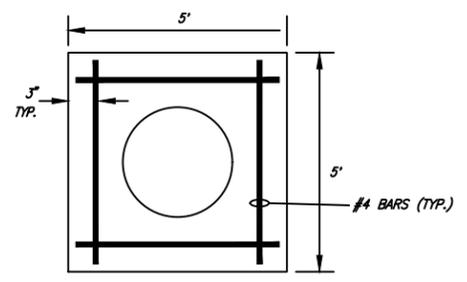
LONGITUDINAL BUTT JOINT
(BUTTJNT)



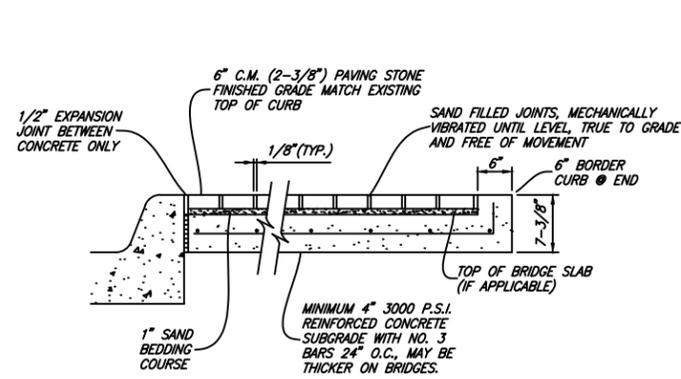
PLAN



SECTION
BRIDGE APPROACH SLAB
(APPROACHSLAB)



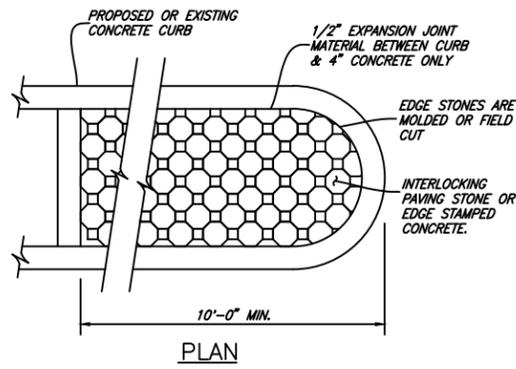
MANHOLE PAD PLAN



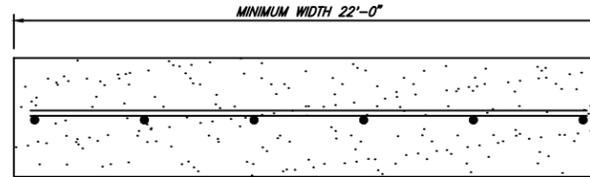
TYPICAL CROSS SECTION

STAMPED CONCRETE OR INTERLOCKING PAVING STONE

COLOR AND STYLE TO BE SELECTED BY CITY
(MEDIAN_STONE)



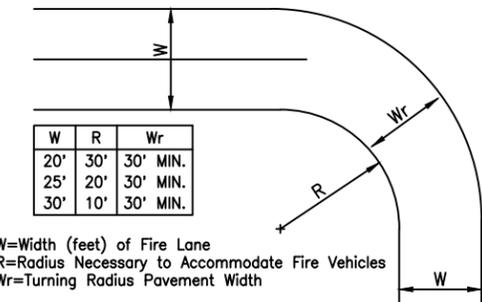
MEDIAN PAVING SHALL EXTEND TO A POINT WHERE MEDIAN IS 6' WIDE. IF MEDIAN IS 6' WIDE, SHALL EXTEND 15' FROM NOSE. FOR MEDIANS WIDER THAN 6', PAVING SHALL EXTEND 10' FROM NOSE. ALL DISTANCES ARE MINIMUM.



1. ALL FIRE LANES SHALL BE PAVED WITH A MINIMUM OF 8 INCHES OF 3600 P.S.I. CONCRETE REINFORCED WITH #3 REBAR PLACED ON 18 INCH CENTERS EACH WAY ON A 8 INCH LIME STABILIZED SUBGRADE THE SUBGRADE SHALL BE STABILIZED IN SUFFICIENT AMOUNT PER APPROVED GEOTECHNICAL DESIGN TO REDUCE THE PLASTICITY INDEX BELOW FIFTEEN (15). SURFACE AREA TREATED TO A MINIMUM 8 INCH THICKNESS.

2. ALL FIRE LANES MAY BE PAVED WITH 8 INCHES OF 3600 P.S.I. CONCRETE (28 DAYS COMPRESSIVE STRENGTH) REINFORCED WITH #3 REBAR PLACED ON 18 INCH CENTERS EACH WAY ON A SUBGRADE SCARIFIED AND COMPACTED TO AT LEAST 95% STANDARD PROCTOR DENSITY. CONTRACTION JOINTS SHALL BE SPACED AT A MAXIMUM OF 15.5 FEET ON CENTERS EACH WAY. CONTRACTION JOINTS MAY BE DUMMY OR SAWED JOINTS TO A DEPTH OF AT LEAST ONE (1) INCH DEEP. TO ENSURE PROPER RUNOFF IN ORDER TO PREVENT PONDING, THE PAVEMENT SURFACE SHOULD HAVE A MINIMUM SLOPE OF 1/2 (1/2" PER 100 FEET).

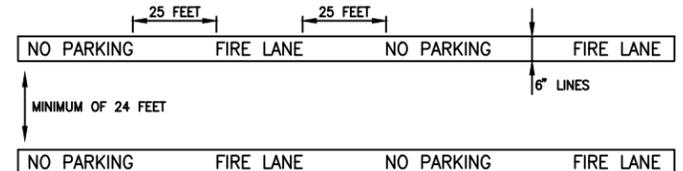
3. ALTERNATE PAVING DESIGN: IN LIEU OF ITEMS LISTED ABOVE, THE DEVELOPER MAY SUBMIT AN ENGINEERED DESIGN THAT WILL BE EQUIVALENT IN PERFORMANCE OF THE SPECIFICATIONS ABOVE. THE EQUIVALENT DESIGN MUST TAKE INTO ACCOUNT THE SOIL CONDITIONS OF THE SITE TO BE DEVELOPED. SUCH DESIGN SHALL REQUIRE APPROVAL BY PUBLIC WORKS DIRECTOR.



W	R	Wr
20'	30'	30' MIN.
25'	20'	30' MIN.
30'	10'	30' MIN.

W=Width (feet) of Fire Lane
R=Radius Necessary to Accommodate Fire Vehicles
Wr=Turning Radius Pavement Width

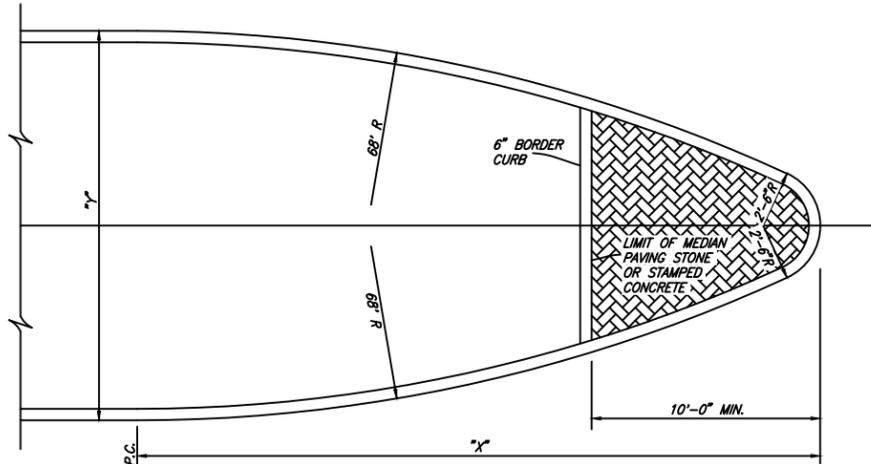
FIRE LANE DESIGN



1. THE FIRE CHIEF IS AUTHORIZED TO DESIGNATE FIRE LANES.
2. FIRE LANES SHALL BE MARKED BY SIX INCH (6") WIDE LINES USING RED TRAFFIC PAINT, WITH THE WORDING "NO PARKING" AND "FIRE LANE" PAINTED ON THE LINES AT INTERVALS OF TWENTY-FIVE (25'). THE LETTERING WILL BE FOUR INCHES (4") HIGH WITH A ONE INCH (1") WIDE STROKE PAINTED WITH WHITE TRAFFIC PAINT.
3. FIRE LANES SHALL BE A MINIMUM OF TWENTY-FOOT (24') IN WIDTH.
4. ANY DEAD-END FIRE LANE MORE THAN ONE HUNDRED FIFTY-FOOT (150') LONG SHALL PROVIDE A TURN AROUND OF ONE HUNDRED FEET (100') IN DIAMETER AT THE CLOSED END.

FIRE LANE MARKING

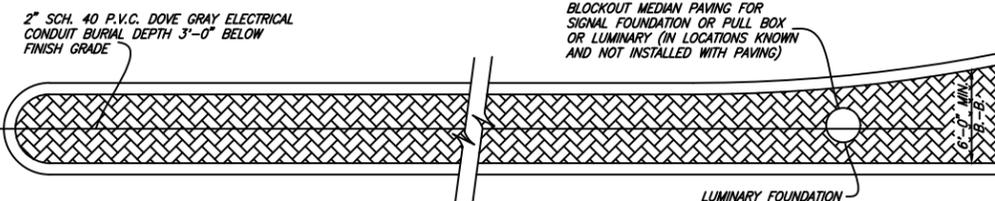
(FIRELANE)



DETAIL OF NOSE FOR MEDIAN ISLAND

DIMENSIONS OF MEDIAN NOSE

X = 13.90'	Y = 7.0'	X = 26.36'	Y = 14.0'
X = 16.44'	Y = 8.0'	X = 29.89'	Y = 17.0'
X = 18.06'	Y = 9.0'	X = 32.93'	Y = 20.0'
X = 20.42'	Y = 10.0'	X = 36.47'	Y = 24.0'

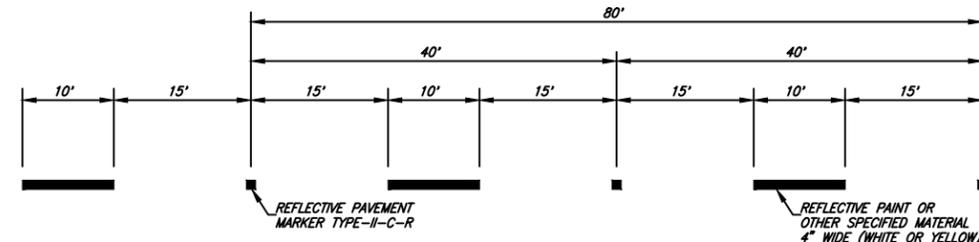


DETAIL OF MEDIAN PAVEMENT

(MEDIAN_DTL)

FIRE LANE PAVING & JOINT DETAIL

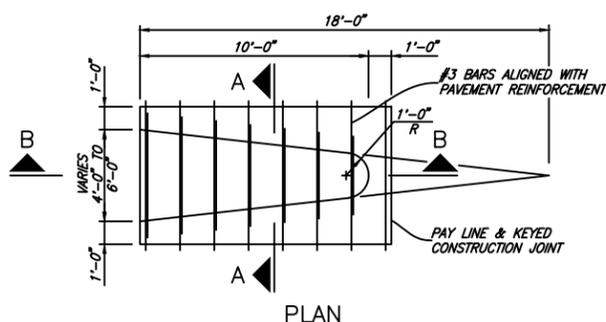
(FIRELANEJNT)



REFLECTIVE PAVEMENT MARKER TYPE II-C-R SHALL BE SPACED ON 40' CENTERS WITH THE CLEAR FACE TOWARD NORMAL TRAFFIC AND THE RED FACE TOWARD THE WRONG WAY TRAFFIC.

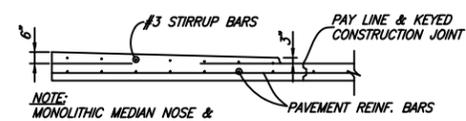
LANE LINE PAVEMENT MARKING

(MARKING)

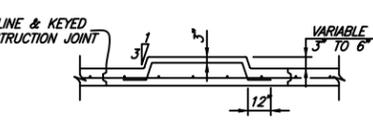


MONOLITHIC MEDIAN NOSE

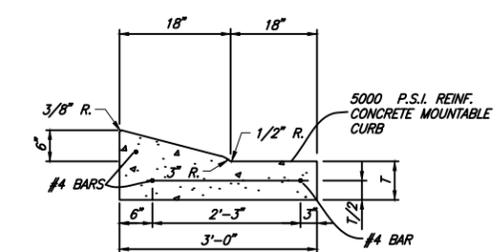
(MONO_MEDIAN)



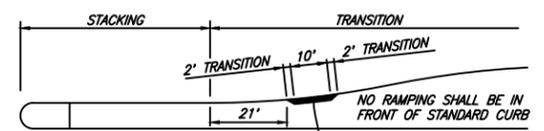
SECTION B-B



SECTION A-A



MOUNTABLE CURB SECTION



MOUNTABLE CURB DETAIL-PLAN VIEW

LANDSCAPE MAINTENANCE RAMP

(LANDSCAPE_RAMP)



CITY OF DENISON, TEXAS

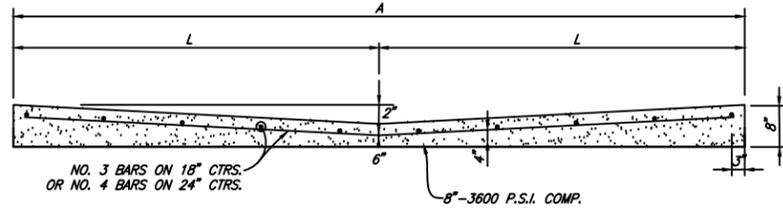
STANDARD CONSTRUCTION DETAILS
PAVING / DETAILS

AUGUST
2025

SHEET NO.

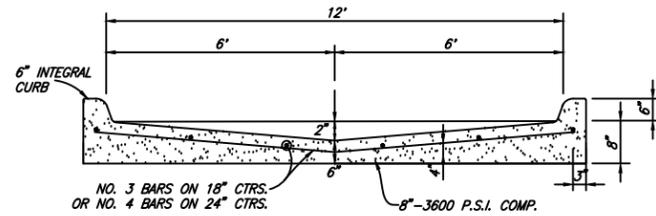
7

ALLEY WIDTH (A)	HALF WIDTH (L)
12'	6'
16'	8'
20'	10'



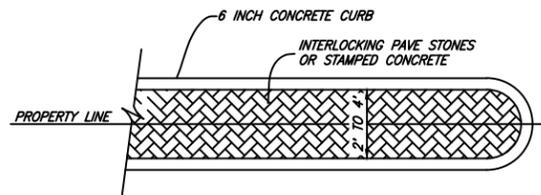
STANDARD 12, 16' & 20' ALLEY SECTION

(STDALLEY2)



ALLEY SECTION WITH CURBS

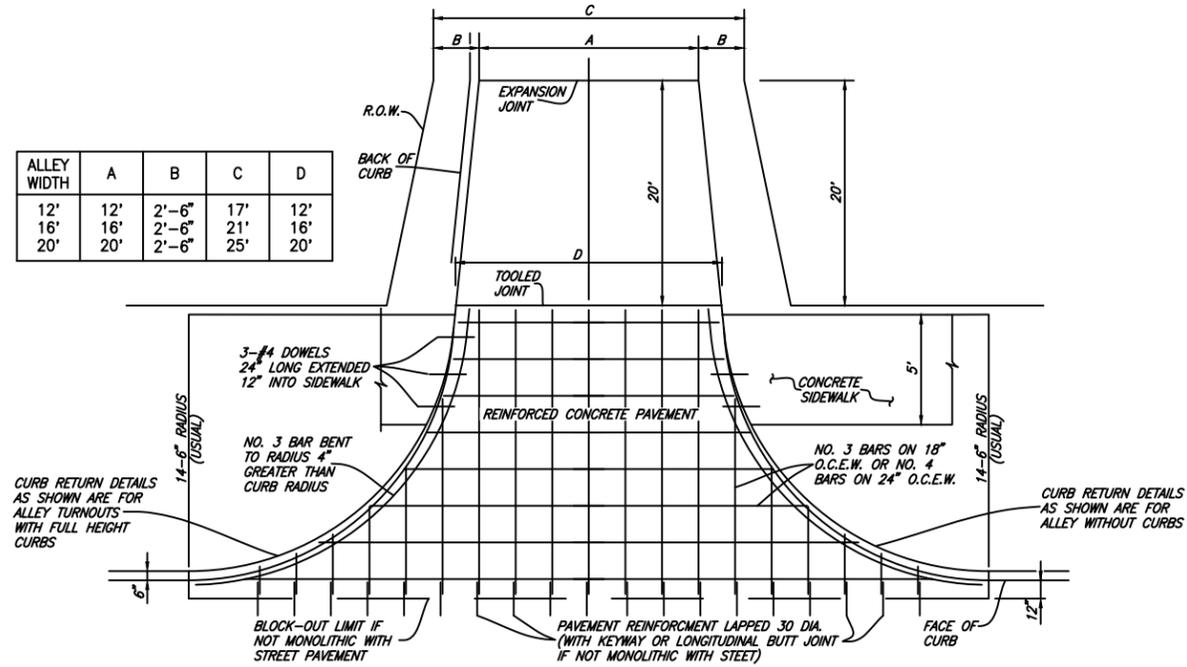
(STDALLEY)



MEDIAN AT DRIVEWAYS SPLIT BY PROPERTY LINE

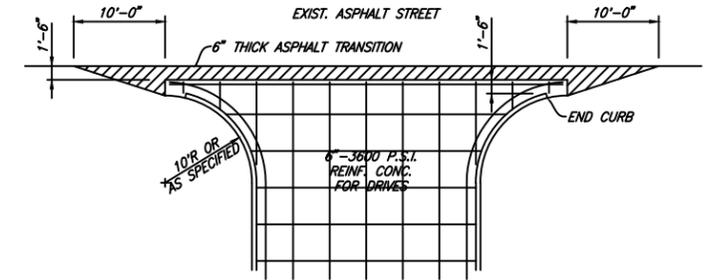
(DRIVEDTL3)

ALLEY WIDTH	A	B	C	D
12'	12'	2'-6"	17'	12'
16'	16'	2'-6"	21'	16'
20'	20'	2'-6"	25'	20'



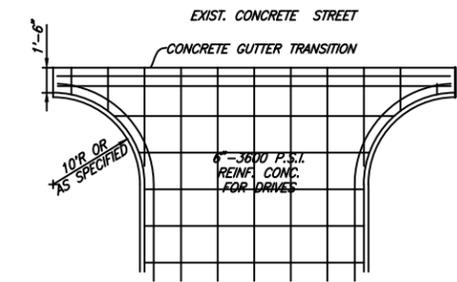
ALLEY RETURN DETAILS

(ALLEY_DTL)



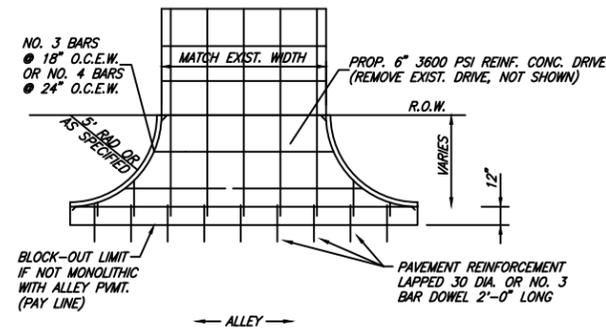
TYPICAL DRIVE OR STREET CONNECTION TO EXISTING ASPHALT STREET

(DRIVE_CON)



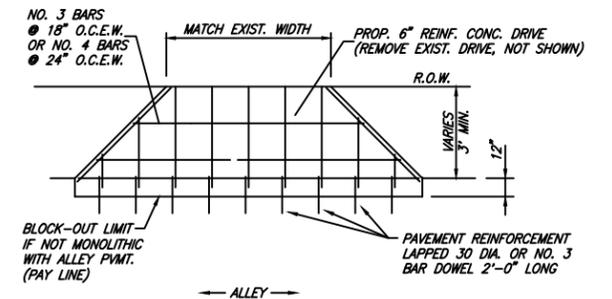
TYPICAL DRIVE OR STREET CONNECTION TO EXISTING CONCRETE STREET

(DRIVE_CON)



DRIVEWAY RETURN TO ALLEY WITH CURBS

(DRIVEDTL2)



STANDARD DRIVEWAY RETURN TO ALLEY

(DRIVEDTL2)



CITY OF DENISON, TEXAS

STANDARD CONSTRUCTION DETAILS
PAVING / ALLEY / DRIVEWAYS

**AUGUST
2025**

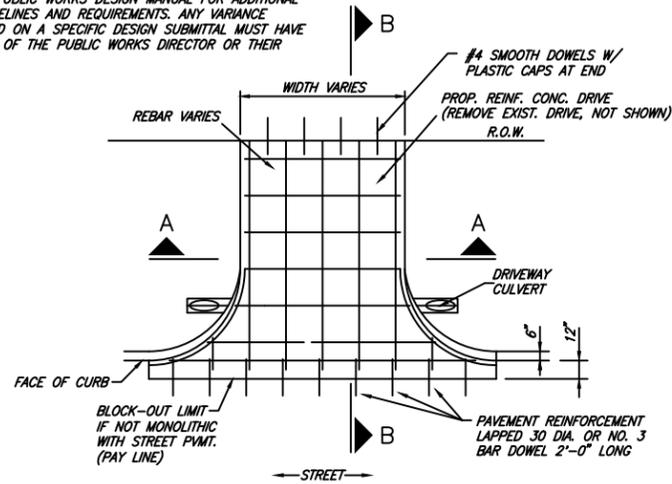
SHEET NO.

8

	RESIDENTIAL	COMMERCIAL	INDUSTRIAL
MIN. WIDTH	12' B-B	30' B-B	30' B-B
RADIUS	5'	30'	30'
MIN. THICKNESS	6"	8"	8"
REBAR	#3 BARS @ 18" O.C.	#4 BARS @ 18" O.C.	#4 BARS @ 12" O.C.

NOTE:

ALL DRIVEWAYS SHALL BE HAND POURED. ALSO SEE SECTION 1 OF THE DENISON PUBLIC WORKS DESIGN MANUAL FOR ADDITIONAL DRIVEWAY GUIDELINES AND REQUIREMENTS. ANY VARIANCE GRANTED BASED ON A SPECIFIC DESIGN SUBMITTAL MUST HAVE THE APPROVAL OF THE PUBLIC WORKS DIRECTOR OR THEIR DESIGNEE.

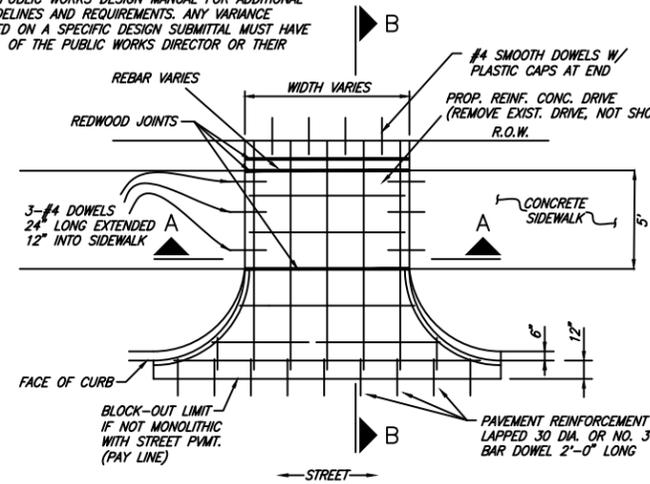


(CONCRETE) DRIVEWAY RETURN TO STREET WITH CULVERT

	RESIDENTIAL	COMMERCIAL	INDUSTRIAL
MIN. WIDTH	12' B-B	30' B-B	30' B-B
RADIUS	5'	30'	30'
MIN. THICKNESS	6"	8"	8"
REBAR	#3 BARS @ 18" O.C.	#4 BARS @ 18" O.C.	#4 BARS @ 12" O.C.

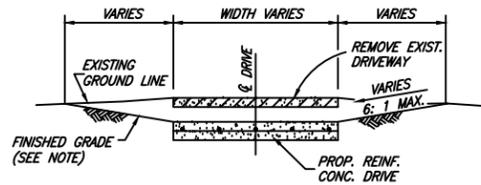
NOTE:

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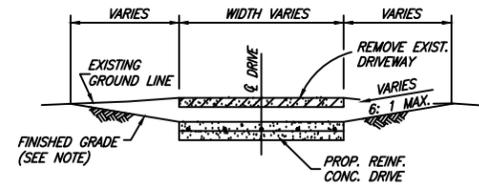
(CONCRETE) DRIVEWAY RETURN TO STREET

NOTE: FINISHED GRADING WITHIN THE R.O.W. SHALL BE BROADCAST SEED. WHERE PROPOSED DRIVEWAY CONSTRUCTION GOES BEYOND THE R.O.W. AND INTO PRIVATE PROPERTY, THE FINISHED GRADING SHALL BE BLOCK SODDED TO RESTORE THE LANDSCAPING TO ITS PRE-CONSTRUCTION APPEARANCE.

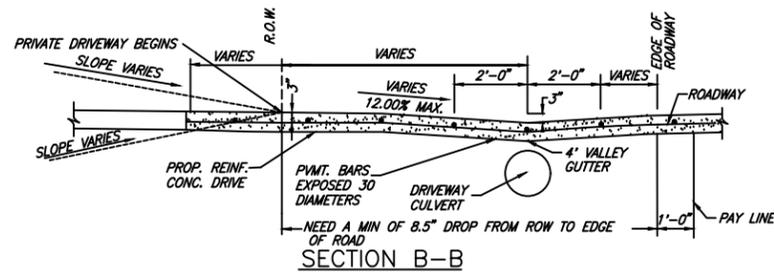


SECTION A-A

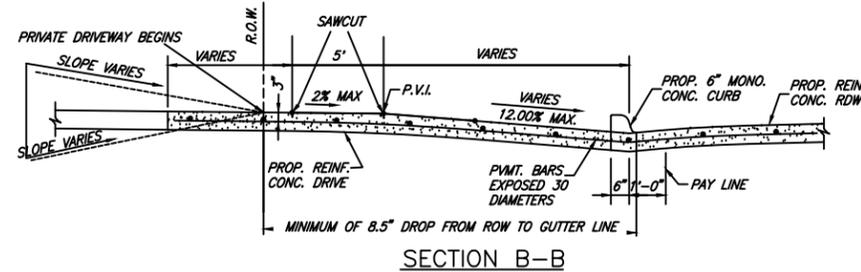
NOTE: FINISHED GRADING WITHIN THE R.O.W. SHALL BE BROADCAST SEED. WHERE PROPOSED DRIVEWAY CONSTRUCTION GOES BEYOND THE R.O.W. AND INTO PRIVATE PROPERTY, THE FINISHED GRADING SHALL BE BLOCK SODDED TO RESTORE THE LANDSCAPING TO ITS PRE-CONSTRUCTION APPEARANCE.



SECTION A-A



DRIVEWAY RETURN SECTIONS (DRIVEDTL)



DRIVEWAY RETURN SECTIONS (DRIVEDTL)



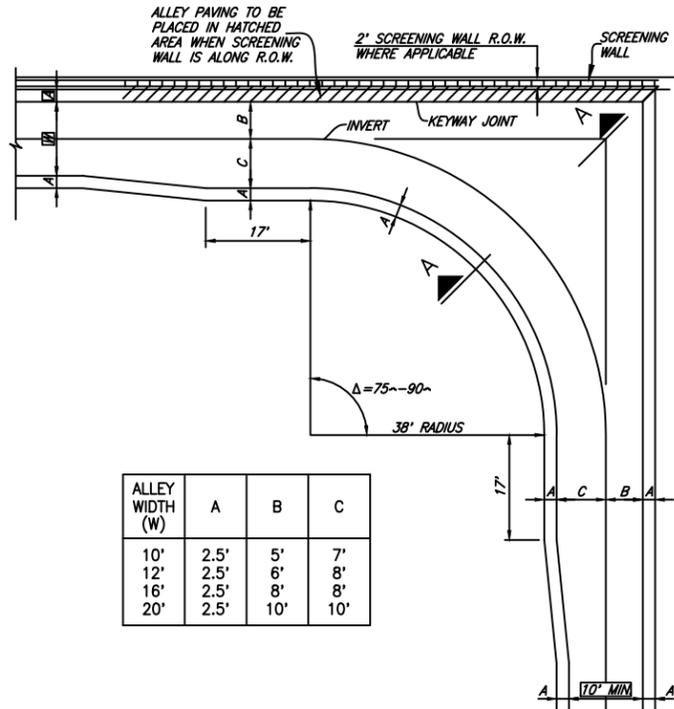
CITY OF DENISON, TEXAS

STANDARD CONSTRUCTION DETAILS
PAVING / ALLEY / DRIVEWAYS

AUGUST
2025

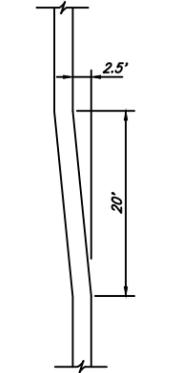
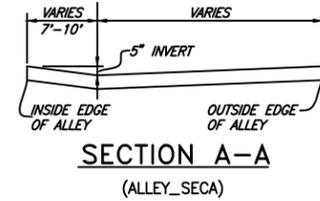
SHEET NO.

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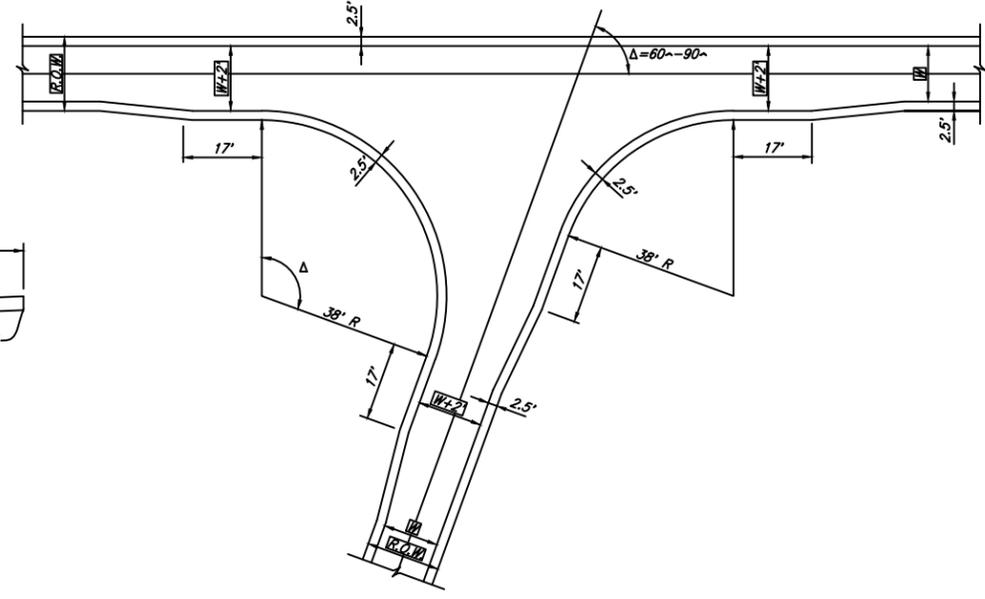


ALLEY WIDTH (W)	A	B	C
10'	2.5'	5'	7'
12'	2.5'	6'	8'
16'	2.5'	8'	8'
20'	2.5'	10'	10'

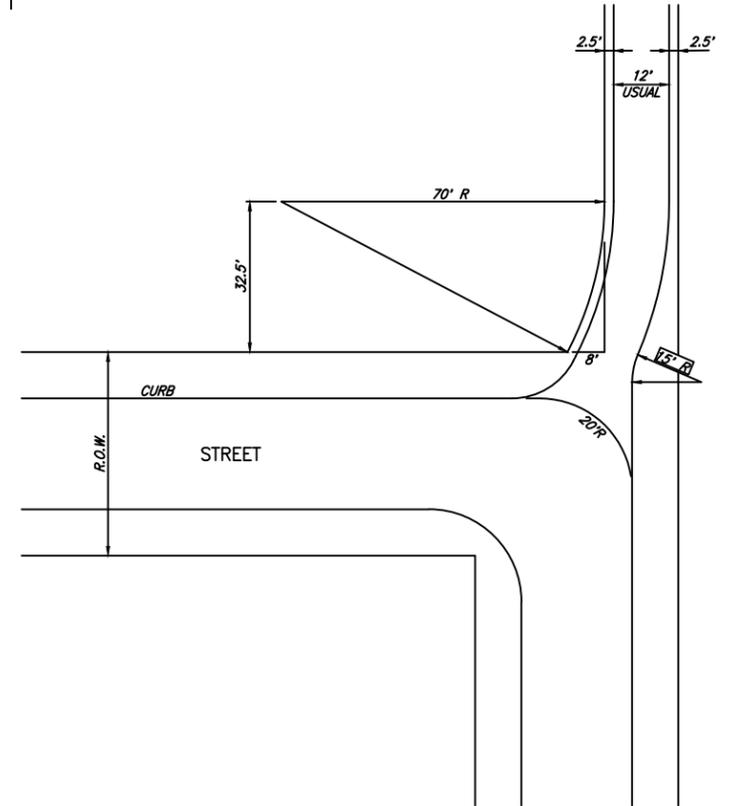
ALLEY TURN FOR $\Delta = 75^\circ-90^\circ$
(ALLEY_TURN3)



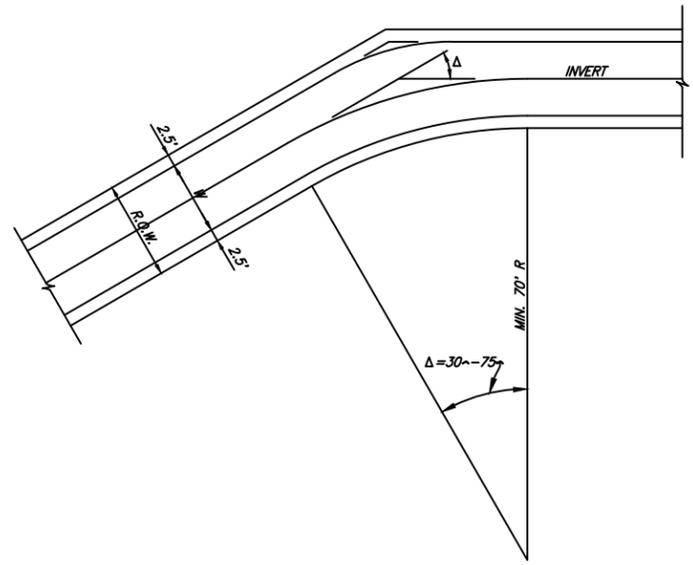
DETAIL "A"
(ALLEY_DTLA)



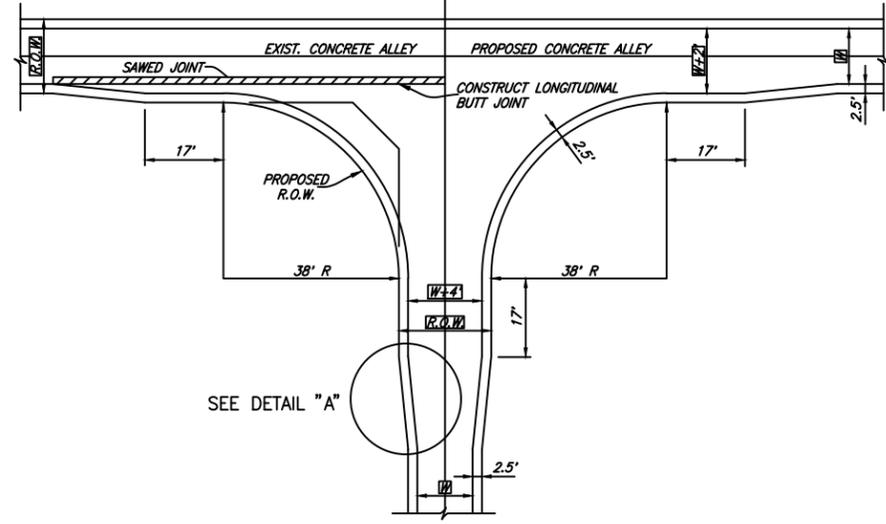
ALLEY TURN FOR $\Delta > 90^\circ$
(ALLEY_TURN2)



ALLEY / STREET INTERSECTION
(ALLEY_ST)



ALLEY TURN FOR $\Delta = 30^\circ-75^\circ$
(ALLEY_TURN)



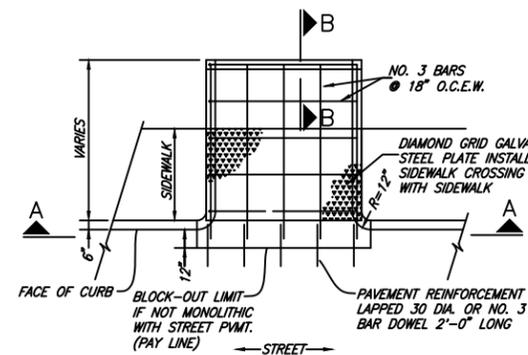
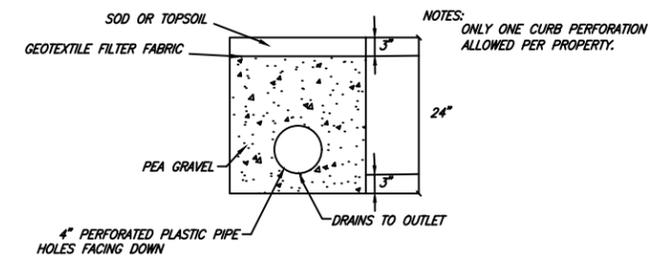
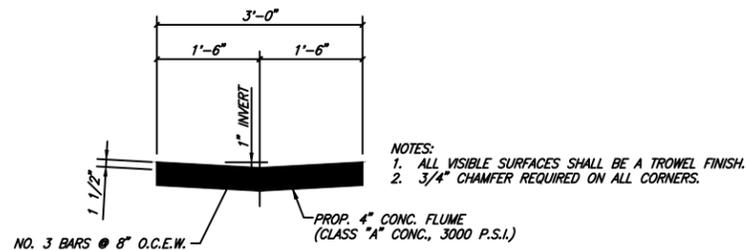
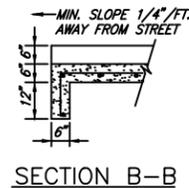
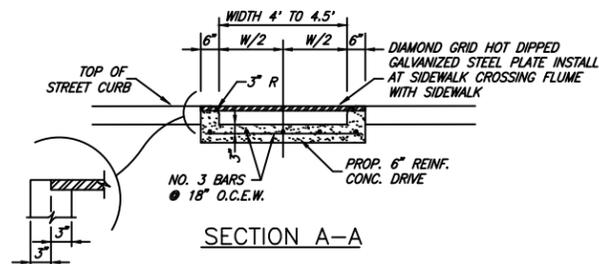
ALLEY INTERSECTING ALLEY
(ALLEY_ALLEY)



CITY OF DENISON, TEXAS
STANDARD CONSTRUCTION DETAILS
PAVING / GEOMETRICS

AUGUST 2025

SHEET NO.
10

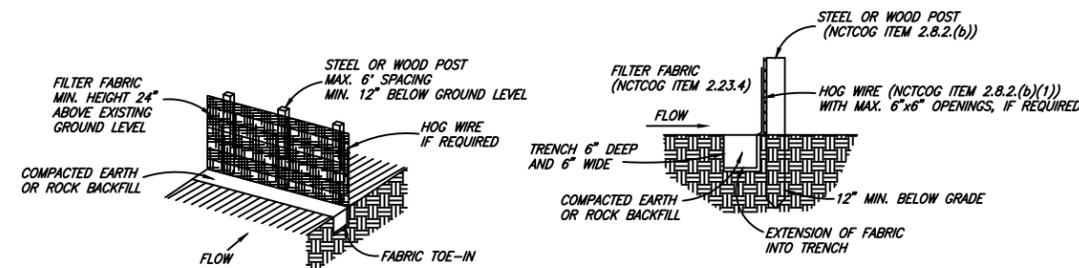


STEEL PLATE FLUME COVER
 PLATE THICKNESS SHALL BE 5/8 INCHES
 BASE ON 100 P.S.I. LIVE LOAD AND MAX.
 DEAD & LIVE LOAD DEFLECTION OF 1/240.
 BOLT PLATE DOWN WITH BRASS BOLTS.
 BOLTS SHALL BE 1/2\"/>

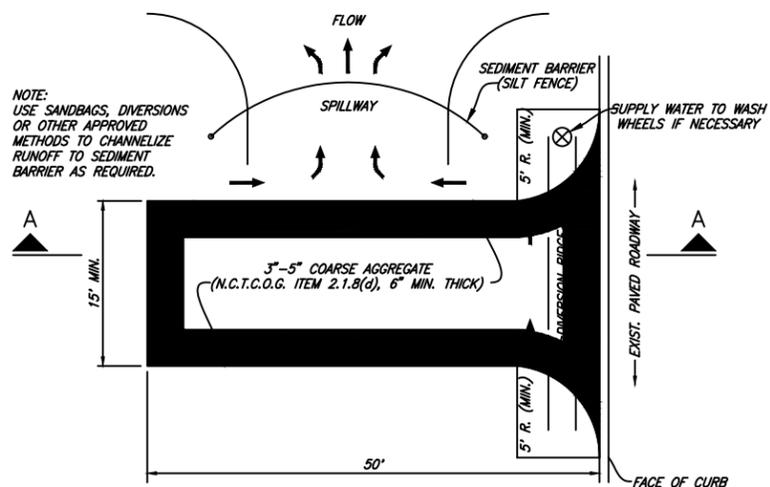
REINFORCED CONCRETE FLUME WITHOUT CURBS
 (FLUMESEC)

FRENCH DRAIN

REINFORCED CONCRETE FLUME WITH CURBS
 (FLUME)

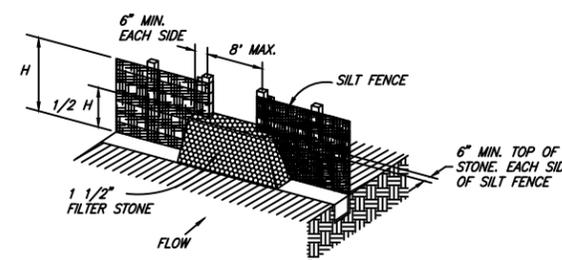


SILT FENCE DETAIL



CONSTRUCTION ENTRANCE ROAD FOR EROSION CONTROL

NO SCALE
 (ENTRANCE)



STONE OVERFLOW STRUCTURE

LOCATION AS CALLED FOR IN PLANS

- NOTES:
- 1) THE CONTRACTOR SHALL INSPECT SILT FENCE WEEKLY AND AFTER MAJOR RAIN EVENTS TO ENSURE THAT THE DEVICE IS FUNCTIONING PROPERLY AND MAINTAIN IN ACCORDANCE WITH NCTCOG ITEM 3.12.
 - 2) THE CONTRACTOR SHALL REMOVE SEDIMENT FROM BEHIND FENCE WHEN THE DEPTH OF SEDIMENT HAS BUILT UP TO ONE-THIRD THE HEIGHT OF THE FENCE ABOVE GRADE.
 - 3) THE CONTRACTOR SHALL INSPECT THE BASE OF THE FENCE TO ENSURE THAT NO GAPS HAVE DEVELOPED AND RE-TRENCH AS NECESSARY.
 - 4) THE CONTRACTOR SHALL INSPECT FENCE POSTS TO ENSURE THAT THEY ARE PROPERLY SUPPORTING THE FENCE. IF NECESSARY, THE CONTRACTOR SHALL RESET AND ADD POSTS.
 - 5) IF FILTER FABRIC IS RIPPED, DAMAGED OR DETERIORATED, THE CONTRACTOR SHALL REPLACE IT IN ACCORDANCE WITH THE ORIGINAL SPECIFICATIONS AND DETAILS. (MAINTENANCE OF THE SILT FENCE SHALL BE AT THE CONTRACTORS OWN EXPENSE)

EROSION CONTROL

(SILT-DTL)



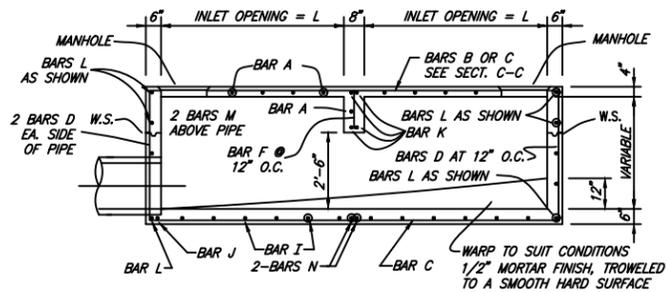
CITY OF DENISON, TEXAS

STANDARD CONSTRUCTION DETAILS
 CONCRETE FLUME / EROSION CONTROL

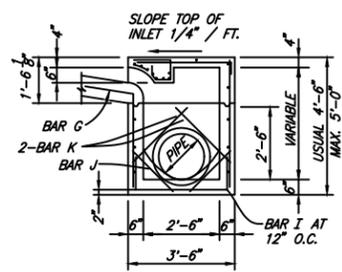
**AUGUST
 2025**

SHEET NO.

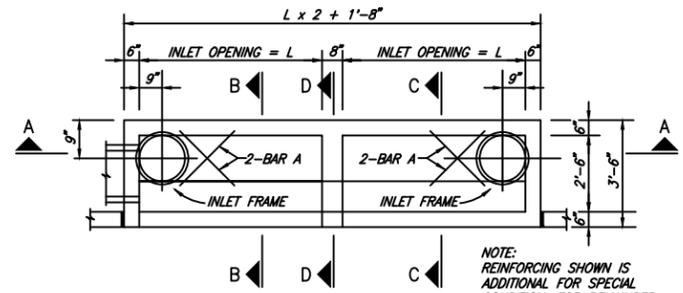
11



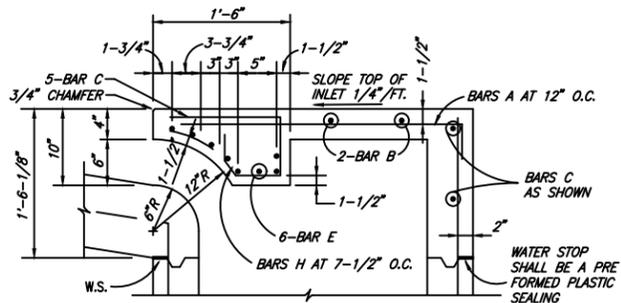
SECTION A-A
15 AND 20 FOOT INLETS
(SECT_A-A)



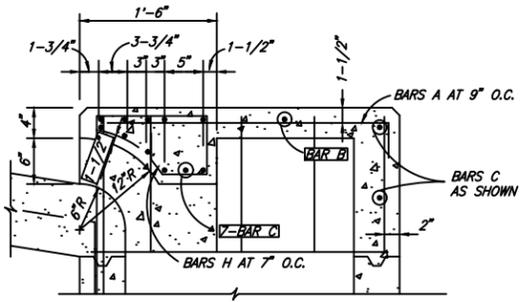
SECTION B-B
(SECT_B-B)



PLAN
20 FOOT INLETS
(PLAN_20)



SECTION C-C
(SECT_C-C)



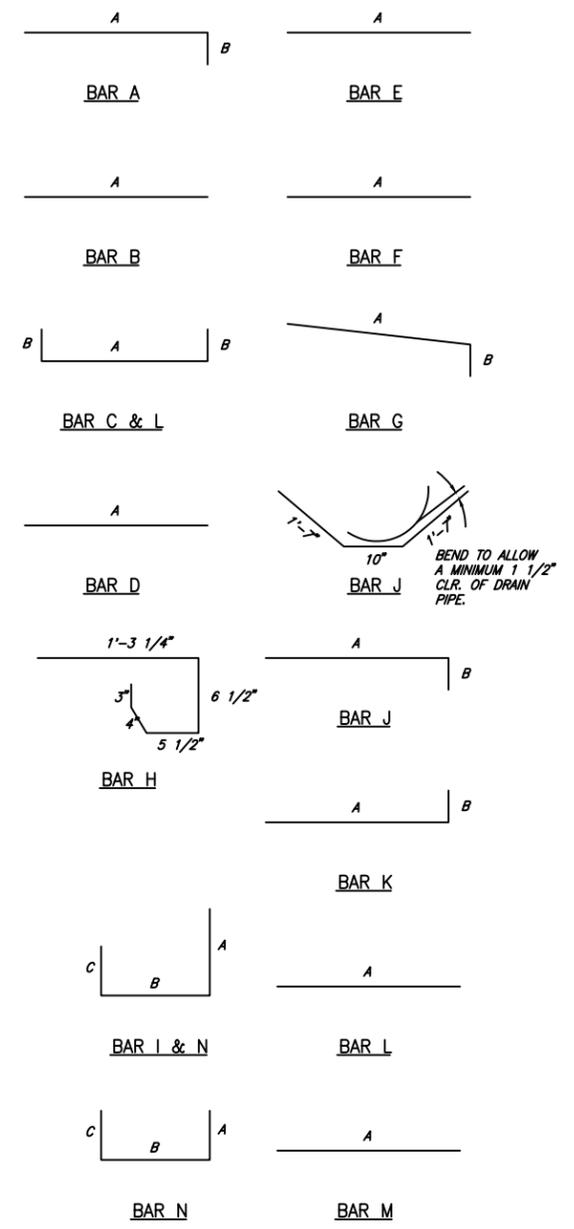
SECTION D-D
(SECT_D-D)

DOUBLE INLETS
DIMENSIONS SHOWN ARE FOR MAXIMUM SIZE INLETS

INLET LENGTH	BAR TYPE	BAR DIA. (1/8 IN.)	NO. REQ'D	BAR DIMENSIONS		
				A	B	C
7.5 FT.	A	3	18	3'-2"	0'-6"	-
	B	3	2	14'-6"	-	-
	C	4	16	16'-4"	0'-6"	-
	D	4	9	4'-8"	-	-
	E	5	6	16'-4"	-	-
	F	4	5	1'-2"	-	-
	G	3	15	2'-0"	1'-3"	-
	H	3	26	*	*	*
	I	4	15	4'-8"	3'-2"	3'-2"
	J	5	1	*	*	*
10 FT.	A	3	23	3'-2"	0'-6"	-
	B	3	2	19'-6"	-	-
	C	4	16	21'-4"	0'-6"	-
	D	4	9	4'-8"	-	-
	E	5	6	21'-4"	-	-
	F	4	5	1'-2"	-	-
	G	3	15	2'-0"	1'-3"	-
	H	3	32	*	*	*
	I	4	20	4'-8"	3'-2"	3'-2"
	J	5	1	*	*	*
16' AND 20'	K	5	6	3'-2"	0'-6"	-
	L	4	11	3'-2"	0'-6"	-
	M	4	2	3'-0"	**	-
	N	4	2	4'-8"	3'-2"	4'-8"

* SEE DIAGRAM FOR DIMENSIONS.
** FIELD CUT AS REQUIRED TO ACCOMMODATE DRAIN PIPE 16' AND 20' INLETS

REINFORCING STEEL SCHEDULE



△ BEND TO ALLOW A MINIMUM 1 1/2" CIR. OF DRAIN PIPE
* SEE DIAGRAMS FOR DIMENSIONS
** FIELD CUT AS REQUIRED TO ACCOMMODATE DRAIN PIPE

BAR BENDING DIAGRAMS

(BARLIST2)

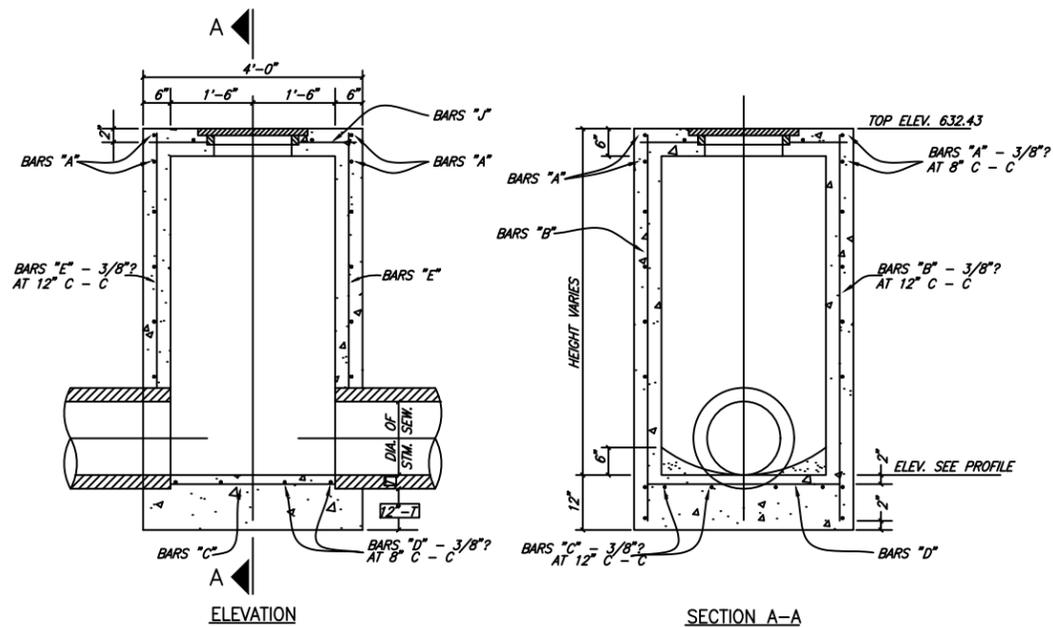


CITY OF DENISON, TEXAS

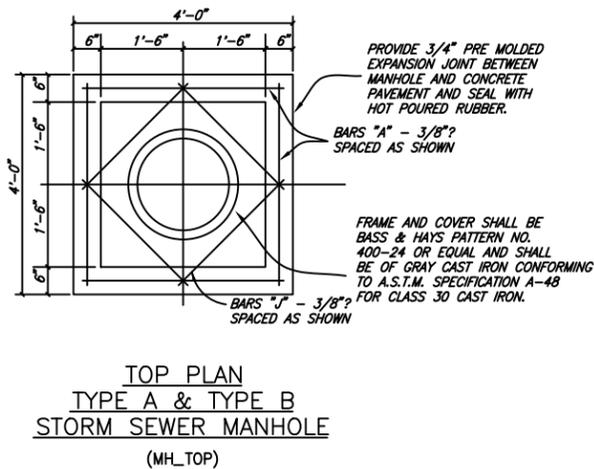
STANDARD CONSTRUCTION DETAILS
STORM SEWER / INLET

AUGUST 2025

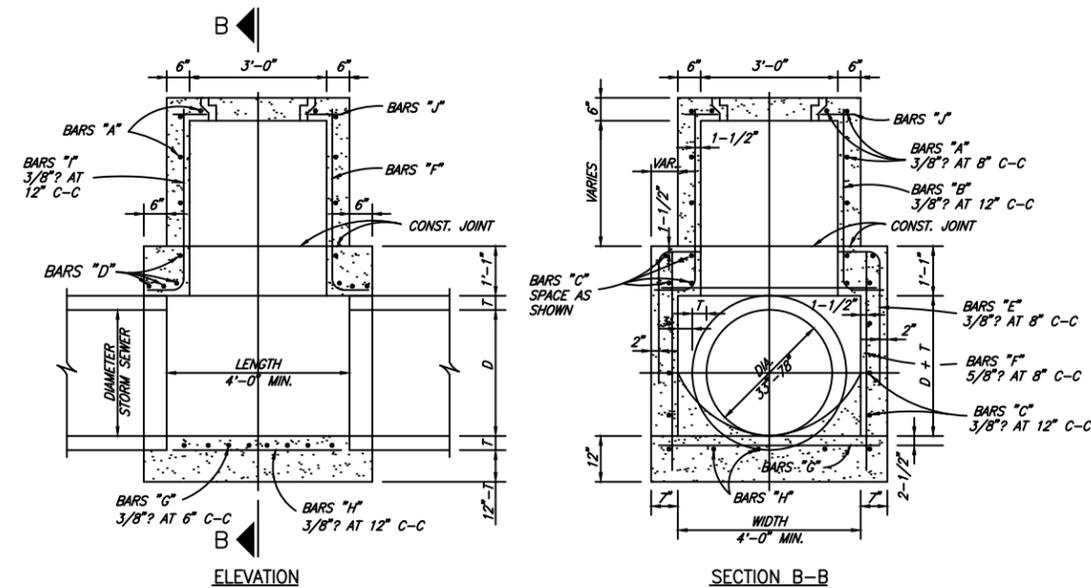
SHEET NO.
14



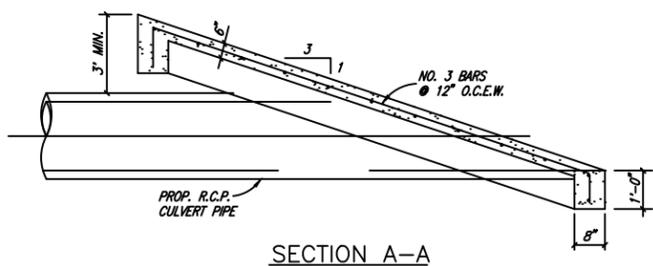
STORM SEWER TYPE A MANHOLE
MAX. PIPE SIZE 30"
(TYPEAMH)



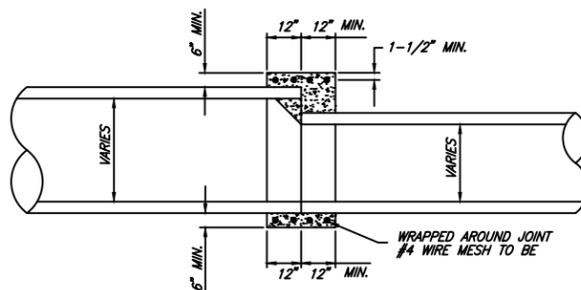
TOP PLAN
TYPE A & TYPE B
STORM SEWER MANHOLE
(MH_TOP)



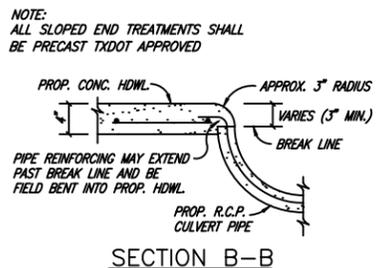
TYPE B STORM SEWER MANHOLE
MAX. PIPE SIZE 78"
(TYPEBMH)



SECTION A-A



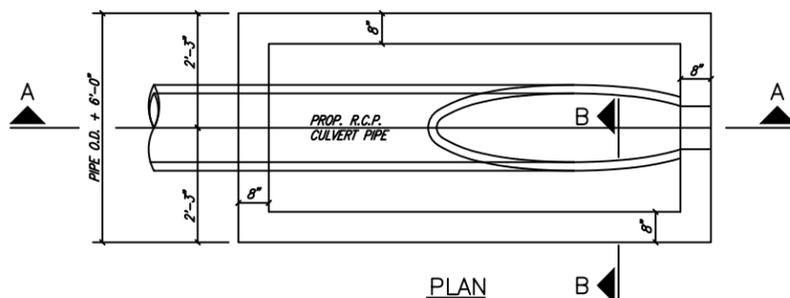
DETAIL OF CONCRETE COLLAR
FOR R.C.P. OR R.C.A.P. CONNECTIONS
INSIDE JOINT SHALL BE CONCRETE MORTAR
(CONCCOL)



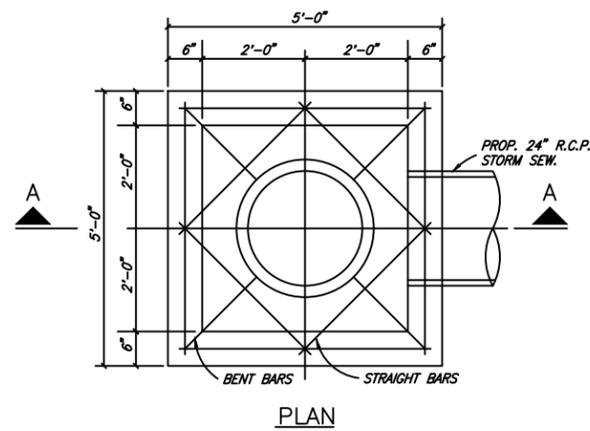
SECTION B-B

NOTE:
ALL SLOPED END TREATMENTS SHALL
BE PRECAST TxDOT APPROVED

PROP. CONC. HDWL.
APPROX. 3" RADIUS
VARIES (3" MIN.)
BREAK LINE
PIPE REINFORCING MAY EXTEND
PAST BREAK LINE AND BE
FIELD BENT INTO PROP. HDWL.
PROP. R.C.P.
CULVERT PIPE

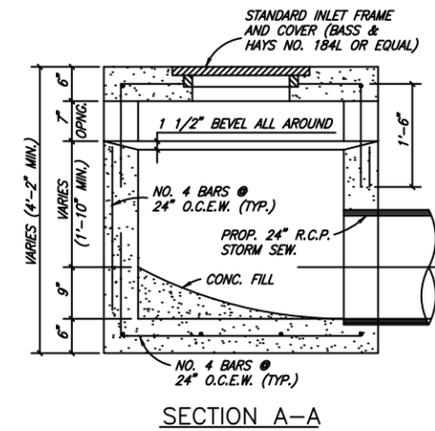


SLOPED CONCRETE HEADWALL
(SLOPEHWL)



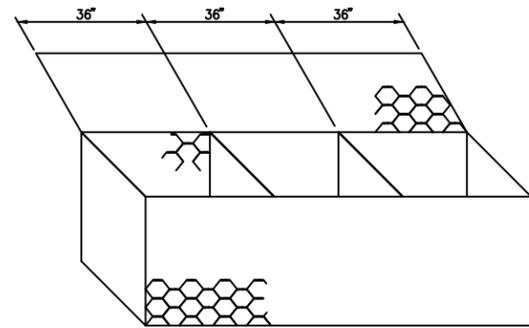
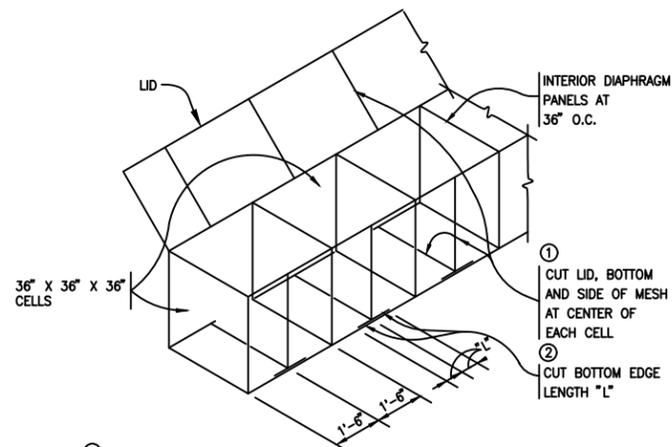
PLAN

STANDARD DROP INLET
(DROPINLET)



SECTION A-A

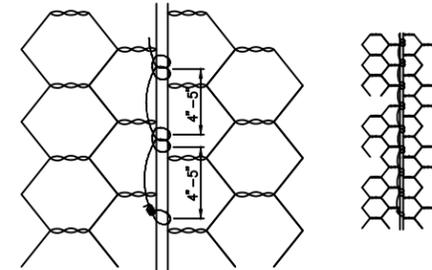




GABION CONTAINER

N.T.S.

NOTE: GABION MAY BE CUT BUT SHALL BE RETIED IN A MANNER TO PRODUCE A CLOSED CELL AND ALL TIES SHALL BE IN CONFORMANCE WITH DETAILS

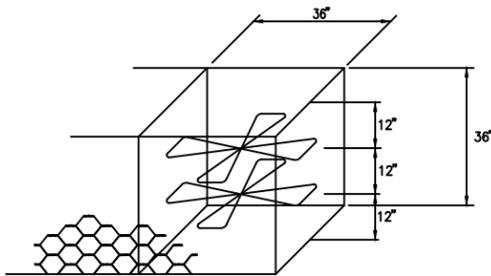


GABION TIE

N.T.S.

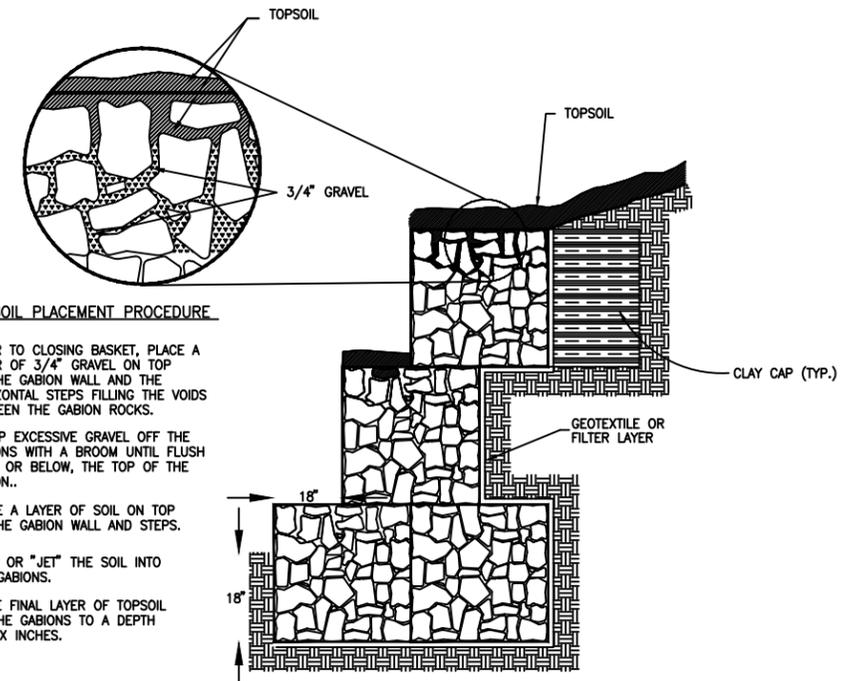
NOTE: ALL TYING OF GABIONS SHALL BE AS SHOWN

(GABION)



INNER TIE WIRE

N.T.S.



TOPSOIL PLACEMENT PROCEDURE

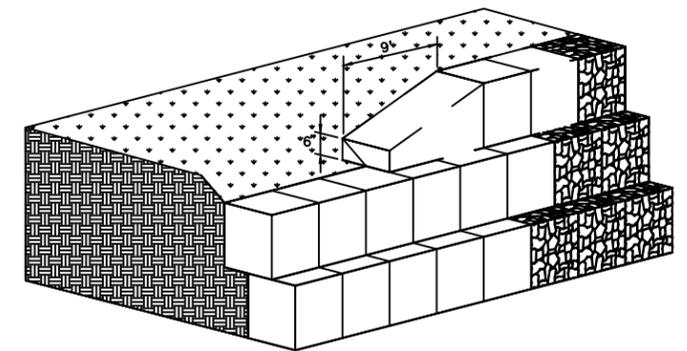
1. PRIOR TO CLOSING BASKET, PLACE A LAYER OF 3/4" GRAVEL ON TOP OF THE GABION WALL AND THE HORIZONTAL STEPS FILLING THE VOIDS BETWEEN THE GABION ROCKS.
2. SWEEP EXCESSIVE GRAVEL OFF THE GABIONS WITH A BROOM UNTIL FLUSH WITH, OR BELOW, THE TOP OF THE GABION.
3. PLACE A LAYER OF SOIL ON TOP OF THE GABION WALL AND STEPS.
4. WASH OR "JET" THE SOIL INTO THE GABIONS.
5. PLACE FINAL LAYER OF TOPSOIL ON THE GABIONS TO A DEPTH OF SIX INCHES.

SECTION

NOTE: DO NOT USE SHARP TOOLS WHEN SPREADING TOPSOIL ON GABIONS

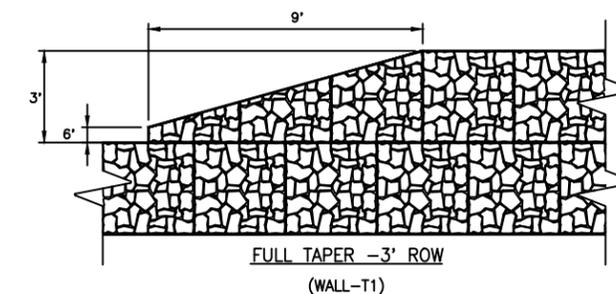
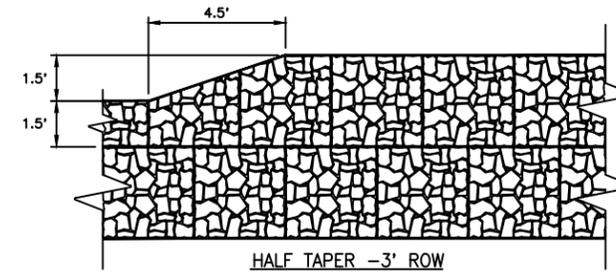
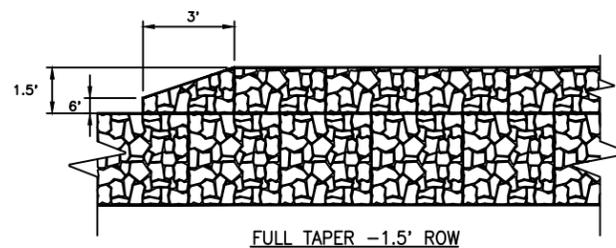
VEGETATED GABION WALL TOPSOIL PLACEMENT

(VEG-WALL)

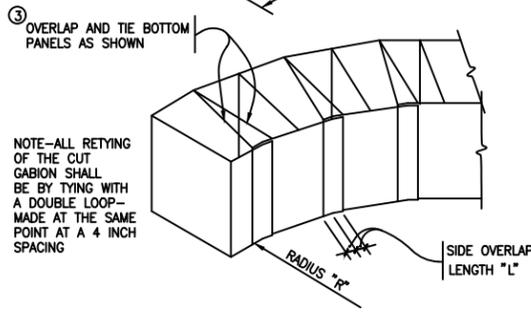


STANDARD TAPER FOR WALL HEIGHT TRANSITIONS

(TAPER-1)

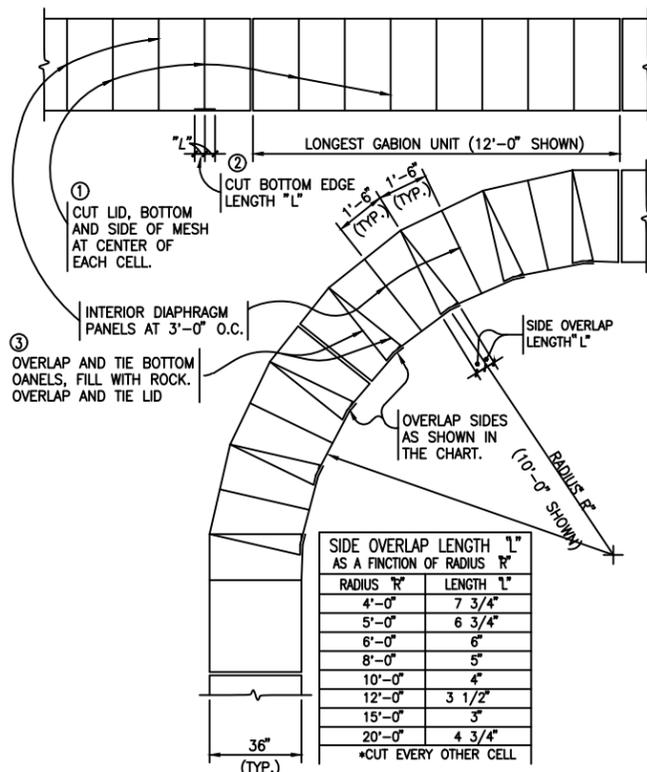


TAPERED WALL HEIGHT TRANSITION



GABION RADIUS PROCEDURE

(RADIUS1)



GABION RADIUS PROCEDURE

SIDE OVERLAP LENGTH "L" AS A FUNCTION OF RADIUS "R"	
RADIUS "R"	LENGTH "L"
4'-0"	7 3/4"
5'-0"	6 3/4"
6'-0"	6"
8'-0"	5"
10'-0"	4"
12'-0"	3 1/2"
15'-0"	3"
20'-0"	4 3/4"

*CUT EVERY OTHER CELL



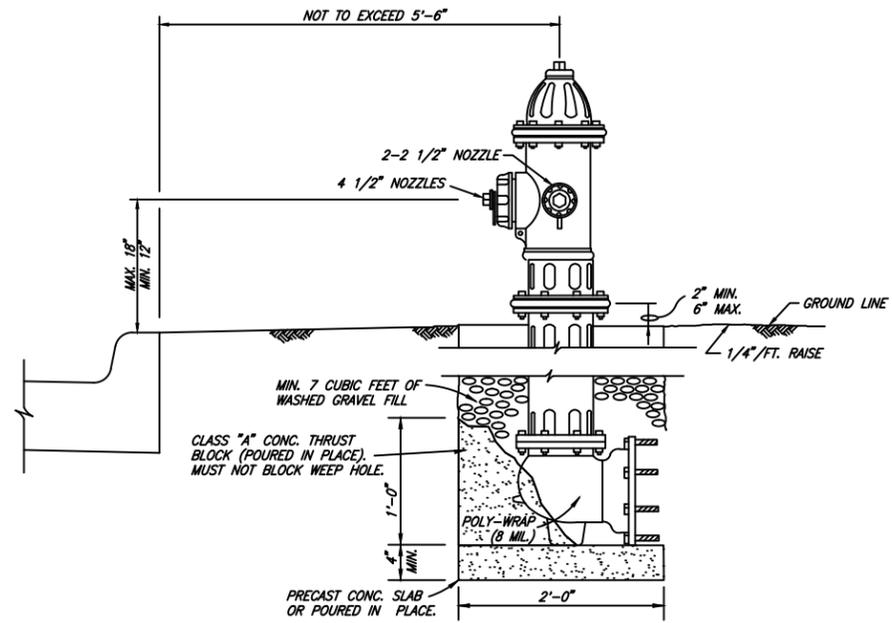
CITY OF DENISON, TEXAS

STANDARD CONSTRUCTION DETAILS
CHANNELS / GABIONS

**AUGUST
2025**

SHEET NO.

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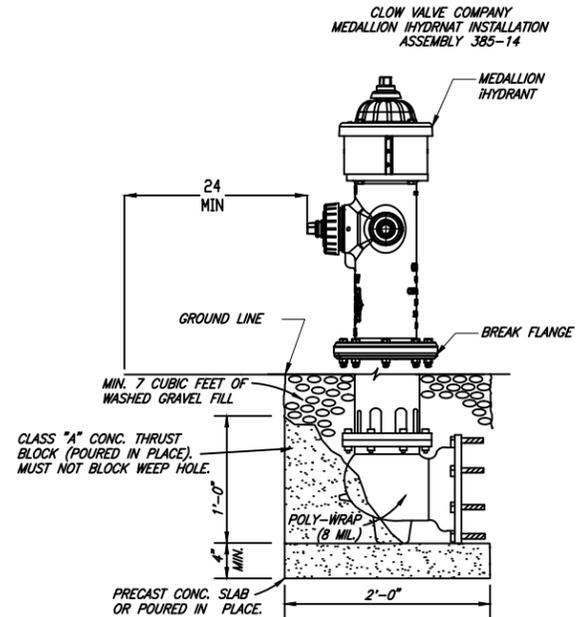
TYPICAL FIRE HYDRANT
(FIREHYD)

FIRE HYDRANT NOTES:

1. IN GENERAL ALL FIRE HYDRANTS SHALL CONFORM TO ANMA STANDARDS SPECIFICATIONS FOR FIRE HYDRANTS FOR ORDINARY WATER WORKS SERVICE FOR WATER AND SANITARY SEWER IMPROVEMENTS. FIRE HYDRANTS SHALL HAVE A 5-1/4" MINIMUM VALVE OPENING AND WITH A BARREL APPROXIMATELY 7" INSIDE DIAMETER. ALL HYDRANTS SHALL BE APPROVED BY THE CITY.
2. GUARD POSTS SHALL BE 6 L.F. OF 6" DIA. STEEL PIPE (3" ABOVE & BELOW GROUND LEVEL). POST SHALL BE ENCASED IN 16" DIA. CONC. PIER TO A DEPTH OF 12" BELOW POST BOTTOM. REINF. CONC. PIER WITH 2 NO. 6 BARS (12" LONG) THRU POST INTO PIER. POST ABOVE GROUND LEVEL SHALL HAVE 2-2 INCH BANDS OF RED AND WHITE REFLECTIVE TAPE.
3. 1 IN 4 OF HYDRANTS WITHIN A DEVELOPMENT PROJECT SHOULD BE CLOW HYDRANTS ALL HYDRANTS SHOULD BE ORDERED POWDER COATED SILVER IN COLOR. TNEVEC SERIES 43-3BH DIFFUSED ALUMINUM, SILVER OR EQUIVALENT
4. HYDRANTS SHALL OPEN LEFT AND HAVE A HEX OPERATING NUT
5. FIRE HYDRANT SHOULD BE ONE OF THE FOLLOWING BRANDS/ MODELS (STEEL UPPER & LOWER STEMS ARE REQUIRED)
CLOW MEDALLION
M&H
5-1/4" WATEROUS PACER HYDRANT
6. A BLUE STEMSONITE (OR APPROVED OTHER) MODEL 88-SSA FIRE HYDRANT MARKER WILL BE INSTALLED OPPOSITE FIRE HYDRANTS JUST OFF CENTER TO THE SIDE OF THE STREET ADJACENT TO THE HYDRANT.
7. ANY NEW HYDRANTS SHALL HAVE A PRESSURE TEST PERFORMED PER TCEQ STANDARDS

FIRE HYDRANT PAINTING SCHEMES			
CLASS	RATED CAPACITY	BONNET COLOR	BODY COLOR
AA	1,500 GPM OR GREATER	LIGHT BLUE	SILVER
A	1,000-1,499 GPM	GREEN	SILVER
B	1,000-1,499 GPM	ORANGE	SILVER
C	101-499 GPM	RED	SILVER
OUT OF SERVICE	LESS THAN 100 GPM	BLACK	BLACK
PRIVATE	N/A	RED	RED
REUSE	N/A	PURPLE	PURPLE

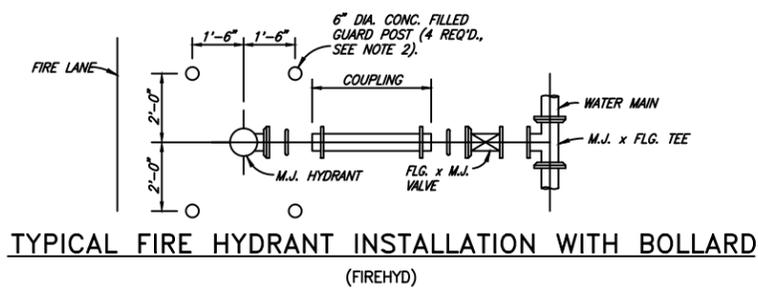
RUSt-OLEUM PAINTS ARE NOT PERMITTED



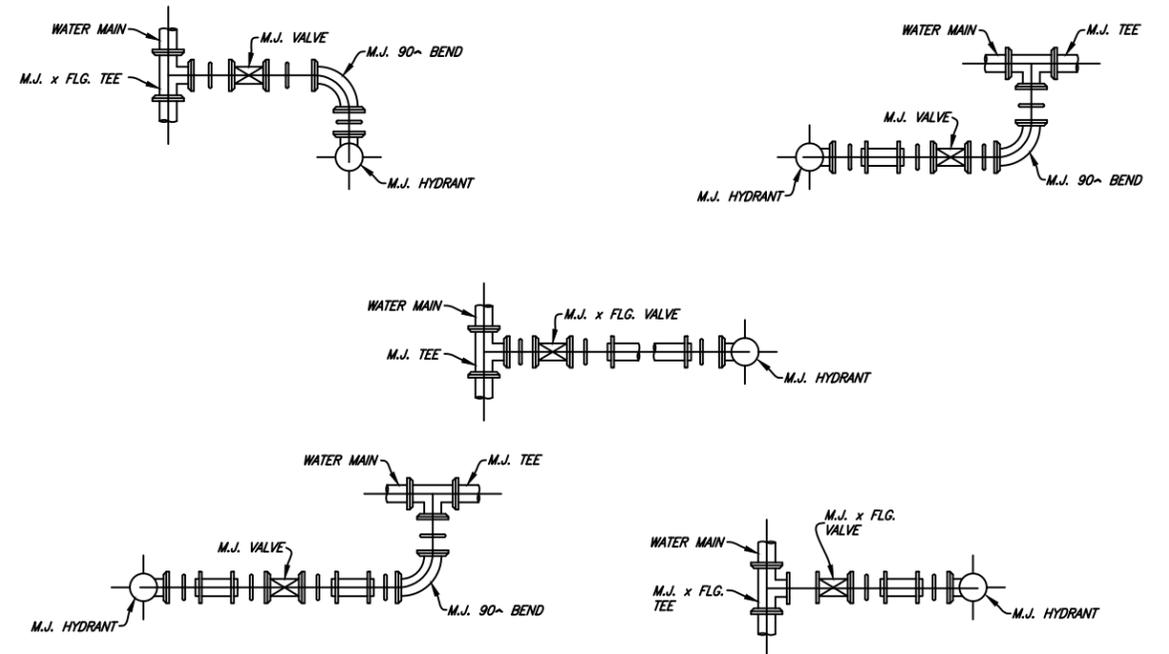
SMART FIRE HYDRANT
(FIREHYD)

FIRE HYDRANT FLOW TESTING

1. FIRE HYDRANTS SHOULD BE FLOWED YEARLY
2. A FLUSHING SCHEDULE MUST BE DEVELOPED AND COMMUNICATED IN ADVANCE WITH THE WATER PLANT
3. INSPECTION
4. FLOW TEST
5. MAINTENANCE
6. FIRE HYDRANTS AND BONNETS WILL BE PAINTED TO MATCH THE TABLE ABOVE
7. NUMBER FIRE HYDRANT
8. UPDATE INVENTORY SPREADSHEET AND MAPS



TYPICAL FIRE HYDRANT INSTALLATION WITH BOLLARD
(FIREHYD)



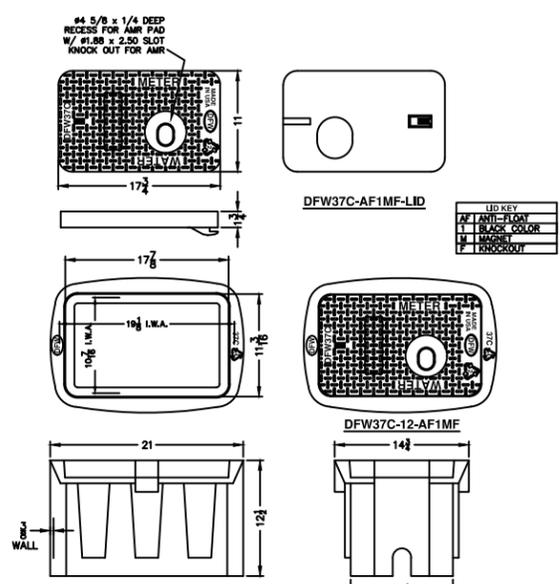
TYPICAL FIRE HYDRANT INSTALLATION PLANS
(FH-PLANS)



CITY OF DENISON, TEXAS
STANDARD CONSTRUCTION DETAILS
WATER SERVICES / FIRE HYDRANT
SHEET DESCRIPTION

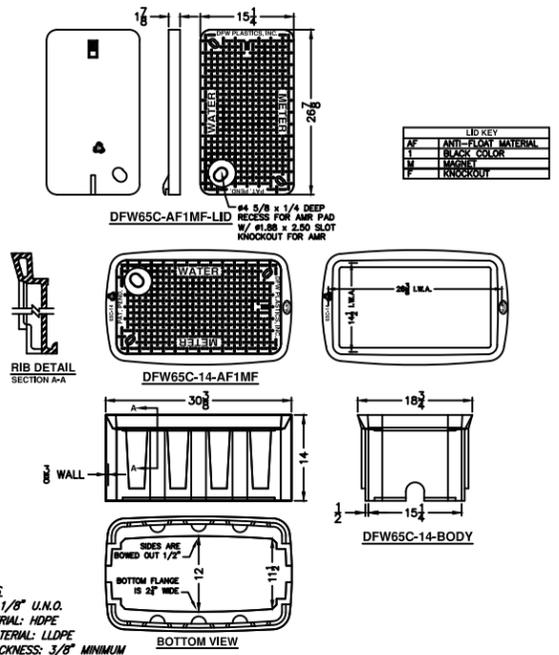
AUGUST 2025

SHEET NO.
18



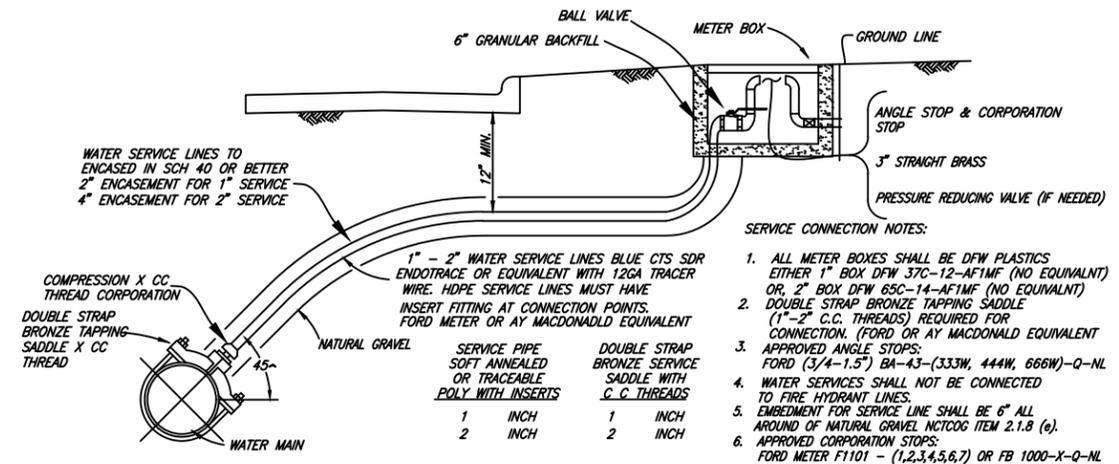
- NOTES**
- 1) DIM'S : 1/8" U.N.O.
 - 2) LID MATERIAL: ANTI-FLOAT
 - 3) BODY MATERIAL: LLDPE
 - 4) WALL THICKNESS: 3/8" MINIMUM
 - 5) I.W.A. = INSIDE WORK AREA
 - 6) METER BOX SHALL BE DFW PLASTICS MODEL DFW37C-12-AF1MF

TYPICAL 12" METER BOX
(WATER METER)

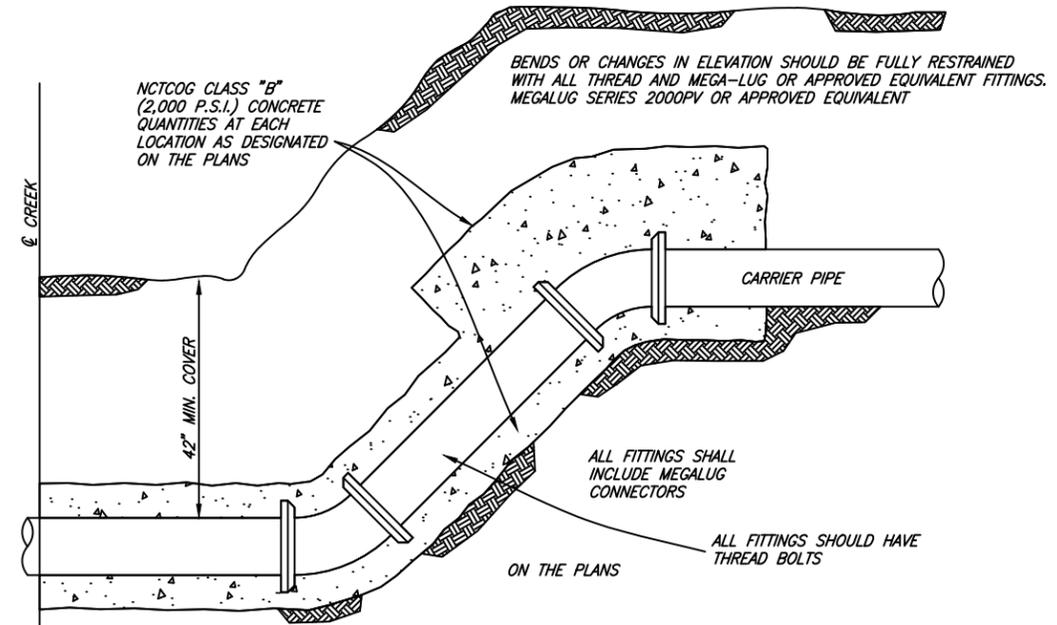


- NOTES**
- 1) DIM'S : 1/8" U.N.O.
 - 2) LID MATERIAL: HDPE
 - 3) BODY MATERIAL: LLDPE
 - 4) WALL THICKNESS: 3/8" MINIMUM
 - 5) I.W.A. = INSIDE WORK AREA
 - 6) METER BOX SHALL BE DFW PLASTICS MODEL DFW37C-12-AF1MF

TYPICAL 14" METER BOX
(WATER METER)



TYPICAL SERVICE CONNECTION WITH METER BOX
(WATERSVC)



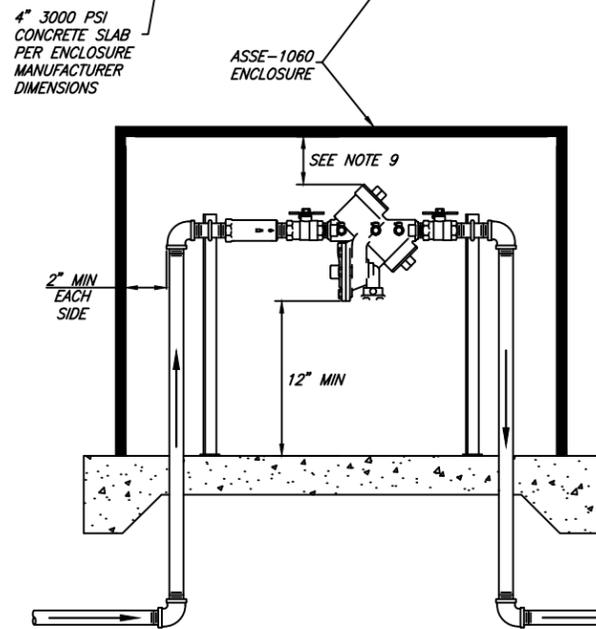
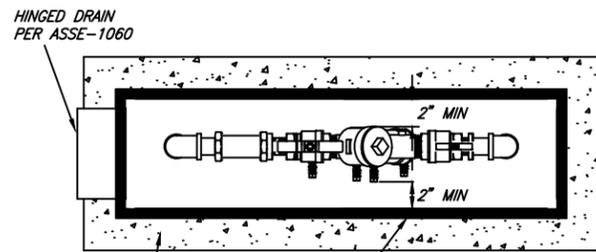
HALF-SECTION TYPICAL CREEK CROSSING
(CREEK V)



CITY OF DENISON, TEXAS
STANDARD CONSTRUCTION DETAILS
WATER SERVICES
SHEET DESCRIPTION

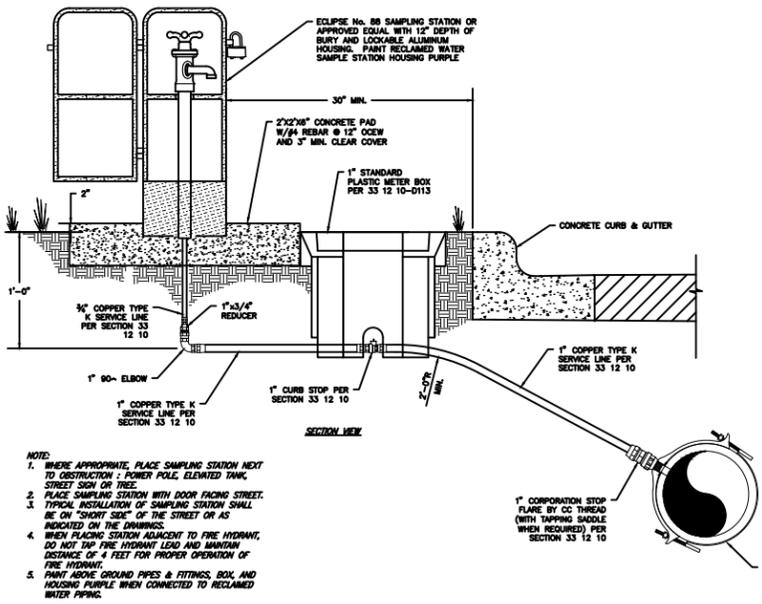
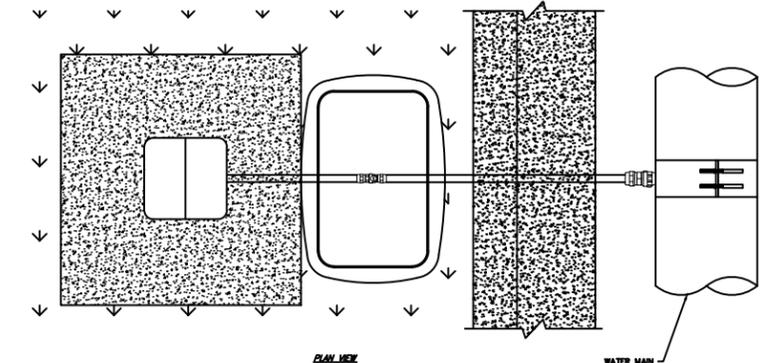
AUGUST 2025

SHEET NO.
19



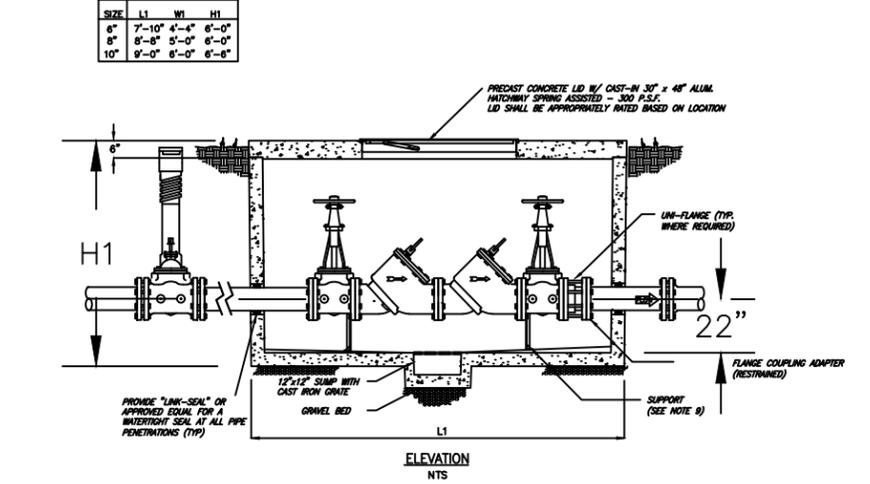
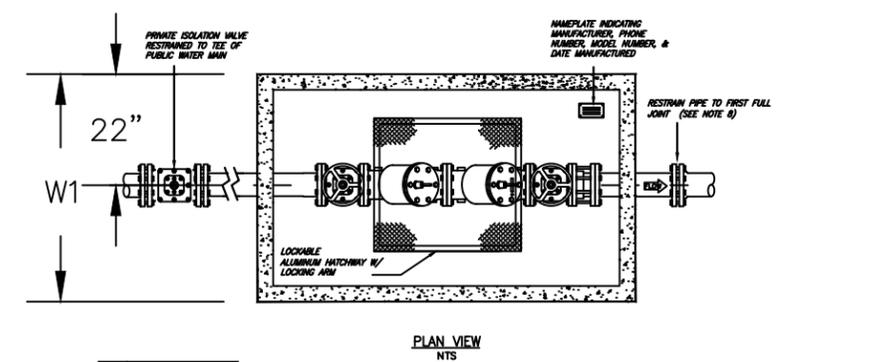
DOUBLE CHECK ASSEMBLY (3/4IN-2IN)
(OUTDOOR DETAIL)

- GENERAL NOTES:**
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF DENISON (COD) STANDARD DESIGN MANUAL FOR WATER & SEWER CONSTRUCTION, LATEST EDITION.
 - THE ASSEMBLY SHALL MEET THE REQUIREMENTS OF ASSE 1013, REDUCED PRESSURE ZONE (RPZ) BACKFLOW PREVENTER ASSEMBLY (BPA); IN A SIZE TO MATCH THAT OF THE REQUIRED METER AND/OR SERVICE PIPING, AND SHALL CONFORM TO ALL CURRENT REQUIREMENTS OF THE UNIVERSITY OF SOUTHERN CALIFORNIA, FOUNDATION FOR CROSS-CONNECTION CONTROL & HYDRAULIC RESEARCH (USC-FCCHR).
 - ANY VARIATIONS FROM THIS DETAIL MUST BE APPROVED BY DENISON WATER UTILITIES.
 - IF THIS BACKFLOW ASSEMBLY IS FOR CONTAINMENT, OR PREMISE ISOLATION, OWNER ACKNOWLEDGES THAT ITS PRESENCE ON THE PROPERTY DOES NOT DIMINISH MITIGATE OR REMOVE OWNER'S OBLIGATION TO SATISFY THE ISOLATION OR POINT OF USE REQUIREMENTS Laid Out IN TITLE 33, CHAPTER 280 OF THE ADMINISTRATIVE CODE AND ON OTHER RELEVANT GUIDELINES REQUIRED BY THE STATE OF TEXAS OR THE CITY OF DENISON.
 - IT IS THE RESPONSIBILITY OF ANY PERSON WHO OWNS OR CONTROLS PROPERTY TO ELIMINATE THE POSSIBILITY OF THERMAL EXPANSION IF A CLOSED SYSTEM HAS BEEN CREATED BY THE INSTALLATION OF A BACKFLOW ASSEMBLY.
- LOCATION:**
- THE ENCLOSURE SHALL BE LOCATED ON THE OWNER'S PROPERTY IN A LOCATION ACCESSIBLE TO CITY PERSONNEL FOR INSPECTION.
 - THERE SHALL BE NO TAPS, PIPE BRANCHES, UNAPPROVED BYPASS PIPING, HYDRANTS, FIRE DEPARTMENT CONNECTION POINTS, OR OTHER WATER-USING APPURTENANCES CONNECTED TO THE SUPPLY LINE BETWEEN ANY WATER METER AND ITS CITY REQUIRED BPA.
- ENCLOSURE:**
- ASSEMBLY SHALL NOT BE BURIED IN EARTH OR IN ANY LOCATION SUBJECT TO FLOODING, BUT INSTALLED ABOVE GROUND IN A FREEZE-PROTECTED ENCLOSURE MEETING THE ASSE-1060 SPECIFICATION AND APPLICABLE CITY PLUMBING AND BUILDING CODES.
 - INTERIOR CLEARANCES AROUND THE ASSEMBLY SHALL BE NO LESS THAN 2 INCHES AND INTERIOR ROOF CLEARANCE SHALL BE NO LESS THAN 1 INCH EXCEPT THAT ANY VALVE HANDLE/WHEEL OR TEST COCK SHALL HAVE 6 INCHES OF CLEARANCE FROM ANY WALL OR ROOF.
 - ABOVEGROUND ENCLOSURES SHALL BE SCREENED WITH LANDSCAPE PLANT MATERIAL IN ACCORDANCE WITH CITY SPECIFICATIONS. PLANT MATERIAL MUST BE MAINTAINED BY OWNER IN A MANNER SUFFICIENT TO ENSURE ACCESS FOR BPA INSPECTION AND MAINTENANCE.
- INSTALLATION:**
- PIPE MATERIAL AND FITTINGS SHALL BE AS SPECIFIED IN CITY STANDARDS AND SPECIFICATIONS.
 - ISOLATION VALVES ARE SPECIFIC TO EACH APPROVED BPA AND NO SUBSTITUTION OF ISOLATION VALVES ARE PERMITTED.
 - SUPPORT FOR ASSEMBLY SHALL BE DESIGNED BY OWNER SUCH THAT ASSEMBLY WEIGHT DOES NOT DESTABILIZE STRUCTURAL INTEGRITY AND SHALL NOT BLOCK RELIEF VALVE ON DRAIN PORT.
- TESTING:**
- EACH COD REQUIRED BACKFLOW PREVENTER MUST BE TESTED BY A CITY APPROVED CERTIFIED TESTER PRIOR TO PLACING THE WATER SYSTEM IN SERVICE.
 - ALL RPZ-BPA ASSEMBLIES SHALL BE TESTED AT TIME OF INSTALLATION AND AT LEAST ANNUALLY THEREAFTER.
 - MAINTENANCE AND UPKEEP OF ALL BACKFLOW PREVENTION EQUIPMENT SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNER.



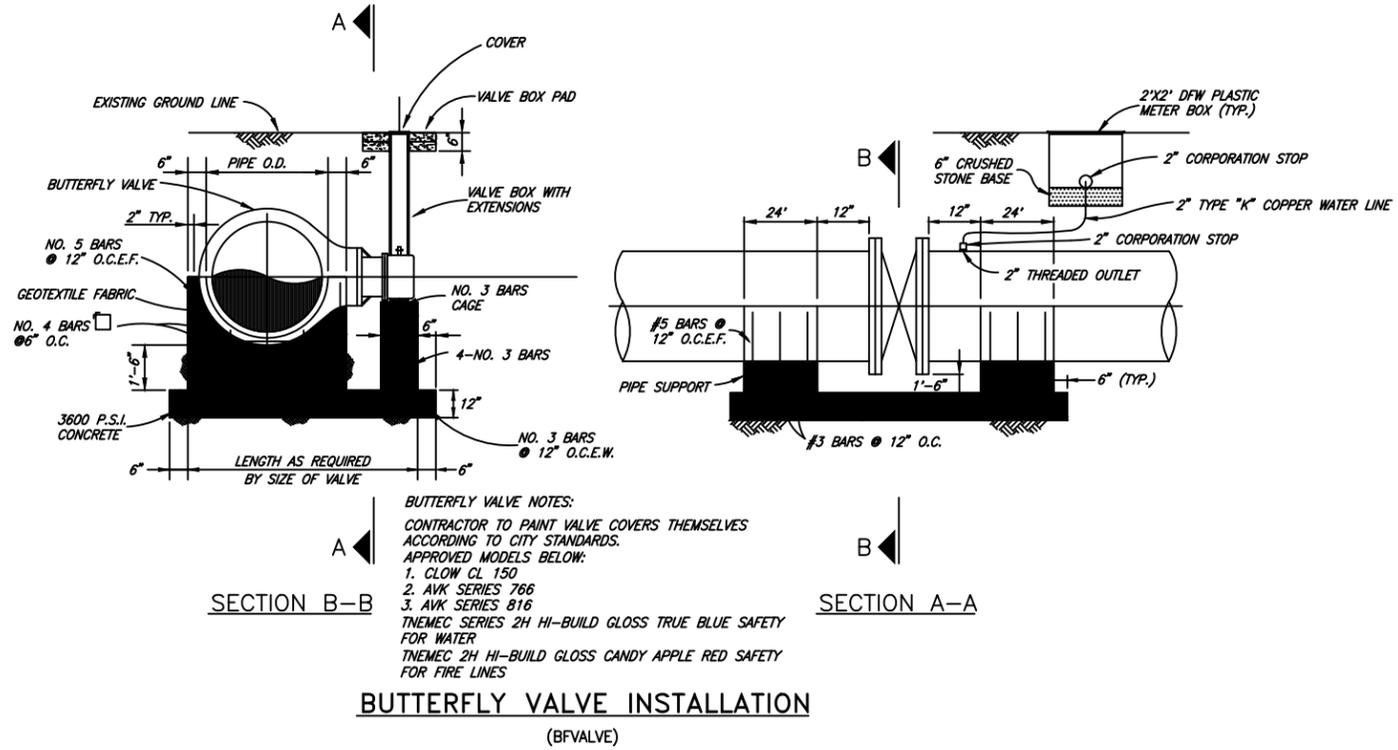
WATER SAMPLE STATION
(SAMPLE STA)

- NOTE:**
- WHERE APPROPRIATE, PLACE SAMPLING STATION NEXT TO OBSTRUCTION - POWER POLE, ELEVATED TANK, STREET SIGN OR TREE.
 - PLACE SAMPLING STATION WITH DOOR FACING STREET.
 - TYPICAL INSTALLATION OF SAMPLING STATION SHALL BE ON "SHORT SIDE" OF THE STREET OR AS INDICATED ON THE DRAWINGS.
 - WHEN PLACING STATION ADJACENT TO FIRE HYDRANT, DO NOT TAP FIRE HYDRANT LEAD AND MAINTAIN DISTANCE OF 4 FEET FOR PROPER OPERATION OF FIRE HYDRANT.
 - PAINT ABOVE GROUND PIPES & FITTINGS, BOX, AND HOUSING PURPLE WHEN CONNECTED TO RECLAIMED WATER PIPING.



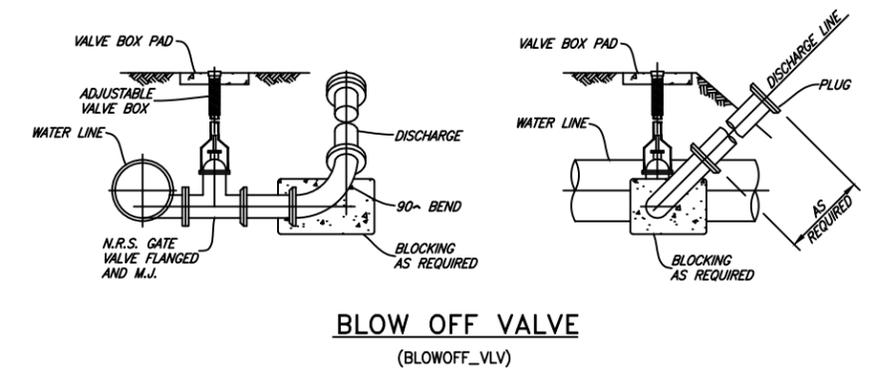
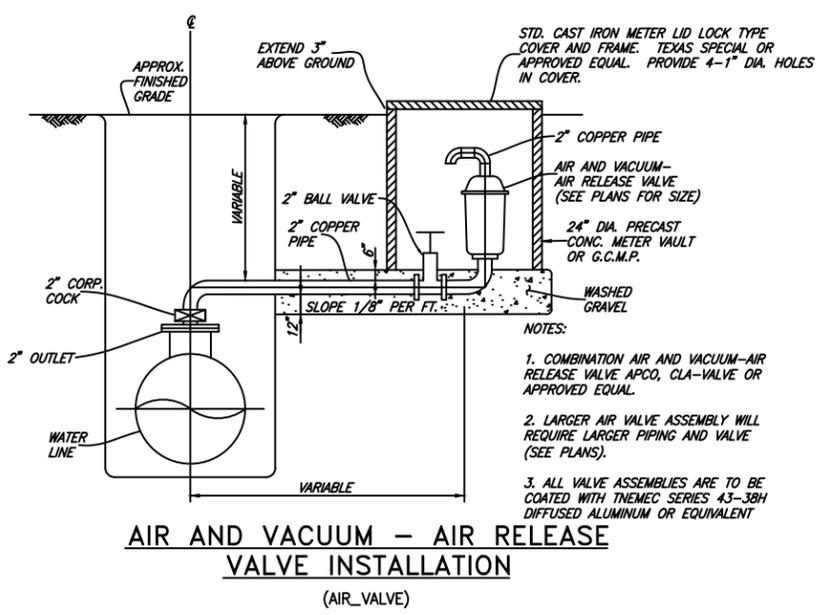
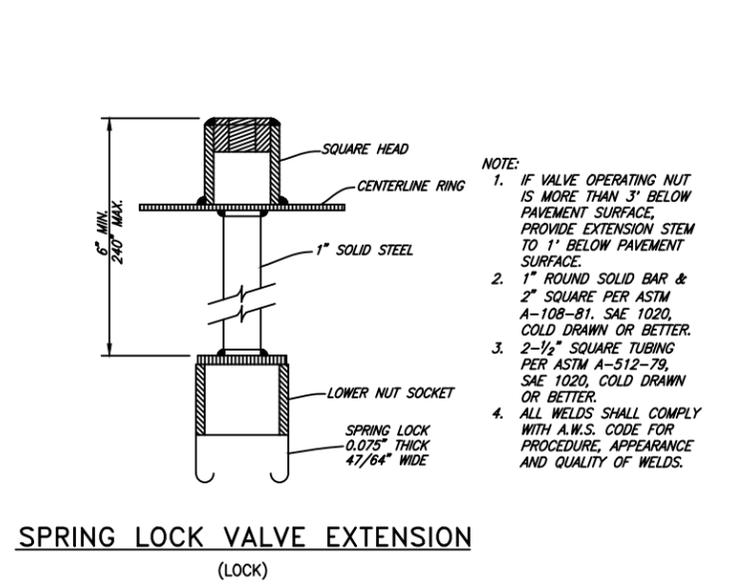
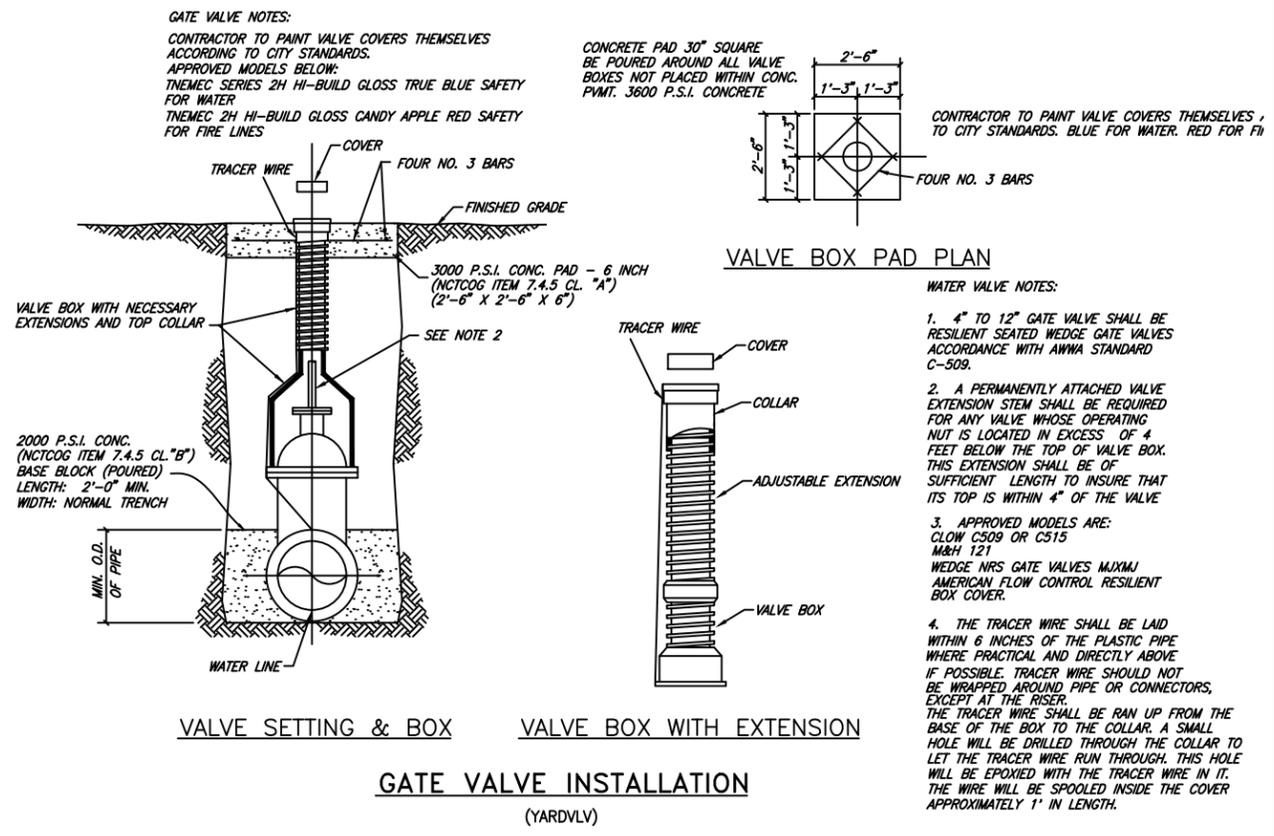
DOUBLE CHECK ASSEMBLY (3"-10")
(IRRIGATION DC INGROUND)

- GENERAL NOTES:**
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF DENISON (COD) STANDARD SPECIFICATIONS FOR WATER & SEWER CONSTRUCTION LATEST EDITION.
 - THE BACKFLOW PREVENTION ASSEMBLY (BPA) SHALL MEET THE REQUIREMENTS OF ASSE 1044, DOUBLE CHECK ASSEMBLY (DCA) IN A SIZE TO MATCH THAT OF THE REQUIRED METER AND/OR SERVICE PIPING, AND SHALL CONFORM TO ALL CURRENT REQUIREMENTS OF THE UNIVERSITY OF SOUTHERN CALIFORNIA, FOUNDATION FOR CROSS-CONNECTION CONTROL & HYDRAULIC RESEARCH (USC-FCCHR).
 - ANY VARIATIONS FROM THIS DETAIL MUST BE APPROVED BY DENISON WATER UTILITIES.
- LOCATION:**
- THE VAULT SHALL BE LOCATED ON THE OWNER'S PROPERTY IN A LOCATION ACCESSIBLE TO CITY PERSONNEL DURING NORMAL WORKING HOURS FOR INSPECTION OF THE ASSEMBLY AND READING OF THE METER.
 - THERE SHALL BE NO TAPS, PIPE BRANCHES, UNAPPROVED BYPASS PIPING, HYDRANTS, FIRE DEPARTMENT CONNECTION POINTS, OR OTHER WATER-USING APPURTENANCES TO THE SUPPLY LINE BETWEEN ANY WATER METER AND ITS CITY REQUIRED BPA.
- INSTALLATION:**
- VAULT SHALL BE CLASS 1 CONCRETE WITH DESIGN STRENGTH AT 4500 PSI AT 28 DAYS. UNIT IS MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH. STEEL REINFORCEMENT SHALL BE GRADE 60 REINFORCED STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL. HATCHWAY SHALL BE 1" ALUMINUM DIAMOND PLATE COVER WITH 1" HATCHWAY. EXTRUDED ALUMINUM HATCH TO BE FURNISHED WITH 316 STAINLESS STEEL SWAP LOCK AND BRASS FRINGS. PIPE MATERIAL AND FITTINGS SHALL BE AS SPECIFIED IN COD STANDARDS AND SPECIFICATIONS.
 - ISOLATION VALVES ARE SPECIFIC TO EACH APPROVED BPA AND NO SUBSTITUTION OF ISOLATION VALVES ARE PERMITTED. A PRIVATE ISOLATION VALVE IS REQUIRED IN ADDITION TO THE DC ISOLATION VALVES.
 - ALL JOINTS SHALL BE RESTRAINED WITH METALLIC RESTRAINTS OR APPROVED EQUAL.
 - SUPPORT FOR ASSEMBLY SHALL BE DESIGNED BY OWNER SUCH THAT ASSEMBLY WEIGHT DOES NOT DESTABILIZE STRUCTURAL INTEGRITY.
- TESTING:**
- EACH CITY REQUIRED BACKFLOW PREVENTER MUST BE TESTED BY A CITY APPROVED CERTIFIED TESTER PRIOR TO PLACING THE WATER SYSTEM IN SERVICE.
 - ALL BFP ASSEMBLIES SHALL BE TESTED AT TIME OF INSTALLATION.
 - MAINTENANCE AND UPKEEP OF ALL BACKFLOW PREVENTION EQUIPMENT SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNER.



BUTTERFLY VALVE NOTES:
 CONTRACTOR TO PAINT VALVE COVERS THEMSELVES ACCORDING TO CITY STANDARDS.
 APPROVED MODELS BELOW:
 1. CLOW CL 150
 2. AVK SERIES 766
 3. AVK SERIES 816
 TNEMEC SERIES 2H HI-BUILD GLOSS TRUE BLUE SAFETY FOR WATER
 TNEMEC 2H HI-BUILD GLOSS CANDY APPLE RED SAFETY FOR FIRE LINES

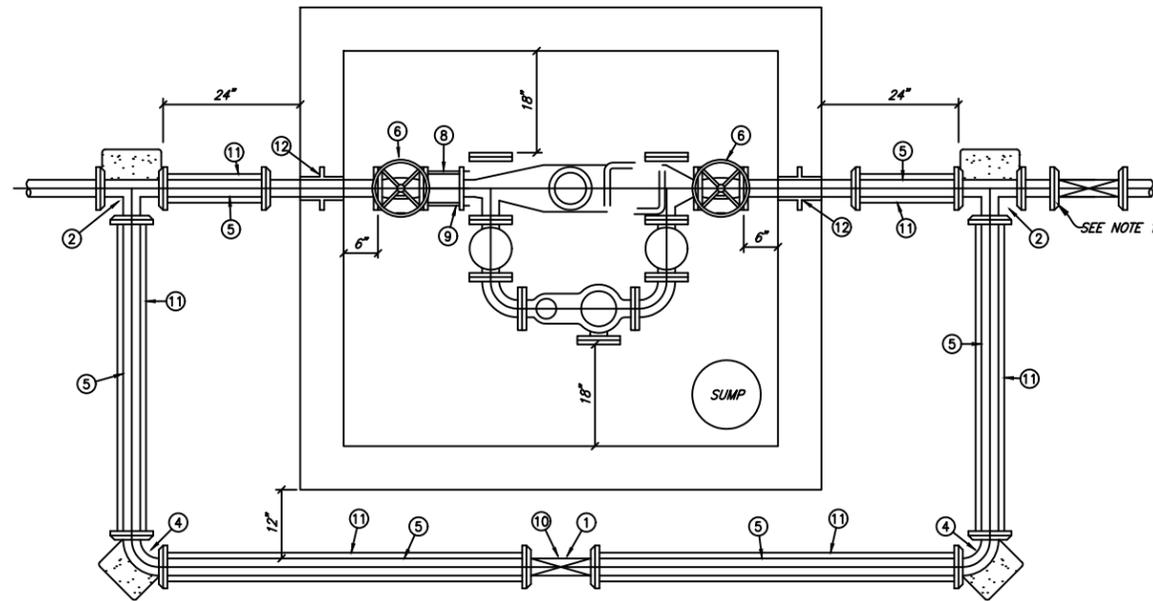
BUTTERFLY VALVE INSTALLATION
 (BFVALVE)



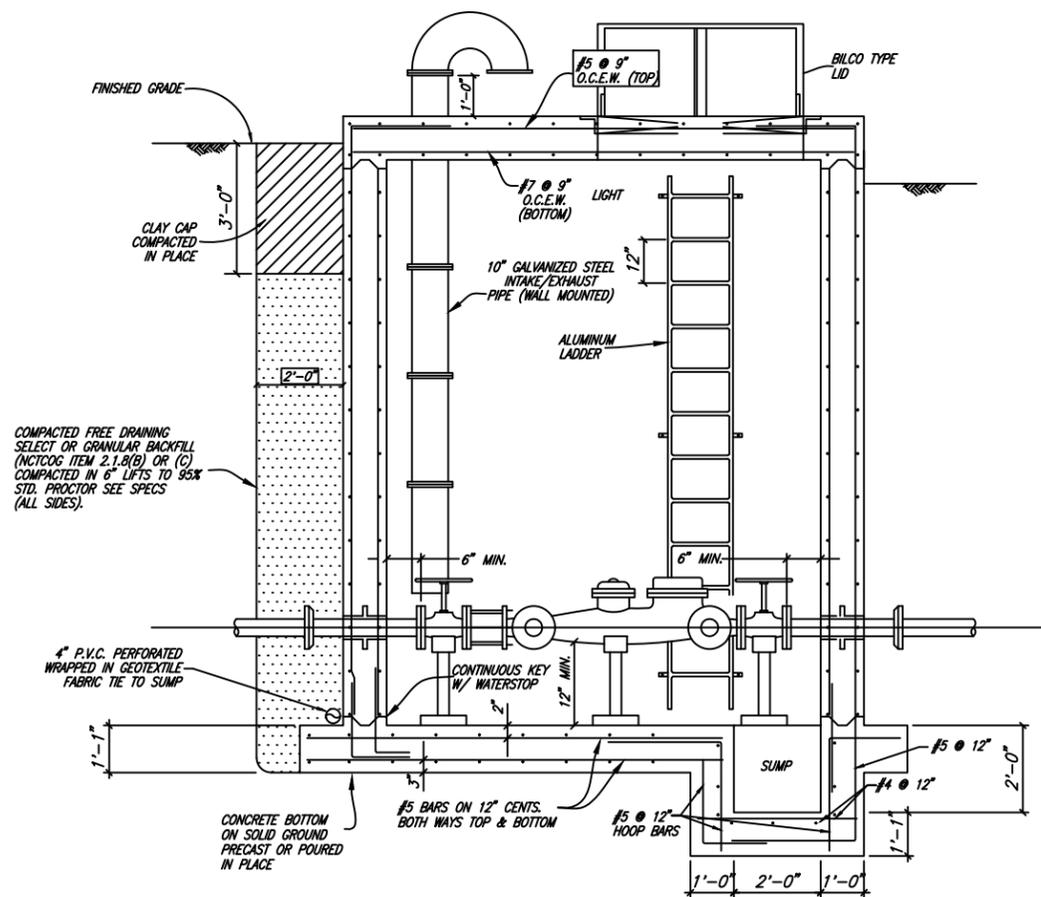
METER VAULT & BY-PASS SPECIFICATIONS

1. NOTIFY THE UTILITY OPERATIONS DEPARTMENT PRIOR TO CONSTRUCTION OF METER VAULT OR BY-PASS ASSEMBLY.
2. THE METER VAULT CAN BE EITHER POURED IN PLACE OR PRE-CAST. ALL WALLS, EITHER POURED IN PLACE OR PRE-CAST, SHALL BE MONOLITHIC POUR. NO SEAMS OR EXTENSIONS WILL BE ALLOWED. CONCRETE SHALL BE 6" THICK-3,000 P.S.I., REINFORCED WITH #5 STEEL BARS ON 12" CENTERS EACH WAY, ON POURED IN PLACE VAULTS. PRE-CAST VAULTS SHALL BE 4" THICK-4,500 P.S.I. CONCRETE, REINFORCED WITH #5 STEEL BARS ON 8" CENTERS BOTH WAYS. THESE ARE MINIMUM SPECIFICATIONS.
3. THE BOTTOM OF THE VAULT SHALL BE 6" THICK-3,000 P.S.I. CONCRETE, REINFORCED WITH #5 STEEL BARS ON 12" CENTERS BOTH WAYS. A 4" DEEP x 12" DIAMETER SUMP SHALL BE INSTALLED TO ONE SIDE AND IN EITHER CORNER OF THE BOTTOM OF THE SLAB. A 4" CUSHION OF SAND SHALL BE INSTALLED UNDER THE SLAB. IF A PRE-FABRICATED VAULT IS TO BE USED, A LAYER OF RAM-NEX SHALL BE INSTALLED BETWEEN THE WALLS AND BOTTOM SLAB.
4. THE VAULT SHALL NOT BE INSTALLED IN ANY DRIVE OR PARKING AREA AND MUST BE LOCATED IN A UTILITY EASEMENT DEDICATED TO THE CITY. ALL PIPING INSIDE THE VAULT AND THE VAULT ITSELF MUST BE INSPECTED AND APPROVED BY THE UTILITY OPERATIONS DEPARTMENT.
5. THE VAULT LID SHALL BE BILCO TYPE Q-4AL LEAF DESIGN LID. ANGLE FRAME IS 1/4" STEEL WITH STRAP ANCHORS BOLTED TO THE EXTERIOR. THE LEAF IS 1/4" STEEL DIAMOND PATTERN PLATE, PIVOTING ON TORSION BARS FOR EASY OPERATIONS. THE MINIMUM LIVE LOAD CAPACITY IS 150 LBS. PER SQUARE FOOT. THE LID SIZE SHALL BE 3'x3'. THE LID SHALL BE PAINTED WITH 43-38 TNEMEC DIFFUSED ALUMINUM PAINT OR APPROVED EQUAL.
6. ALL PIPING INSIDE THE VAULT SHALL BE DUCTILE IRON (AWWA C151) WITH FLANGED FITTINGS. THE OUTSIDE DIMENSION OF THE PIPING SHALL BE WITHIN THE FOLLOWING RANGES: 3" PIPE - 3.74" TO 3.86"; 4" PIPE - 4.74" TO 4.90"; 6" PIPE - 6.81" TO 6.96"; 8" PIPE - 8.98" TO 9.20"; 10" PIPE - 11.04" TO 11.61". VARIATION FROM THESE DIMENSIONS WILL RESULT IN THE VAULT BEING REJECTED.
7. THE STRAINER, METER AND FLANGED ADAPTER COUPLING INSTALLED BY THE CONTRACTOR AND APPROVED BY CITY.
8. THE STRAINER, METER AND FLANGED ADAPTER COUPLING WILL NOT BE INSTALLED UNTIL THE METER VAULT AND TAPS ARE ACCEPTED BY THE CITY UTILITY OPERATIONS DEPARTMENT. ALL UTILITIES MUST ALSO HAVE BEEN ACCEPTED AND RELEASED BY THE CITY ENGINEERING OFFICE PRIOR TO METER INSTALLATION.
9. THE MAIN LINE GATE VALVES SHALL BE RESILIENT WEDGE DESIGN, NON-RISING STEM VALVES, WHICH HAVE RECEIVED FORMAL APPROVAL FROM THE CITY. ALL VALVES SHALL BE FLANGED BOTH ENDS AND HAVE HAND WHEELS.
10. CONTRACTOR SHALL HAVE A CHOICE OF EITHER HAVING A LINK SEAL WALL SLEEVE MODEL WS-6-28-S-6 FOR 3" PIPE; MODEL WS-8-32-S-8 FOR 4" PIPE; MODEL WS-10-36-S-6 FOR 6" PIPE; MODEL WS-12-37-S-6 FOR 8" PIPE; MODEL WS-14-37-S-6 FOR 10" PIPE, CAST IN THE WALL VAULT. THE ABOVE MENTIONED WALL SLEEVES SHALL USE THE FOLLOWING LINK SEALS: FOR 3" PIPE - 5#LS325-C; FOR 4" PIPE - 5 - #LS400-C; FOR 6" PIPE - #LS400-C; FOR 8" PIPE - 9 #LS-400C; FOR 10" PIPE - 12 - #LS325-C. THE CONTRACTOR MAY HAVE THE VAULT WALL CORED BEFORE INSTALLATION OF VAULT AND PIPING. IF THE WALL IS CORED THE FOLLOWING SPECIFICATIONS SHALL BE USED: FOR 3" PIPE CORE SIZE SHALL BE 6" AND USE 5 - #LS325-C LINK SEALS; FOR 4" PIPE CORE SIZE SHALL BE 8" AND USE 5 - #LS400-C LINK SEALS; FOR 6" PIPE CORE SIZE SHALL BE 10" AND USE 7 - #LS400-C LINK SEALS; FOR 8" PIPE CORE SIZE SHALL BE 12" AND USE 9 - #LS400-C LINK SEALS; FOR 10" PIPE CORE SIZE SHALL BE 14" AND USE 11 - LS425-C LINK SEALS. BREAKING OF THE WALL WITH A JACKHAMMER OR USING PRE-CAST KNOCKOUT PANELS IS NOT PERMITTED.
11. THERE WILL BE A SOLID REINFORCED CONCRETE SUPPORT BLOCK UNDER EACH GATE VALVE.
12. MINIMUM DEPTH OF ANY VAULT SHALL BE 4'-6".
13. IF ELEVATION ADJUSTMENTS ARE NEEDED ON THE ACCESS LID, CONTRACTOR SHALL CONTRACT UTILITY OPERATIONS DEPARTMENT FOR APPROVAL PRIOR TO IMPLEMENTATION OF ADJUSTMENTS.
14. SHUT OFF VALVE SHOULD BE PLACED OUTSIDE VAULT BOX ON THE CUSTOMER SIDE

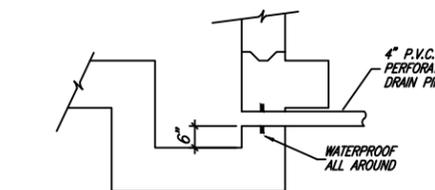
- LEGEND**
- ① GATE VALVE - M.J. & M.J.
 - ② D.I. TEE - M.J., M.J., M.J.
 - ④ D.I. 90° BEND - M.J. & M.J.
 - ⑤ D.I. PIPE - P.E. & P.E.
 - ⑥ O.S. & Y. VALVE - FLG. & FLG.
 - ⑧ FLANGED COUPLING ADAPTER
 - ⑨ D.I. PIPE - FLG. & P.E. NIPPLE
 - ⑩ VALVE COVERS & LIDS
 - ⑪ ANCHORING RODS
 - ⑫ WALL SLEEVE - FLG. & M.J.



PLAN



ELEVATION
METER VAULT



SUMP DRAIN CONNECTION

CITY OF DENISON, TEXAS

STANDARD CONSTRUCTION DETAILS
METER VAULT

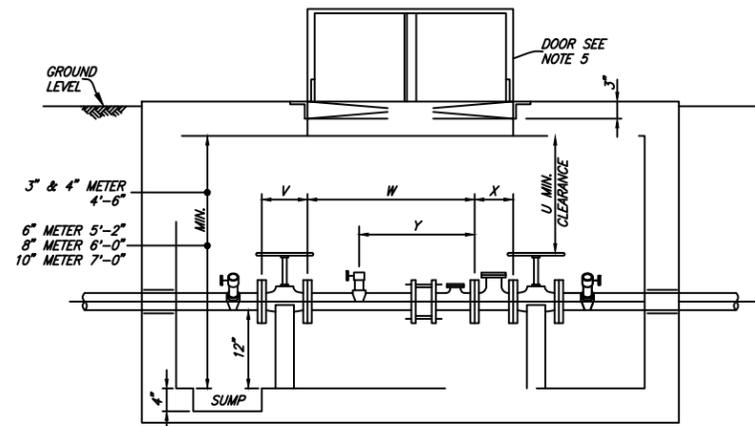
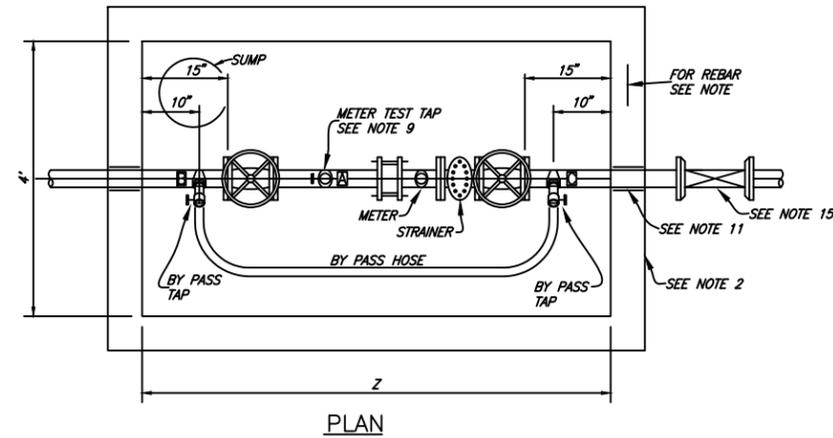
AUGUST
2025

SHEET NO.

22



METER VAULT & BY-PASS SPECIFICATIONS



ELEVATION
METER VAULT (METER_VAULT2)

METER VAULT											
DOMESTIC						IRRIGATION					
METER SIZE	U	V	W	Y	Z	METER SIZE	U	V	W	Y	Z
3"	25"	8"	11-1/2"	-	6'-10"	3"	25"	8"	16-1/2"	9"	6'-10"
4"	22"	9"	13-1/2"	-	7'-7"	4"	22"	9"	19-1/2"	10"	7'-7"
6"	26"	10-1/2"	13-1/2"	-	8'-2"	6"	26"	10-1/2"	19-1/2"	13"	8'-2"
						8"	31"	11-1/2"	25-1/2"	17"	9'-1"
						10"	37"	13"	29-1/2"	21"	10'-7"

1. NOTIFY THE UTILITY OPERATIONS DEPARTMENT PRIOR TO CONSTRUCTION OF METER VAULT OR BY-PASS ASSEMBLY.
2. THE METER VAULT CAN BE EITHER POURED IN PLACE OR PRE-FABRICATED. ALL WALLS, EITHER POURED IN PLACE OR PRE-FABRICATED, SHALL BE MONOLITHIC POUR. NO SEAMS OR EXTENSIONS WILL BE ALLOWED. CONCRETE SHALL BE 6" THICK-3,000 P.S.I., REINFORCED WITH #4 STEEL BARS ON 12" CENTERS EACH WAY, ON POURED IN PLACE VAULTS. PRE-FABRICATED VAULTS SHALL BE 4" THICK-4,500 P.S.I. CONCRETE, REINFORCED WITH #4 STEEL BARS ON 8" CENTERS BOTH WAYS. THESE ARE MINIMUM SPECIFICATIONS.
3. THE BOTTOM OF THE VAULT SHALL BE 6" THICK-3,000 P.S.I. CONCRETE, REINFORCED WITH #4 STEEL BARS ON 12" CENTERS BOTH WAYS. A 4" DEEP x 12" DIAMETER SUMP SHALL BE INSTALLED TO ONE SIDE AND IN EITHER CORNER OF THE BOTTOM OF THE SLAB. A 4" CUSHION OF SAND SHALL BE INSTALLED UNDER THE SLAB. IF A PRE-FABRICATED VAULT IS TO BE USED, A LAYER OF RAM-NEX SHALL BE INSTALLED BETWEEN THE WALLS AND BOTTOM SLAB.
4. THE VAULT SHALL NOT BE INSTALLED IN ANY DRIVE OR PARKING AREA AND MUST BE LOCATED IN A UTILITY EASEMENT DEDICATED TO THE CITY. ALL PIPING INSIDE THE VAULT AND THE VAULT ITSELF MUST BE INSPECTED AND APPROVED BY THE UTILITY OPERATIONS DEPARTMENT.
5. THE VAULT LID SHALL BE BILCO TYPE Q-4 LEAF DESIGN LID. ANGLE FRAME IS 1/4" STEEL WITH STRAP ANCHORS BOLTED TO THE EXTERIOR. THE LEAF IS 1/4" STEEL DIAMOND PATTERN PLATE, PIVOTING ON TORSION BARS FOR EASY OPERATIONS. THE MINIMUM LIVE LOAD CAPACITY IS 150 LBS. PER SQUARE FOOT. THE LID SIZE SHALL BE 3'x3'. THE LID SHALL BE PAINTED WITH 43-38 TNEPEC DIFFUSED ALUMINUM PAINT OR APPROVED EQUAL.
6. ALL PIPING INSIDE THE VAULT SHALL BE PVC PIPE WITH FLANGED FITTINGS. THE OUTSIDE DIMENSION OF THE PIPING SHALL BE WITHIN THE FOLLOWING RANGES: 3" PIPE - 3.74" TO 3.86"; 4" PIPE - 4.74" TO 4.90"; 6" PIPE - 6.81" TO 6.96"; 8" PIPE - 8.98" TO 9.20"; 10" PIPE - 11.04" TO 11.61". VARIATION FROM THESE DIMENSIONS WILL RESULT IN THE VAULT BEING REJECTED.
7. THE STRAINER, METER AND FLANGED ADAPTER COUPLING WILL BE PROVIDED AND INSTALLED BY THE CITY AT THE CONTRACTORS EXPENSE.
8. THE STRAINER, METER AND FLANGED ADAPTER COUPLING WILL NOT BE INSTALLED UNTIL THE METER VAULT AND TAPS ARE ACCEPTED BY THE CITY UTILITY OPERATIONS DEPARTMENT. ALL UTILITIES MUST ALSO HAVE BEEN ACCEPTED AND RELEASED BY THE CITY ENGINEERING OFFICE PRIOR TO METER INSTALLATION.
9. THE CONTRACTOR SHALL MAKE THE BY-PASS AND METER TEST TAP INSIDE THE VAULT. IF THE SERVICE IS TO BE USED STRICTLY AS A DOMESTIC OR DOMESTIC / IRRIGATION COMBINATION, TAP A ON THIS DRAWING IS NOT NECESSARY. IF THE SERVICE IS USED STRICTLY FOR IRRIGATION TAP A IS REQUIRED. TAP A MUST BE AT LEAST TWO PIPE DIAMETERS DOWN-STREAM OF THE METER. TAPS B & C MUST BE MADE AT AN APPROXIMATE 45% ANGLE ON EACH END OF THE PIPE AND CENTERED 10 INCHES AWAY FROM THE WALL. ALL TAPS SHALL BE 2" AND THE CONTRACTOR SHALL INSTALL APPROVED SERVICE SADDLES WITH BRASS NIPPLES AND NO. 7550 OHIO BRASS OR APPROVED EQUAL GATE VALVES.
10. THE MAIN LINE GATE VALVES SHALL BE RESILIENT WEDGE DESIGN, NON-RISING STEM VALVES, WHICH HAVE RECEIVED FORMAL APPROVAL FROM THE CITY. ALL VALVES SHALL BE FLANGED BOTH ENDS AND HAVE HAND WHEELS.
11. CONTRACTOR SHALL HAVE A CHOICE OF EITHER HAVING A LINK SEAL WALL SLEEVE MODEL WS-6-28-S-6 FOR 3" PIPE; MODEL WS-8-32-S-8 FOR 4" PIPE; MODEL WS-10-36-S-6 FOR 6" PIPE; MODEL WS-12-37-S-6 FOR 8" PIPE; MODEL WS-14-37-S-6 FOR 10" PIPE, CAST IN THE WALL VAULT. THE ABOVE MENTIONED WALL SLEEVES SHALL USE THE FOLLOWING LINK SEALS: FOR 3" PIPE - 5#LS325-C; FOR 4" PIPE - 5 - #LS400-C; FOR 6" PIPE 7 - #LS400-C; FOR 8" PIPE - 9 #LS-400C; FOR 10" PIPE - 12 - #LS325-C. THE CONTRACTOR MAY HAVE THE VAULT WALL CORED BEFORE INSTALLATION OF VAULT AND PIPING. IF THE WALL IS CORED THE FOLLOWING SPECIFICATIONS SHALL BE USED: FOR 3" PIPE CORE SIZE SHALL BE 6" AND USE 5 - #LS325-C LINK SEALS; FOR 4" PIPE CORE SIZE SHALL BE 8" AND USE 5 - #LS400-C LINK SEALS; FOR 6" PIPE CORE SIZE SHALL BE 10" AND USE 7 - #LS400-C LINK SEALS; FOR 8" PIPE CORE SIZE SHALL BE 12" AND USE 9 - #LS400-C LINK SEALS; FOR 10" PIPE CORE SIZE SHALL BE 14" AND USE 11 - LS425-C LINK SEALS. BREAKING OF THE WALL WITH A JACKHAMMER OR USING PRE-CAST KNOCKOUT PANELS IS NOT PERMITTED.
12. THERE WILL BE A CONCRETE SUPPORT UNDER EACH GATE VALVE.
13. MINIMUM DEPTH OF ANY VAULT SHALL BE 4'-6".
14. IF ELEVATION ADJUSTMENTS ARE NEEDED ON THE ACCESS LID, CONTRACTOR SHALL CONTRACT UTILITY OPERATIONS DEPARTMENT FOR APPROVAL PRIOR TO IMPLEMENTATION OF ADJUSTMENTS.
15. SHUT OFF VALVE SHOULD BE PLACED OUTSIDE VAULT BOX ON THE CUSTOMER SIDE



CITY OF DENISON, TEXAS
STANDARD CONSTRUCTION DETAILS
METER VAULT

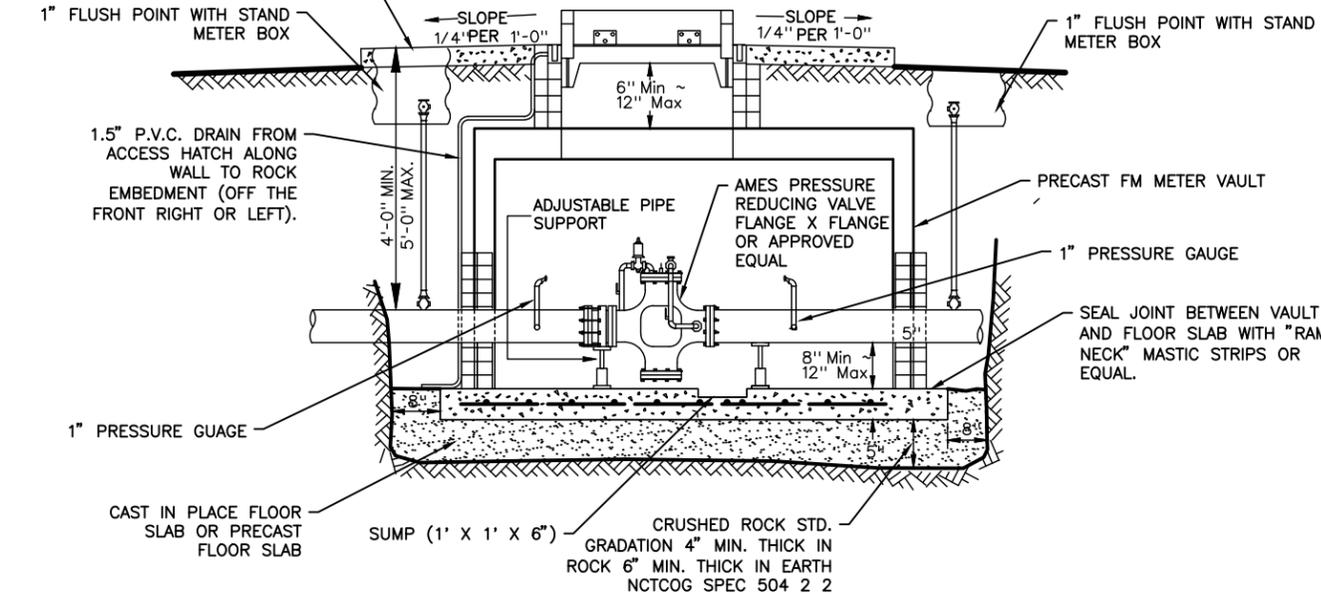
AUGUST
2025

SHEET NO.
23

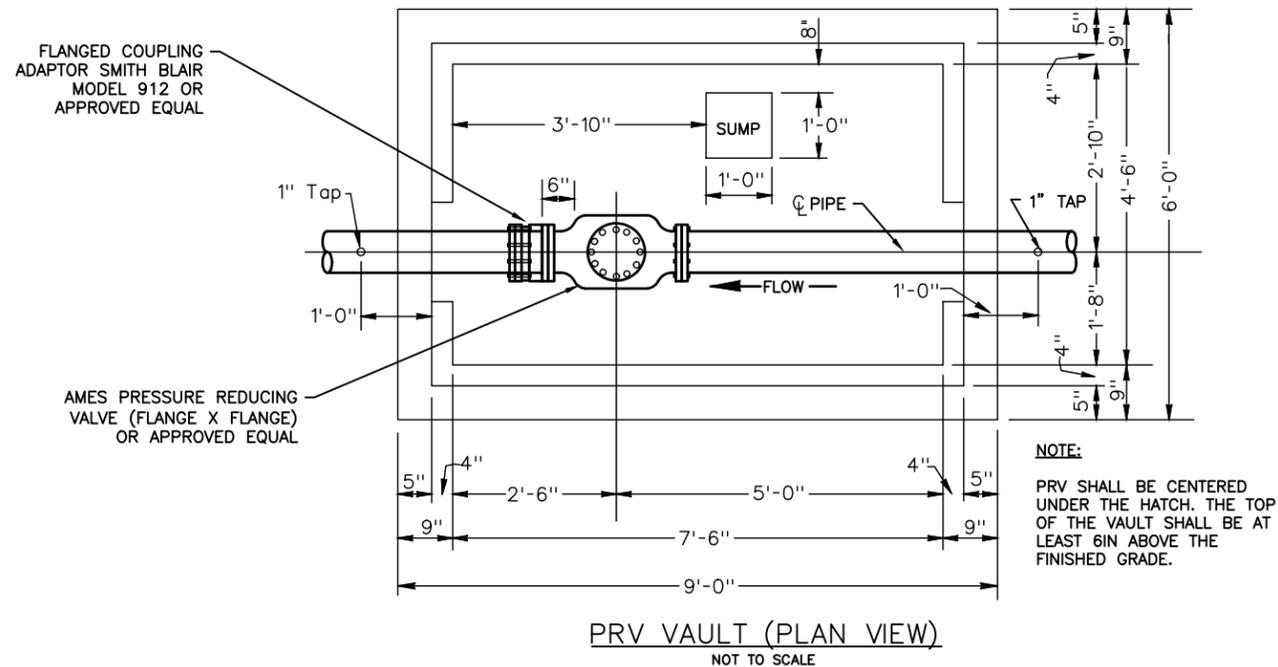
WHEN OUTSIDE OF PAVEMENT A CONCRETE PAD SHALL BE CONSTRUCTED EXTENDING A MINIMUM OF 2 FT BEYOND THE PERIMETER OF THE HATCH AND BE A MINIMUM OF 6 IN THICK

VAULT LID: BLICO HATCH OR APPROVED EQUAL WITH HASP & PAD LOCK
SINGLE-LEAF HATCH - 3FT X 4FT
DOUBLE-LEAF HATCH - 6FT X 4FT

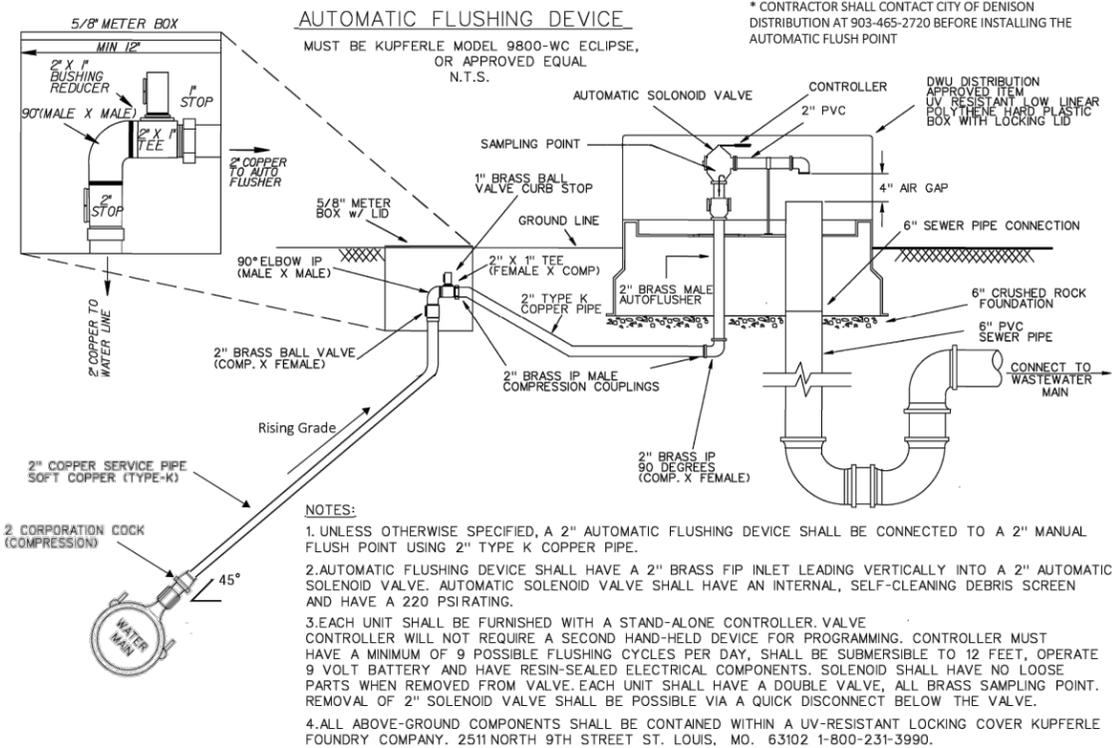
ALL HARDWARE MUST BE STAINLESS STEEL. ZINC PLATED AND CHROMATE SEALED FINISHES ARE NOT ACCEPTABLE.



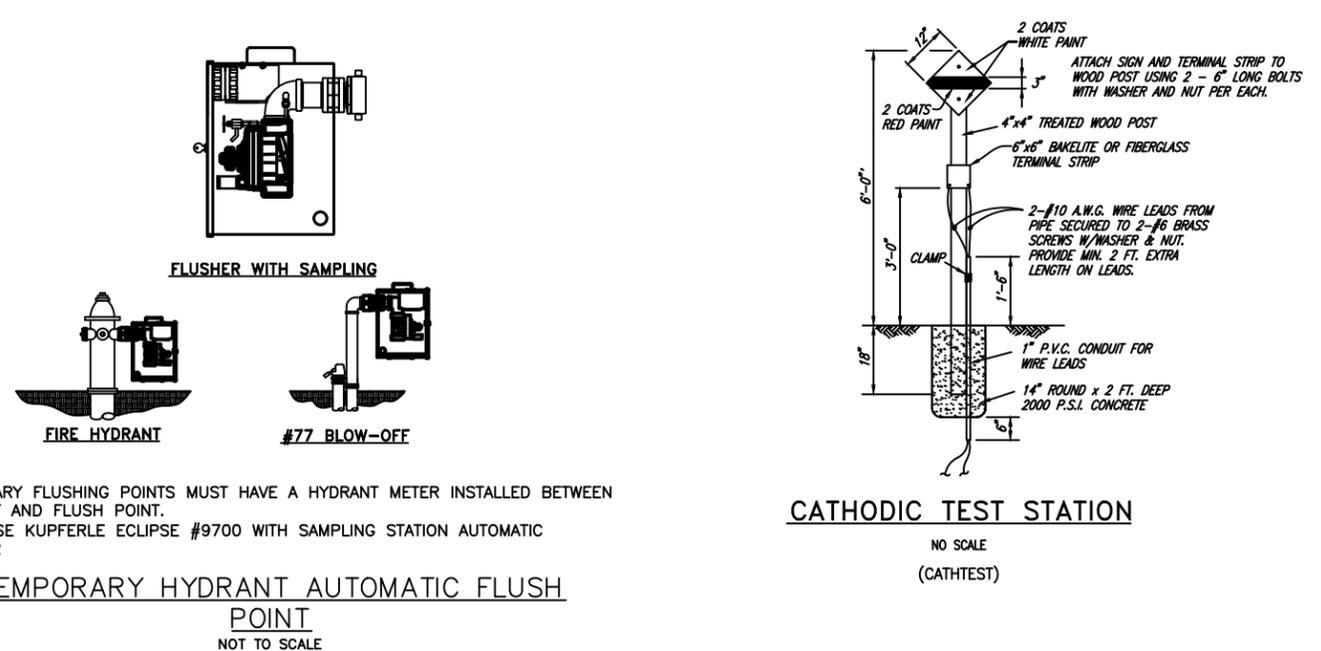
PRV VAULT (PROFILE)
NOT TO SCALE



PRV VAULT (PLAN VIEW)
NOT TO SCALE

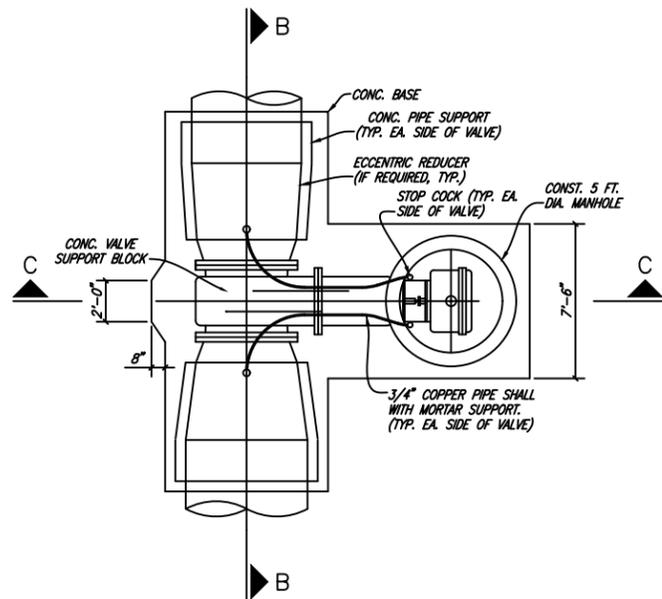


AUTOMATIC FLUSH POINT
NOT TO SCALE



TEMPORARY HYDRANT AUTOMATIC FLUSH POINT
NOT TO SCALE

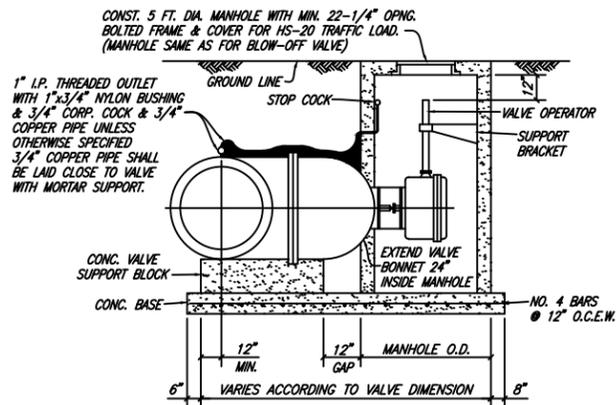
CATHODIC TEST STATION
NO SCALE
(CATHTEST)



HORIZONTAL VALVE PLAN

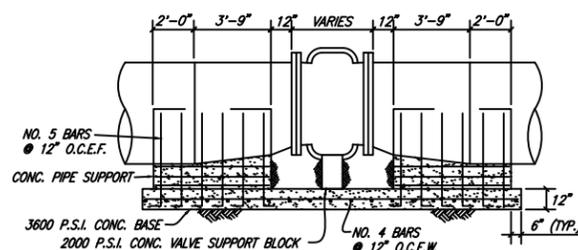
NO SCALE

(HORVALVE)



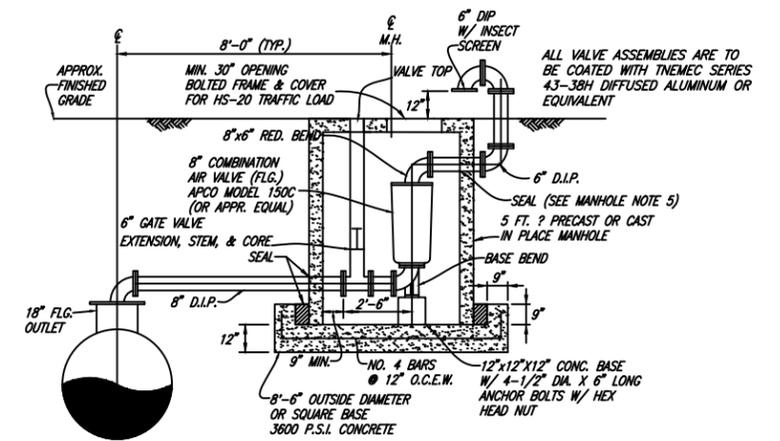
HORIZONTAL VALVE SECTION C-C

NO SCALE



HORIZONTAL VALVE SECTION B-B

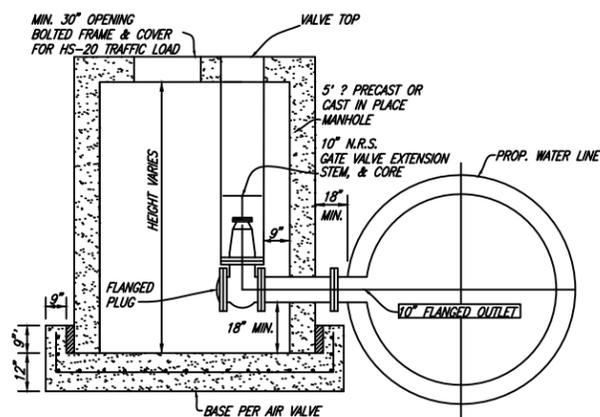
NO SCALE



AIR RELEASE VALVE W/MANHOLE

NO SCALE

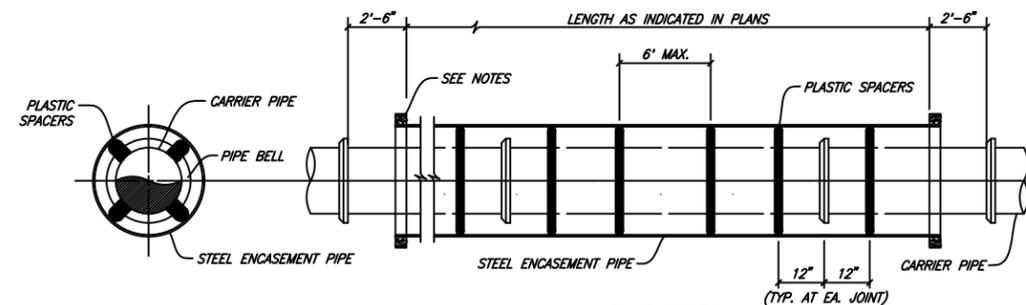
(AIRVALVE)



BLOW-OFF VALVE W/MANHOLE

NO SCALE

(BOVALVE)



SECTION

ELEVATION

ENCASED ROAD BORE

NO SCALE

NOTES:

- 1) PREFABRICATED PLASTIC SPACERS MUST BE APPROVED BY THE OWNER.
- 2) CONTRACTOR SHALL PROVIDE SUPPORT UNDER CARRIER PIPE TO HAVE MIN. 1" CLEARANCE BETWEEN PIPE BELL AND ENCASEMENT PIPE.
- 3) ENDS OF NEOPRENE CASING PIPE SHALL BE SEALED WITH S.S. BANDS FOR ROADWAY CROSSINGS. PLUGS SHALL BE CONSTRUCTED WITH A WEEP HOLE.

CHANGE ORDER NO. X
FIELD CHANGE
ADDENDUM



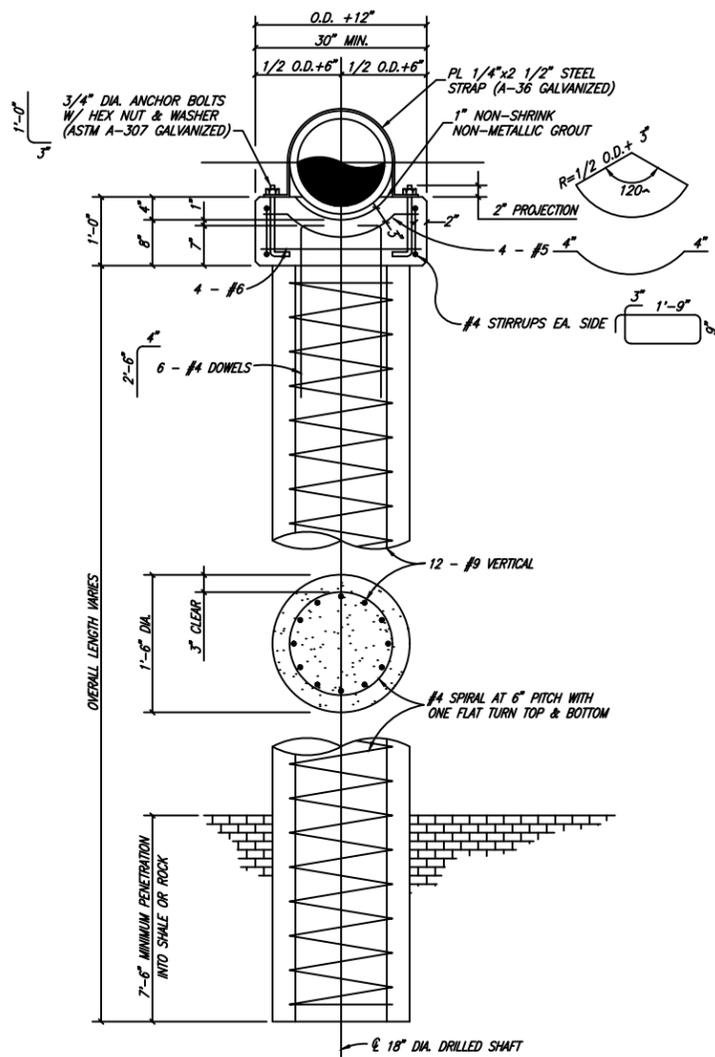
CITY OF DENISON, TEXAS

STANDARD CONSTRUCTION DETAILS
WATER / VALVES

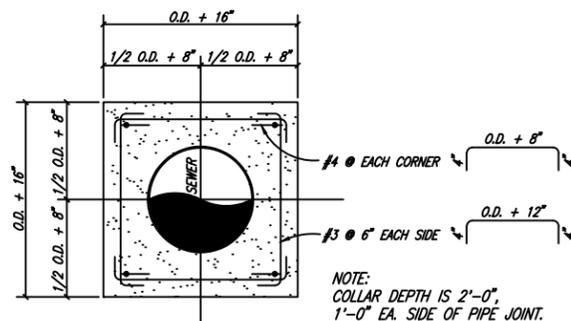
AUGUST
2025

SHEET NO.

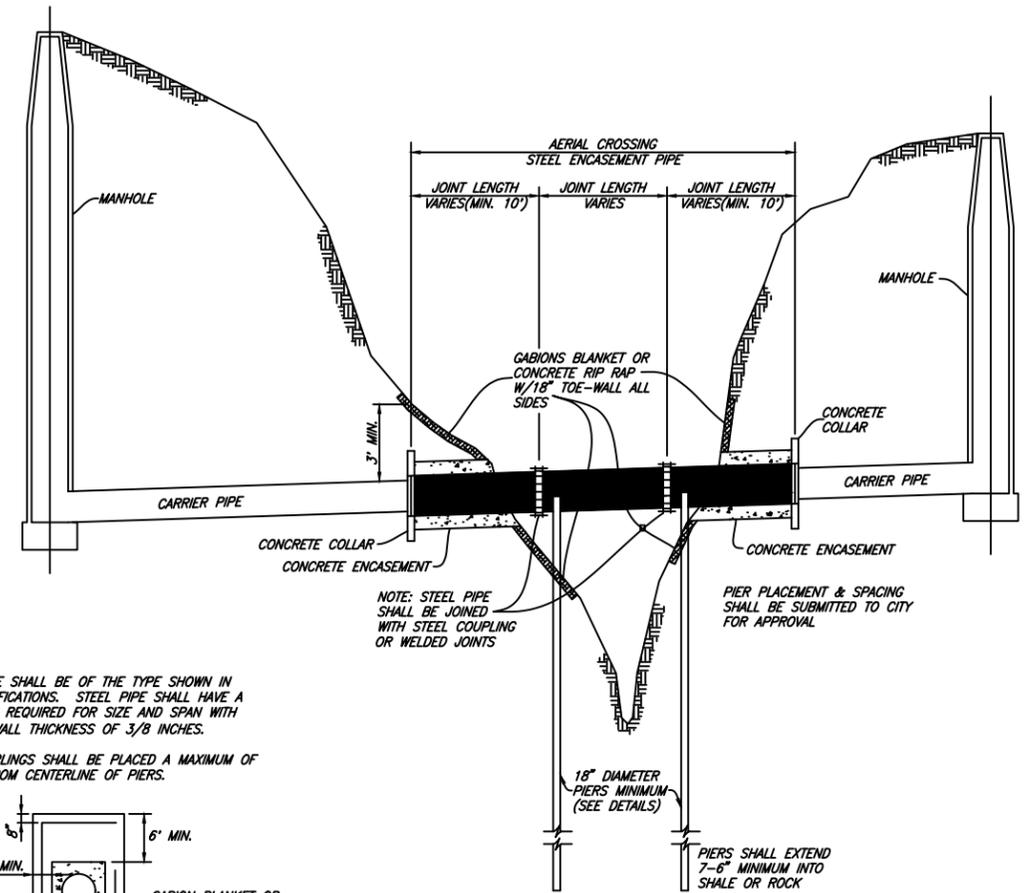
25



AERIAL CROSSING PIER & PIER CAP
(PIER)

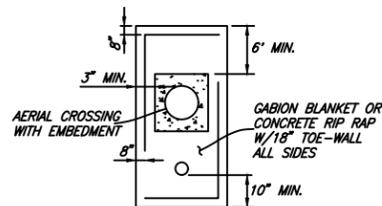


AERIAL CROSSING CONCRETE COLLAR
(COLLAR)



AERIAL CROSSING
(AERIAL-X)

STEEL PIPE SHALL BE OF THE TYPE SHOWN IN THE SPECIFICATIONS. STEEL PIPE SHALL HAVE A THICKNESS REQUIRED FOR SIZE AND SPAN WITH MINIMUM WALL THICKNESS OF 3/8 INCHES.
PIPE COUPLINGS SHALL BE PLACED A MAXIMUM OF 5 FEET FROM CENTERLINE OF PIERS.



BANK PROTECTION (TYP.)

NOTE:
ENGINEERING DESIGN SHALL BE SUBMITTED TO CITY FOR APPROVAL FOR USE FOR EACH CROSSING. PIERS SHALL BE PLACED AT MAXIMUM SPAN DISTANCE AS DICTATED BY ENGINEER'S DESIGN. ENGINEER'S DESIGN SHALL BE BASED UPON GEOTECHNICAL REPORT RECOMMENDING PIER PLACEMENT.
ALL EXPOSED AERIAL CROSSING SEGMENTS OF PIPE ARE TO BE ZINC-EPOXY-URETHANE COATED. THE FINAL URETHANE COAT SHALL BE AS FOLLOWS.
SANITARY SEWER:
TNEMEC COLOR (GREEN) MOUNTAIN FIR 12GGN RGB: 87, 84, 58 OR (BROWN) LEATHER 42RD RGB: 88, 68, 56
FORCED MAINS (GREEN) EVERGREEN 98GN RGB: 46,64,34
WITH STENCILED ON 3"X3" LETTERING DENOTING "FORCED MAIN" WHERE CLEARLY VISIBLE IN TNEMEC WHITE OOWH RGB: 248,253,254
WATER:
TNEMEC (BLUE) KC BLUE 21BL RGB: 34, 83, 153



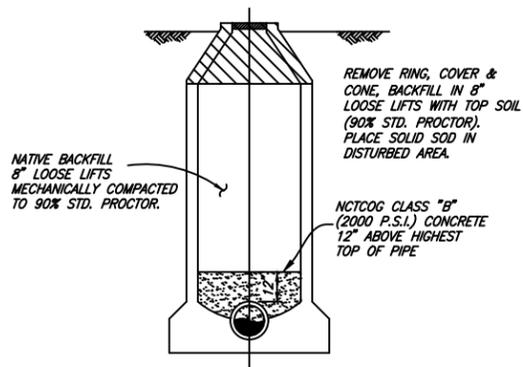
CITY OF DENISON, TEXAS

STANDARD CONSTRUCTION DETAILS
SANITARY SEWER / AERIAL CROSSING

**AUGUST
2025**

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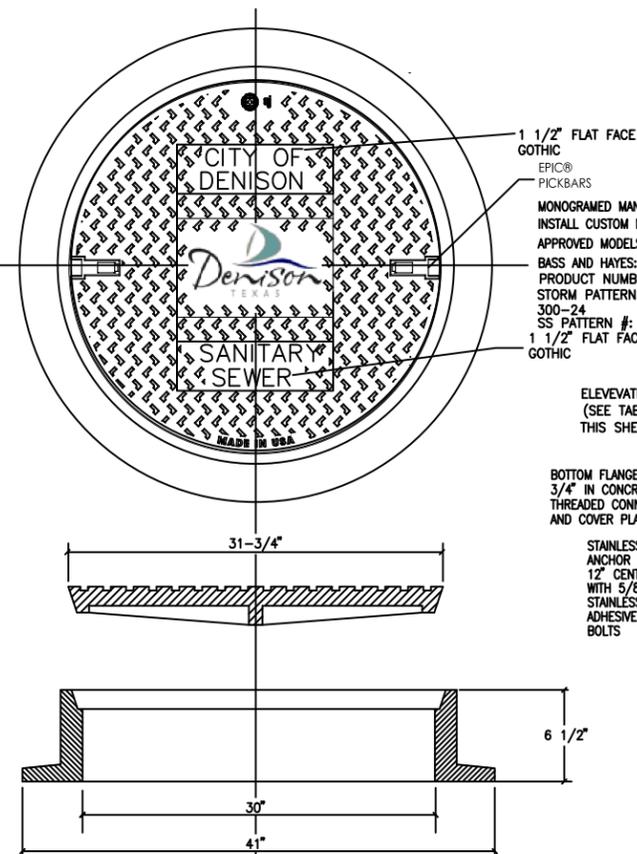
26



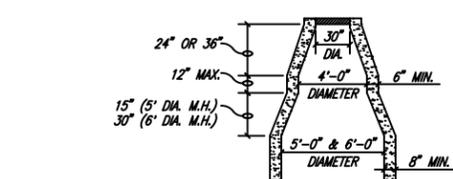
MANHOLE ABANDONMENT
OUTSIDE PAVEMENT AREA
(MHABAN)

NOTES:
ALL COVERS SHOULD BE 30" DOMESTIC WITH THE CITY LOGO
RING AND COVERS SHOULD BE CAST IRON
(**CAST IRON RING AND COVERS SHOULD HAVE ISI INSERT INSTALLED. SSI OR OTHER APPROVED BRAND)
IRON - BASS AND HAYES - VRM-30 30", VRM -30 WATERTIGHT

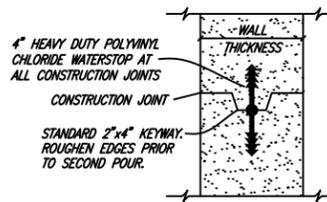
ALL COVERS WITHIN A 100 YEAR FLOOD PLAIN OR IN CLOSE PROXIMITY TO A CREEK OR WATERWAY MUST BE PRESSURE RATED (BOLT DOWN) TCEQ RULE



MANHOLE RING AND COVER



CONE TRANSITION



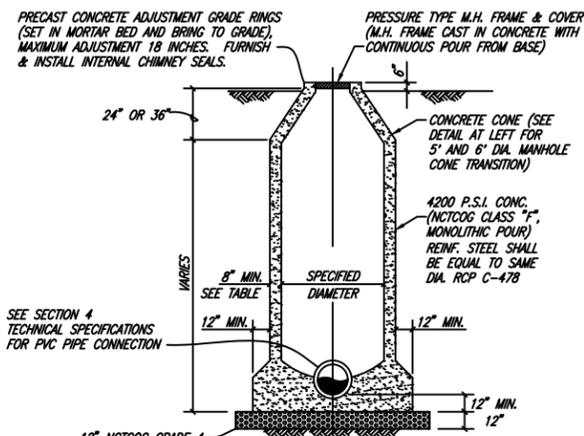
MANHOLE CONSTRUCTION JOINT
KEYWAY WITH WATERSTOP

MINIMUM WALL THICKNESS FOR CAST-IN-PLACE MANHOLES SHALL BE AS FOLLOWS

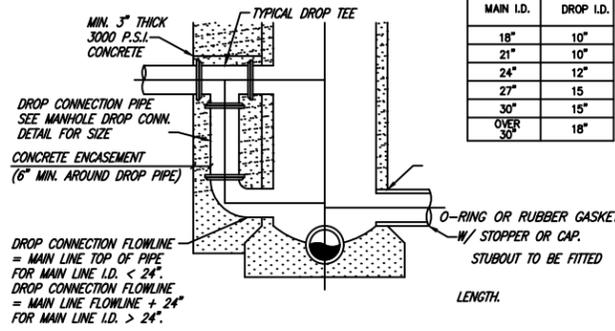
DIAMETER (FT.)	WALL (IN.)
4, 5 OR 6	8
7	9
8	10
9	11
10	12

MANHOLE NOTES

- NOTES FOR ALL NEW MANHOLES:
- 12" OR LARGER MAINS SHALL USE FIBERGLASS MANHOLES: HOBAS FIBERGLASS MANHOLE STRUCTURES, LATH DOZ. CS MANHOLES OR APPROVED EQUIVALENT
 - 10" OR SMALLER CAN BE CONCRETE (PREFAB OR POUR IN PLACE)
 - MANHOLE STRUCTURES SHOULD BE 48" IN DIAMETER FOR MAINS 10" AND SMALLER. DIAMETER SHOULD BE 60" FOR 12" AND LARGER.
 - MANHOLE SHALL BE PLUMB TO WITHIN 1" FOR EVERY 5 FT. OF VERTICAL DEPTH, PRECAST OR CAST IN PLACE.
 - MANHOLES OVER 12 FT. DEEP SHALL BE 5" IN DIAMETER AND HAVE NO. 4 BARS @ 18" O.C.E.W. AND IF NOT POURED MONOLITHIC COLD JOINTS SHALL HAVE A FORMED GROOVE OR REINFORCING DOWELS FOR SHEAR PROTECTION; CONSTRUCTION JOINTS SHALL HAVE HEAVY DUTY P.V.C. WATERSTOP 9-INCHES IN THE DIRECTION PERPENDICULAR TO THE JOINT AS MANUFACTURED BY B.F. GOODRICH OR APPROVED EQUAL.
 - USE PRESSURE TYPE MANHOLE FRAME & COVER.
 - ALL CONCRETE MANHOLES SHOULD BE LINED OR COATED WITH ONE OF THE FOLLOWING PRODUCTS:
CHESTERTON ARC 791
RAVEN 405
WARREN EPOXY 301-14
SPECTRA SHIELD
- NOTES FOR NEW PRECAST MANHOLES:
- PRE-FAB MANHOLES SHOULD BE WRAPPED WITH CRETEX WRAP OR CONSEAL CS-212 AT EXTERIOR JOINTS TO FURTHER BLOCK POSSIBLE LEAK
 - PRECAST MANHOLES SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C-478 AND PROJECT SPECIFICATIONS.
 - SEE SPECIFICATIONS FOR CLASS OF PIPE FOR MANHOLE RISERS.
 - FURNISH & INSTALL THREE JOINT RESTRAINER STRAPS FOR THE TOP JOINT AND CONE SECTIONS.
 - EACH JOINT SHALL BE PROVIDED WITH AN O-RING DESIGN AND THE EXTERIOR OF EACH JOINT SHALL BE SEALED USING A PREFORMED JOINT SEALING COMPOUND.
 - NEW MANHOLES SHALL BE LINED WITH WARREN ENVIRONMENTAL 301-14 EPOXY COATING IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS.



STANDARD MANHOLE ELEVATION
4', 5' & 6' DIAMETER MANHOLES



DROP MANHOLE ELEVATION

DROP STUB OUT

MAIN I.D.	DROP I.D.
18"	10"
21"	10"
24"	12"
27"	15"
30"	15"
OVER 30"	18"

8" x 30" MIN. DIA. PRECAST

STEEL RISER RINGS (SET IN MORTAR BED AND BRING TO GRADE) RINGS 18" MAXIMUM FURNISH AND INSTALL INTERNAL CHIMNEY SEAL.

CONCENTRIC MANHOLE CONE. (SEE CONE TRANSITION DETAIL FOR LARGER THAN 48" DIA.)

STUBOUTS SHALL BE A MIN. OF 5' LONG W/ CONCRETE CRADLE (FROM SAME POUR AS BASE) UNDER ENTIRE LENGTH.

USE O-RING RUBBER GASKETS AND PREFORMED JOINT SEALING COMPOUND TO FILL EXTERIOR JOINT SPACES

PRECAST MANHOLE RISER SHALL BE IN ACCORDANCE WITH A.S.T.M. C-478

BASE RISER WITH "BUTT END" SET IN RAM-NEK (OR APPROVED EQUAL) FLEXIBLE GASKET MATERIAL

STUBOUT TO BE FITTED W/ STOPPER OR CAP. STUBOUTS SHALL BE A MIN. OF 5' LONG (TYP.) W/ CONCRETE CRADLE UNDER ENTIRE LENGTH.

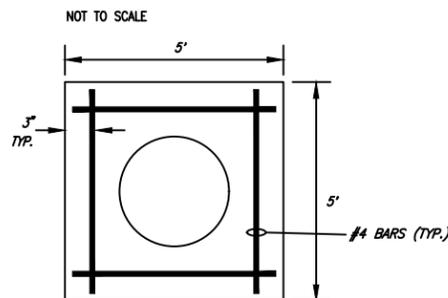
COUPLING WITH O-RING RUBBER GASKET WITH P.V.C. PIPE (KOR-N-SEAL)

OR APPROVED EQUAL.

PRECAST CONCRETE MANHOLE

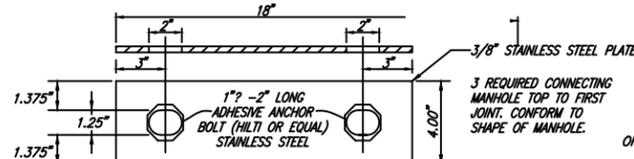
NOT TO SCALE

- NOTES:
- FOR MANHOLES WITH DIAMETER LARGER THAN 48" I.D., A PRECAST FLAT TOP MANHOLE COVER AS PER A.S.T.M. C478 SHALL BE INSTALLED.
 - ALL JOINTS IN PRECAST MANHOLE SHALL BE SEALED ON OUTSIDE OF MANHOLE WITH AQUAGARD SHRINK SEAL.



MANHOLE PAD PLAN

NOTES:
MANHOLE PAD TO BE INSTALLED AROUND ALL MANHOLE RINGS AND COVERS. PAD SHALL BE DIAGONAL TO ROADWAY DIRECTION.



JOINT RESTRAINER STRAP FOR PRECAST MANHOLE

SEE SPECIFICATIONS FOR PRECAST MANHOLE REQUIREMENTS
NOT TO SCALE

- NOTES:
- ALL VENTED MANHOLES SHALL BE PROVIDED WITH FLAT TOP SLAB.
 - MANHOLE RING, RISERS, AND COVER SHALL BE STEEL. EAST JORDON IRON WORKS, INC. OR APPROVED EQUAL.
 - CLEAR OPENING OF MANOLE RINGS AND COVER SHALL BE 30" MIN.
 - ALL DUCTILE IRON PIPE IS TO BE COATED WITH TNE MEC SERIES 43-38H DIFFUSED ALUMINUM OR EQUIVALENT



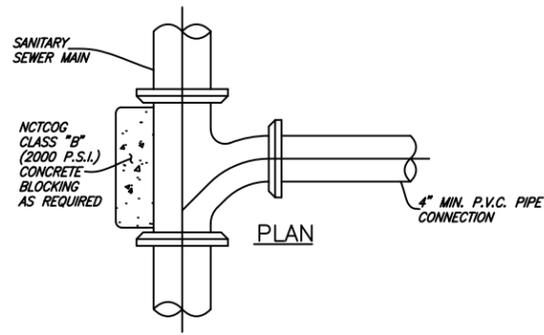
CITY OF DENISON, TEXAS

STANDARD CONSTRUCTION DETAILS
SANITARY SEWER / MANHOLES

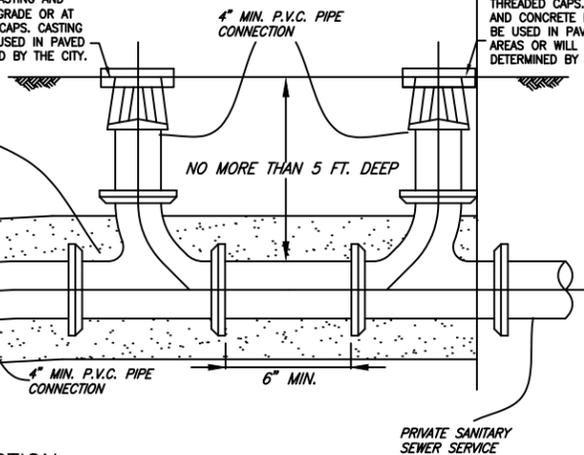
AUGUST
2025

SHEET NO.

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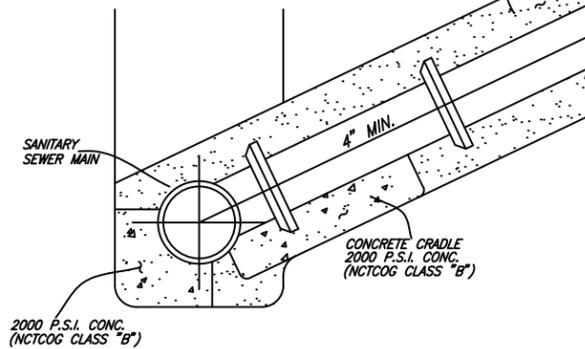


TO BE STANDARD CLEANOUT CASTING AND CONCRETE PAD AT 6" ABOVE GRADE OR AT GRADE WITH WHITE THREADED CAPS. CASTING AND CONCRETE PAD WILL BE USED IN PAVED AREAS OR WILL BE DETERMINED BY THE CITY.



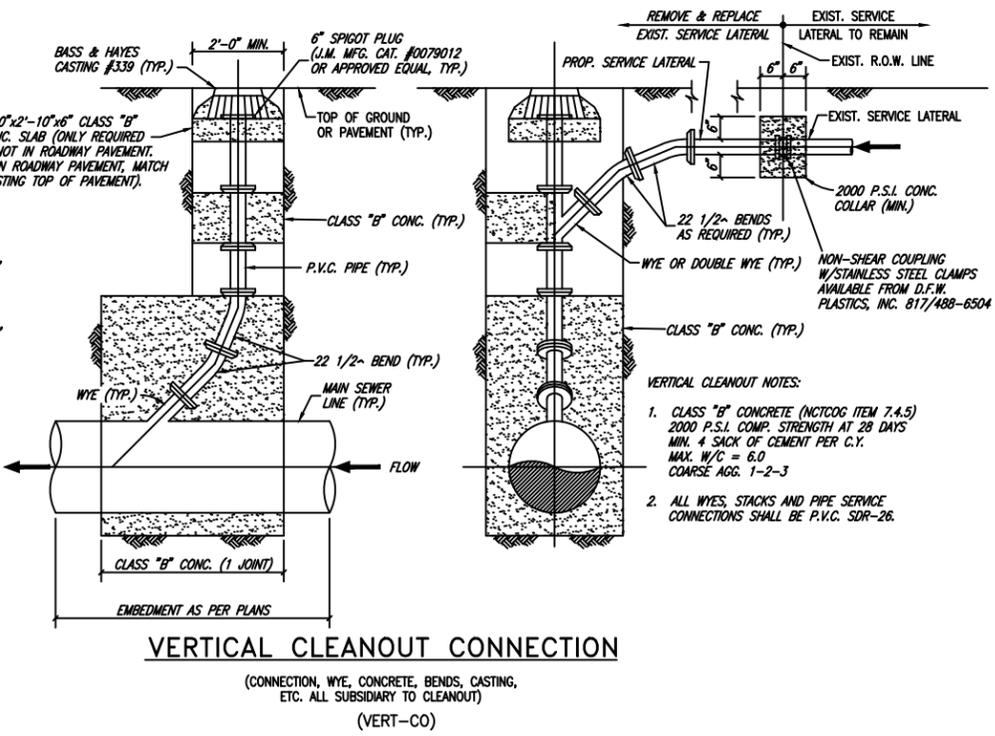
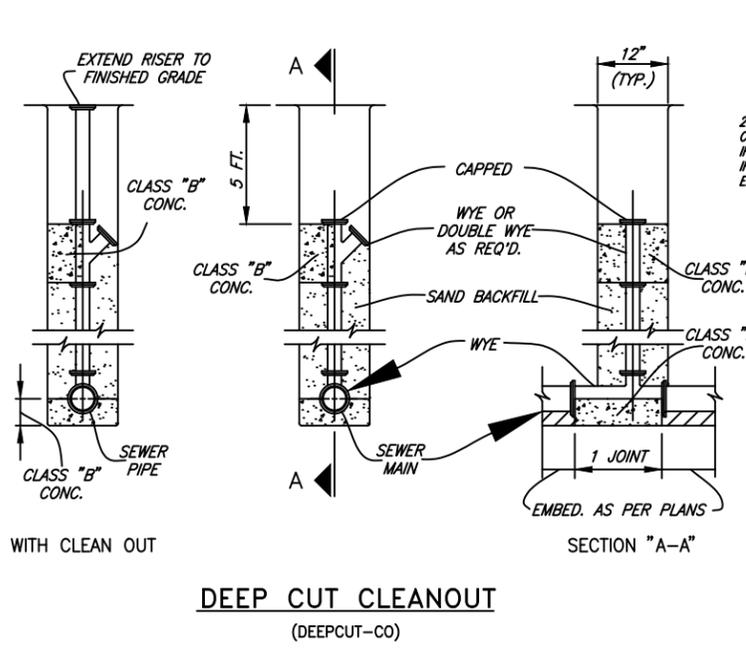
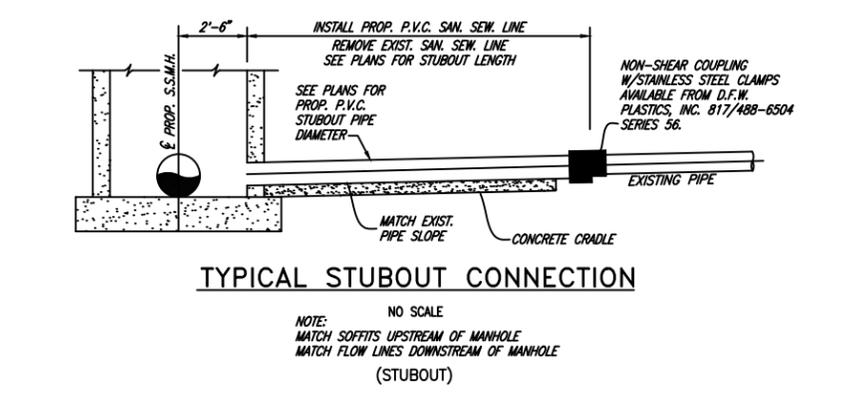
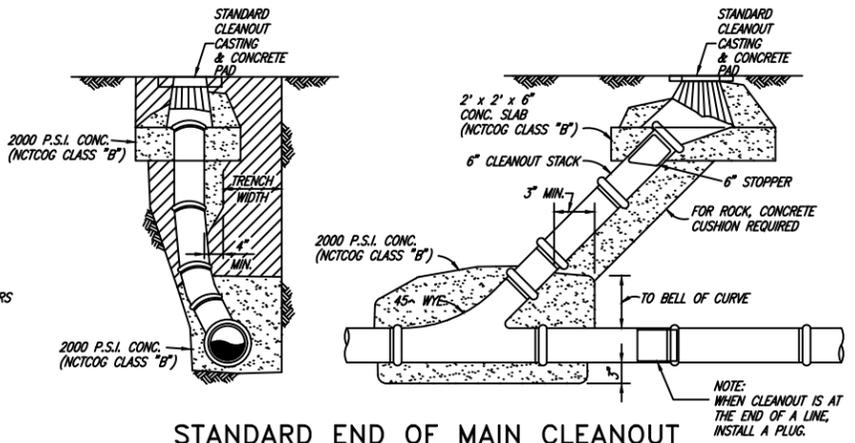
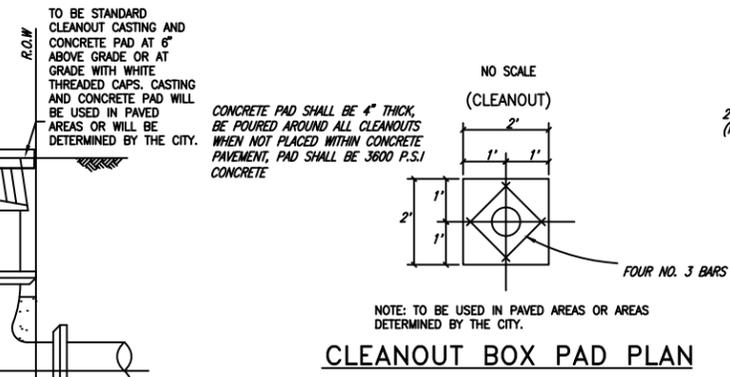
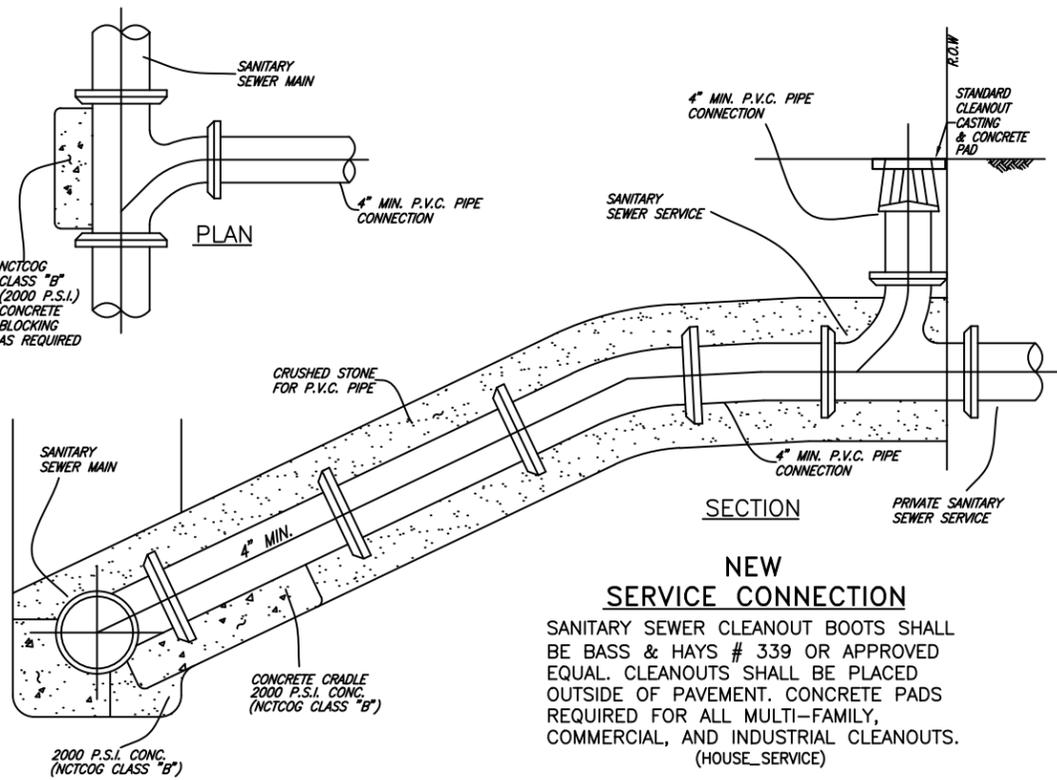
**SECTION
REHAB
SERVICE CONNECTION**

SANITARY SEWER CLEANOUT BOOTS SHALL BE BASS & HAYS # 339 OR APPROVED EQUAL. CLEANOUTS SHALL BE PLACED OUTSIDE OF PAVEMENT. CONCRETE PADS REQUIRED FOR ALL MULTI-FAMILY, COMMERCIAL, AND INDUSTRIAL CLEANOUTS. (HOUSE_SERVICE)



**SECTION
NEW
SERVICE CONNECTION**

SANITARY SEWER CLEANOUT BOOTS SHALL BE BASS & HAYS # 339 OR APPROVED EQUAL. CLEANOUTS SHALL BE PLACED OUTSIDE OF PAVEMENT. CONCRETE PADS REQUIRED FOR ALL MULTI-FAMILY, COMMERCIAL, AND INDUSTRIAL CLEANOUTS. (HOUSE_SERVICE)



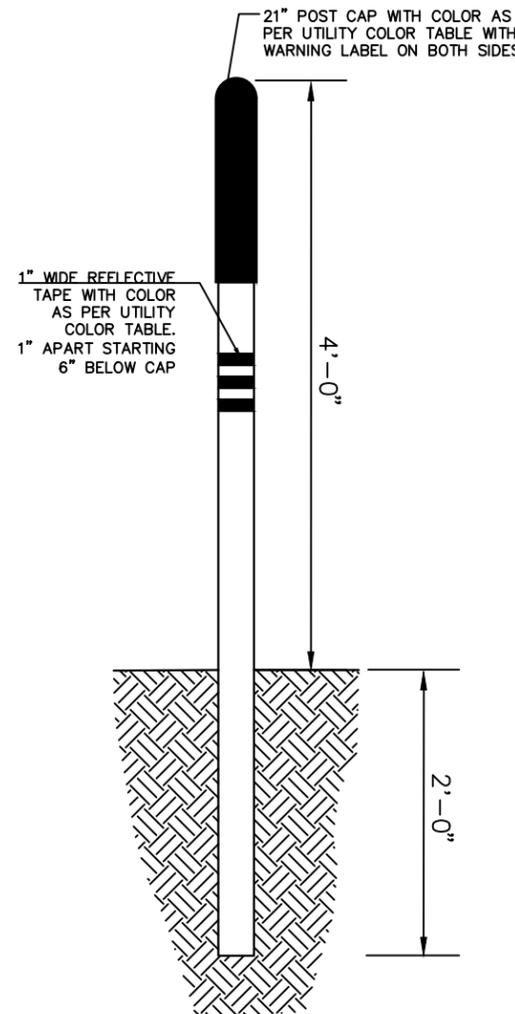
UTILITY COLOR TABLE	
UTILITY	COLOR
POTABLE WATER	BLUE
RAW & RECLAIMED WATER	PURPLE
SANITARY SEWER	GREEN
STORM DRAIN	RED
FIBER & SCADA	ORANGE

CAUTION
UTILITY
PIPELINE



IN CASE OF EMERGENCY PLEASE CALL: (XXX) XXX-XXX

FOR LINE LOCATION PLEASE CALL: (XXX) XXX-XXXX



- NOTES:**
- MARKERS SHALL BE REQUIRED FOR ALL POTABLE WATER, RECLAIMED WATER, AND SANITARY SEWER LINES GREATER THAN 12".
 - MARKERS SHALL BE REQUIRED FOR STORM DRAINS WHEN INDICATED ON THE DRAWINGS.
 - PLACE MARKERS AT EACH RIGHT-OF-WAY CROSSING AND AT MAJOR UTILITY CROSSINGS AS INDICATED IN THE DRAWINGS.
 - LIST OF APPROVED SUPPLIERS:
RHINO MARKING & PROTECTION SYSTEMS
 - FOR LINE LOCATION AND EMERGENCIES PLEASE REACH OUT TO DENISON PUBLIC WORKS DEPARTMENT



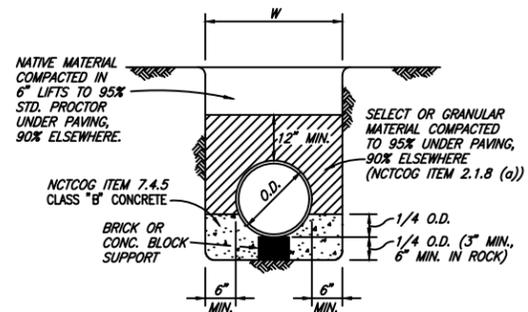
CITY OF DENISON, TEXAS

STANDARD CONSTRUCTION DETAILS
CURB & GROUND UTILITY MARKERS

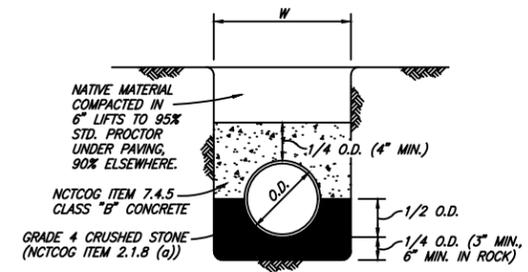
**AUGUST
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SHEET NO.

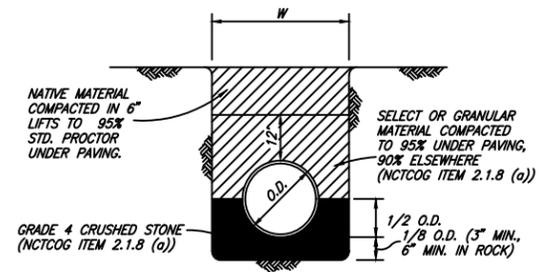
29



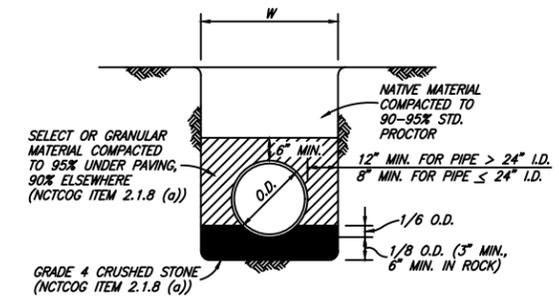
CLASS A EMBEDMENT
CONCRETE CRADLE
(CLASSA)



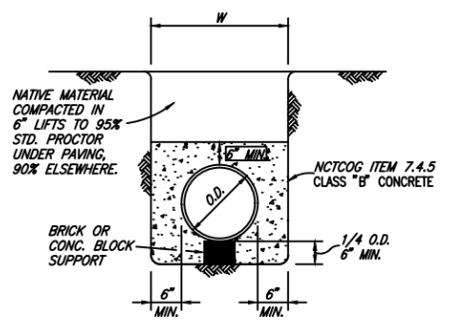
CLASS A-1 EMBEDMENT
CONCRETE CAP
(CLASSA1)



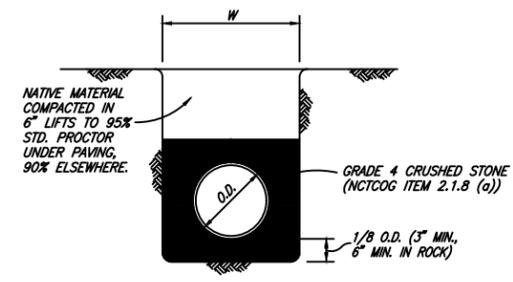
CLASS B+ EMBEDMENT
STD PVC WATER
(CLASSBP)



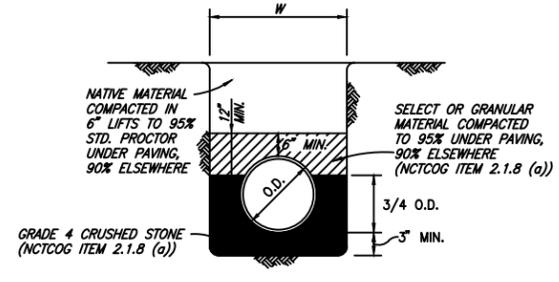
CLASS C EMBEDMENT
STD. DUCTILE IRON WATER OR SEWER
STD. R.C.C.P. WATER
STD. STORM SEWER
(CLASSC)



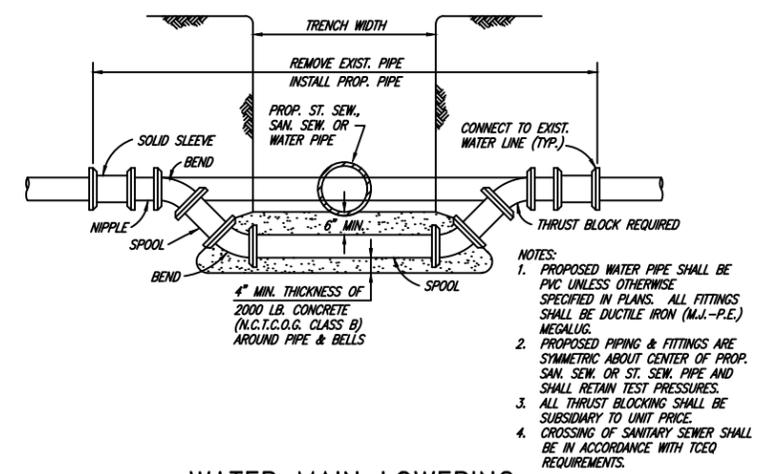
CLASS G EMBEDMENT
CONCRETE ENCASEMENT
(CLASSG)



CLASS H EMBEDMENT
P.V.C. PIPE ONLY
STD. P.V.C. SEWER
(CLASSH)



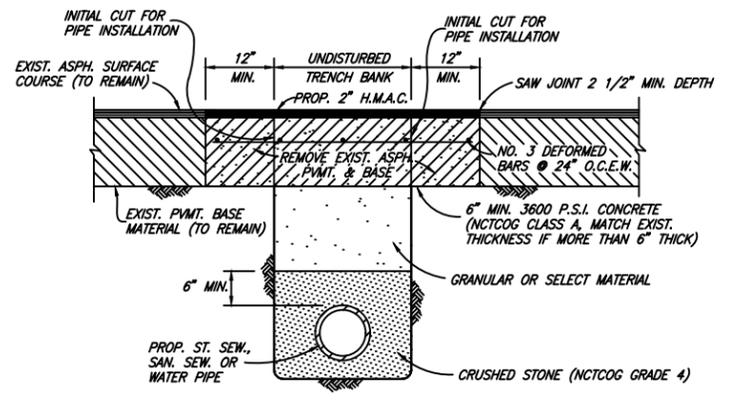
CLASS B-1 EMBEDMENT
P.V.C. PIPE ONLY
STD. P.V.C. WATER
(CLASSB1)



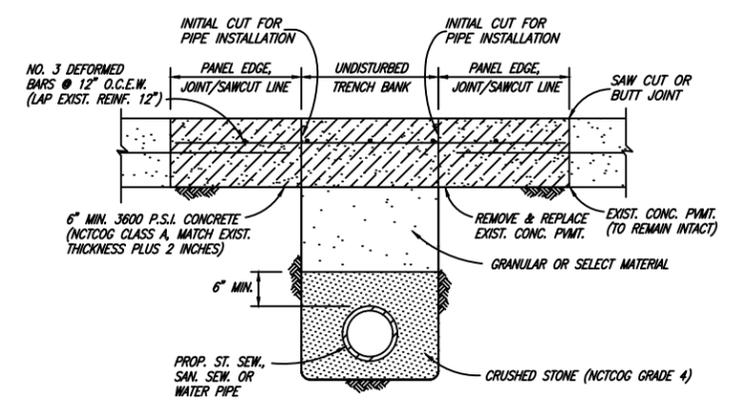
WATER MAIN LOWERING
(WMLow)

EMBEDMENT NOTES

ENCASEMENT PIPES OR 150 PSI PRESSURE PIPES ARE PREFERRED OVER CONCRETE ENCASEMENT. INSTALLATION SHALL FOLLOW ALL TCEQ STANDARDS FOR DEPTH, PLACEMENT, AND MATERIAL SPECIFICATIONS.



ASPHALT STREET OR DRIVEWAY REPAIR
(ASPHPVMT)



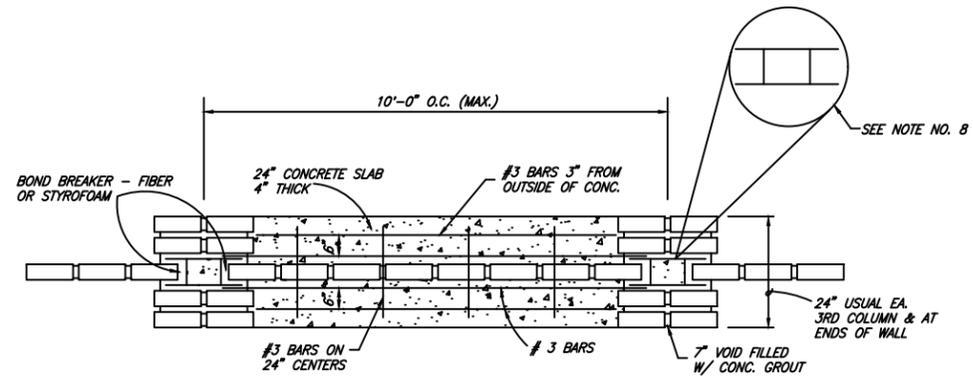
CONCRETE STREET OR DRIVEWAY REPAIR
(CONCPVMT)

GRADE 4 CRUSHED STONE GRADATION

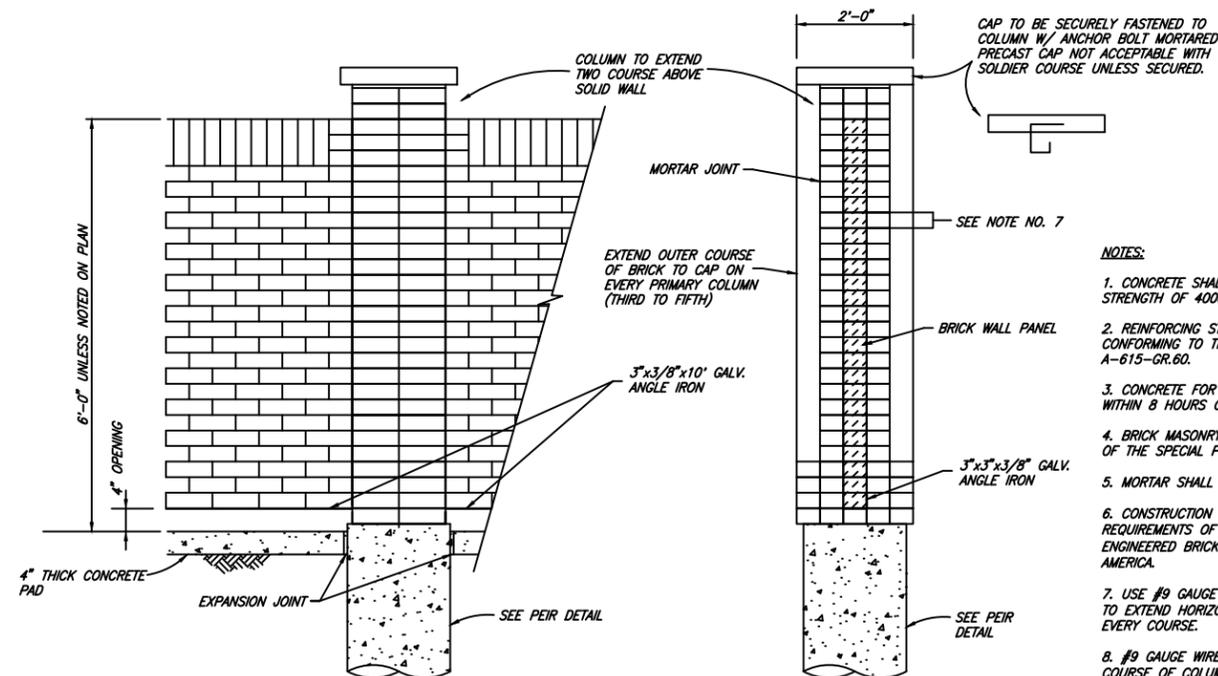
SIEVE SIZE	% RETAINED
1-1/2 INCH	0
1 INCH	0-5
1/2 INCH	40-75
NO. 4	90-100
NO. 8	95-100

(CRU-STN)





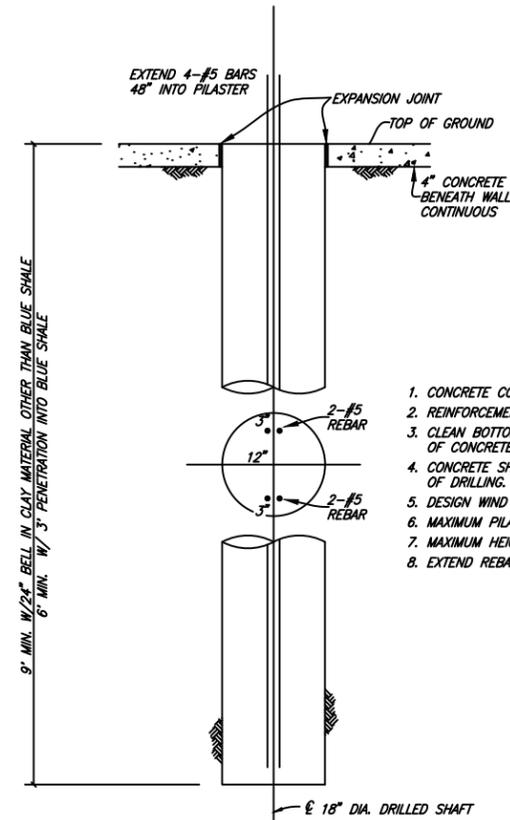
TYPICAL WALL & COLUMN LAYOUT PLAN



THIN WALL BRICK SCREENING WALL ELEVATION
(BRKFENCE)

NOTES:

1. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 P.S.I. AT 28 DAYS.
2. REINFORCING STEEL SHALL BE NEW BILLET STEEL CONFORMING TO THE REQUIREMENTS OF ASTM A-615-GR.60.
3. CONCRETE FOR DRILLED PIERS SHALL BE PLACED WITHIN 8 HOURS OF DRILLING PIER HOLES.
4. BRICK MASONRY SHALL BE AS SPECIFIED IN ITEM 2.3.6 OF THE SPECIAL PREVISIONS.
5. MORTAR SHALL BE TYPE "S".
6. CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE "RECOMMENDED PRACTICE FOR ENGINEERED BRICK MASONRY"-- BRICK INSTITUTE OF AMERICA.
7. USE #9 GAUGE 1-3/4" WIDE GALVANIZED LADDER WIRE TO EXTEND HORIZONTAL IN WALL PANEL DURAWALL CORP. EVERY COURSE.
8. #9 GAUGE WIRE FABRICATED AS SHOWN BETWEEN EACH COURSE OF COLUMN BRICK.
9. THE WALL SHALL BE A MINIMUM OF SIX FEET IN HEIGHT AS MEASURED FROM THE NEAREST ALLEY EDGE OR SIDEWALK GRADE, WHICHEVER IS HIGHER. THE COLOR OF THE WALL SHALL BE SELECTED BY THE CITY.
10. 3"x3/8" GALVANIZED ANGLE IRON PLATE SHALL BE INSTALLED BELOW THE BOTTOM ROW OF BRICKS & BE ANCHORED INTO THE COLUMNS.



PIER DETAIL
(WALLPIER)

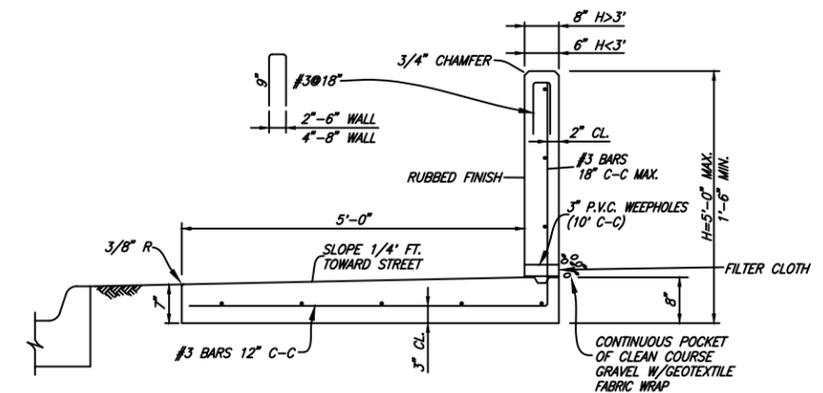
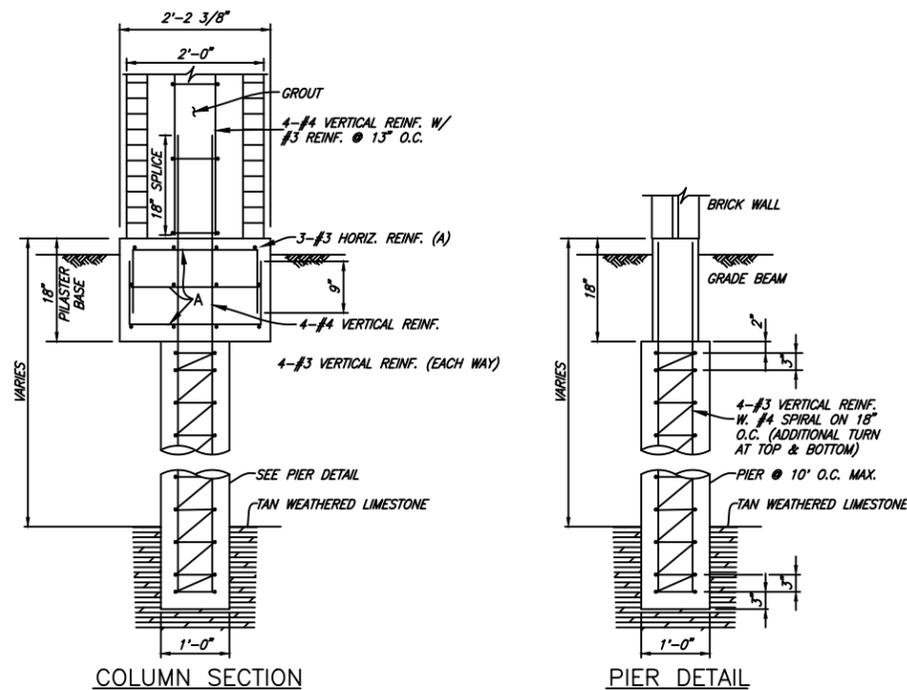
1. CONCRETE COMP. STRENGTH-4000 P.S.I.
2. REINFORCEMENT STEEL - ASTM A615 - GR 60.
3. CLEAN BOTTOM OF HOLE PRIOR TO PLACEMENT OF CONCRETE.
4. CONCRETE SHALL BE PLACED WITHIN 8 HOURS OF DRILLING.
5. DESIGN WIND PRESSURE - 20 PSF.
6. MAXIMUM PILASTER SPACING - 10'-0"
7. MAXIMUM HEIGHT OF WALL - 6'-0".
8. EXTEND REBAR 48" INTO PILASTER AND COLUMN.



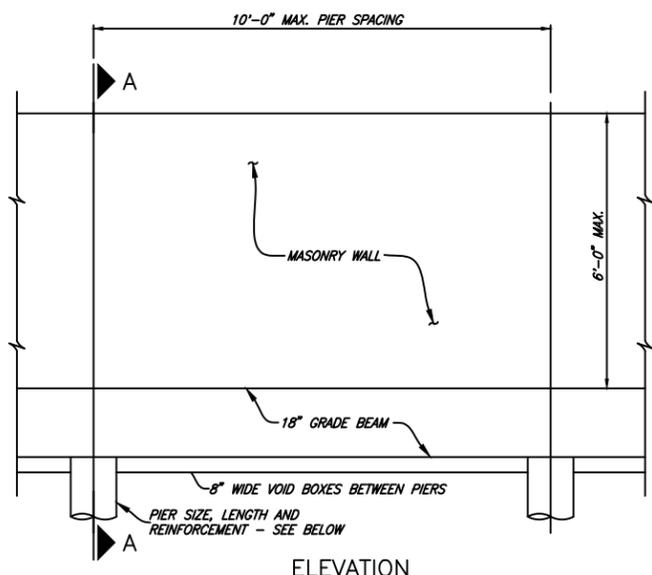
SCREENING WALL

GENERAL NOTES:

1. CONCRETE - MINIMUM COMPRESSIVE STRENGTH OF 3000 P.S.I. AT 28 DAYS.
2. REINFORCEMENT - ASTM A 36
3. MASONRY - COMPRESSIVE STRENGTH SHALL BE AS PRESCRIBED IN ITEM 2.3.6 SPECIAL PROVISIONS.
4. WIND LOAD - 20 P.S.F.
5. PIER BEARING STRESSES - SEE BRICK SCREENING WALL NOTES.
6. MORTAR - TYPE "S"
7. PROVIDE CONTROL JOINTS AT 50 FT.
8. PROVIDE EXPANSION JOINTS AT 200 FT. CENTER MAXIMUM.
9. PROVIDE MIN. 9' FT. W/ 24" DIA. BELL IN CLAY OR OTHER MATERIAL EXCEPT BLUE SHALE. 6' MIN. WITH 3' MIN. INTO BLUE SHALE.
10. ALL EXPOSED CONCRETE SHALL BE RUBBED FINISHED SURFACE.
11. SIDEWALKS ADJACENT TO WALLS MUST BE 5'-0" MIN. WIDTH FROM ALL PORTIONS OF THE WALL (INCLUDING PILASTER, COLUMNS, ETC.).
12. MAX. PILASTER SPACING 40 FT.
13. WALLS SHALL NOT BE PLACED IN THE VISIBILITY EASEMENT OR STREET R.O.W.
14. THE WALL SHALL BE A MINIMUM OF SIX FEET IN HEIGHT AS MEASURED FROM THE NEAREST ALLEY EDGE OR SIDEWALK GRADE, WHICHEVER IS THE HIGHER. THE COLOR OF THE WALL SHALL BE LIMITED TO EARTH-TONE COLORS, EXCLUDING GRAY, GREEN AND WHITE. THE COLOR OF THE WALL SHALL BE UNIFORM ON EACH SIDE OF A THOROUGHFARE FOR THE ENTIRE LENGTH BETWEEN INTERSECTING THOROUGHFARES, UNLESS OTHERWISE APPROVED BY THE ENGINEERING DEPARTMENT. THE FINISH OF THE WALL SHALL BE CONSISTENT ON ALL SURFACES.
15. IF WROUGHT IRON FENCING IS TO BE UTILIZED ON REQUIRED SCREENING, ALL WROUGHT IRON MUST BE SOLID STOCK, NO TUBULAR STEEL WILL BE ALLOWED.



TYPE 6 SIDEWALK RETAINING WALL
(RETAINING_WALL)

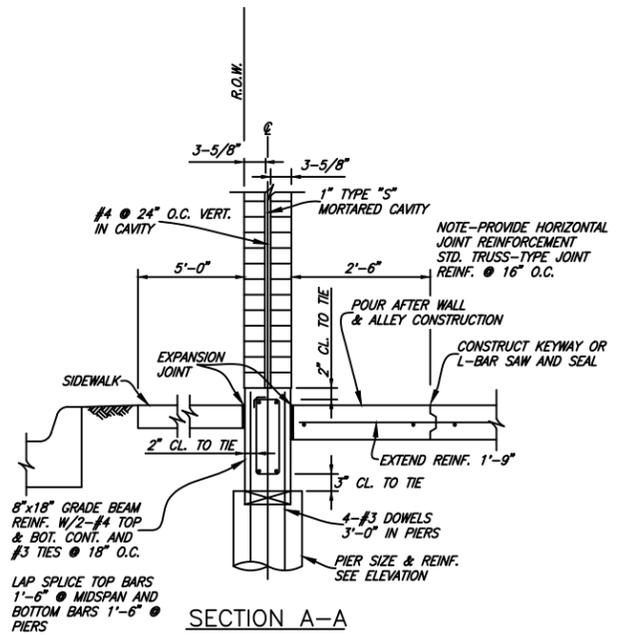


ELEVATION

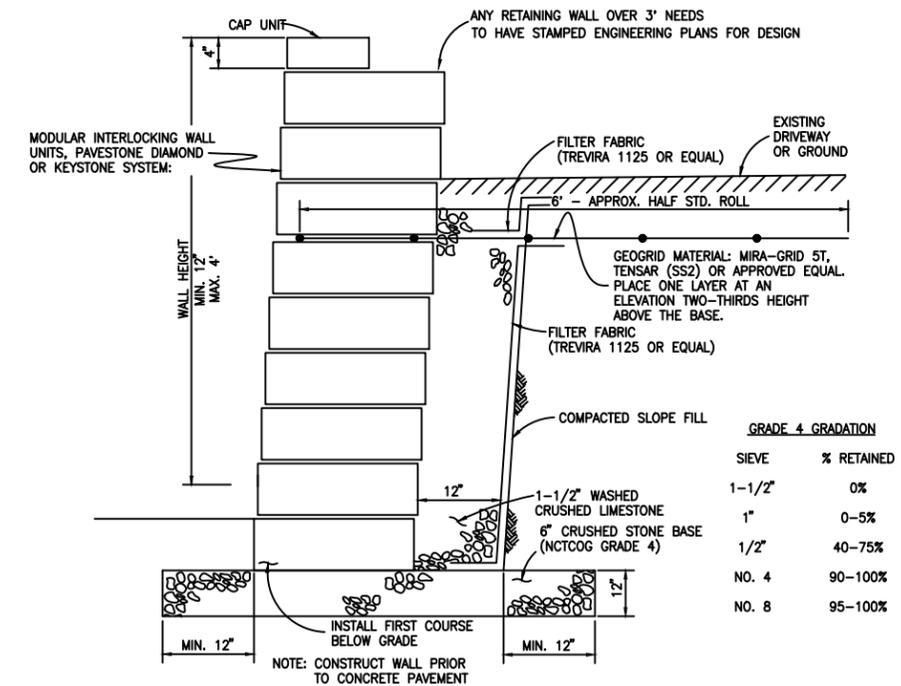
DRILLED PIERS 12" DIA. REINF. W/ 4-#5 VERT. & #4 REINF. @ 18" O.C. MINIMUM LENGTH OF PIER IS 6'-0". *PIER BOTTOM MAY BE EITHER OF THE TWO ALTERNATES:

1. 12" DIA. SHAFT EMBEDDED MINIMUM 3'-0" INTO BLUE SHALE RESULTING BEARING STRESS IS 8.0 KIPS PER SQUARE FOOT.
 2. 12" DIA. SHAFT W/ 24" DIA. BELL IN CLAY. RESULTING BEARING STRESS IN 2.0 KIPS PER SQUARE FOOT.
- * SEE GENERAL NO. 9

BRICK SCREENING WALL



SECTION A-A

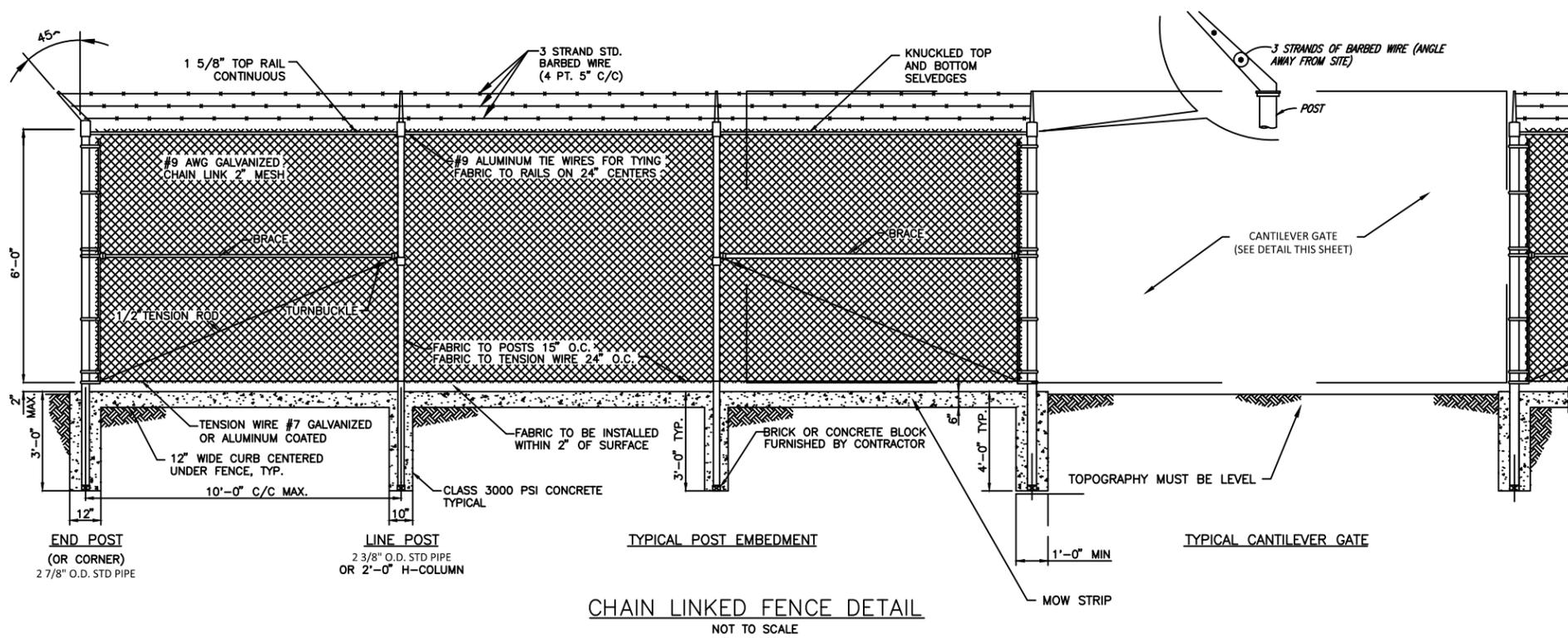


STONE RETAINING WALL
NO SCALE
(PAVESTONE)

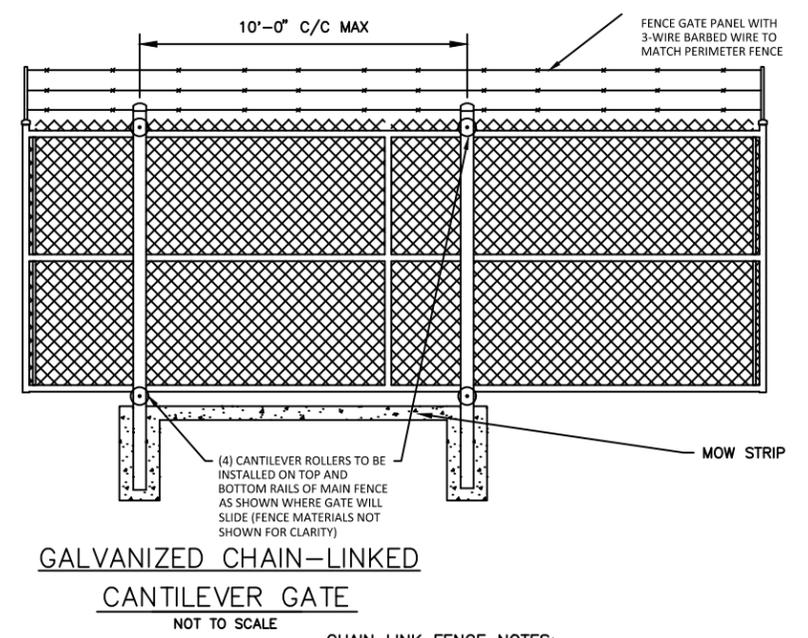
1. FOR RETAINING WALLS HIGHER THAN 30" A 42" HIGH RAILING OR GUARDRAIL IS REQUIRED WITH A BALUSTER SPACING OF NO MORE THAN 4'

GRADE 4 GRADATION	
SIEVE	% RETAINED
1-1/2"	0%
1"	0-5%
1/2"	40-75%
NO. 4	90-100%
NO. 8	95-100%





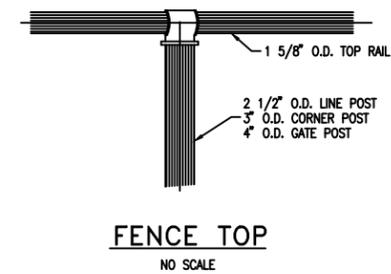
CHAIN LINKED FENCE DETAIL
NOT TO SCALE



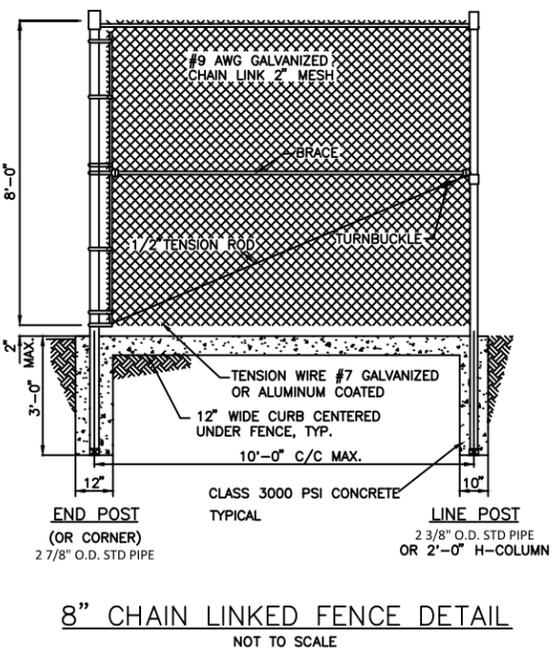
GALVANIZED CHAIN-LINKED
CANTILEVER GATE
NOT TO SCALE

CHAIN LINK FENCE NOTES:

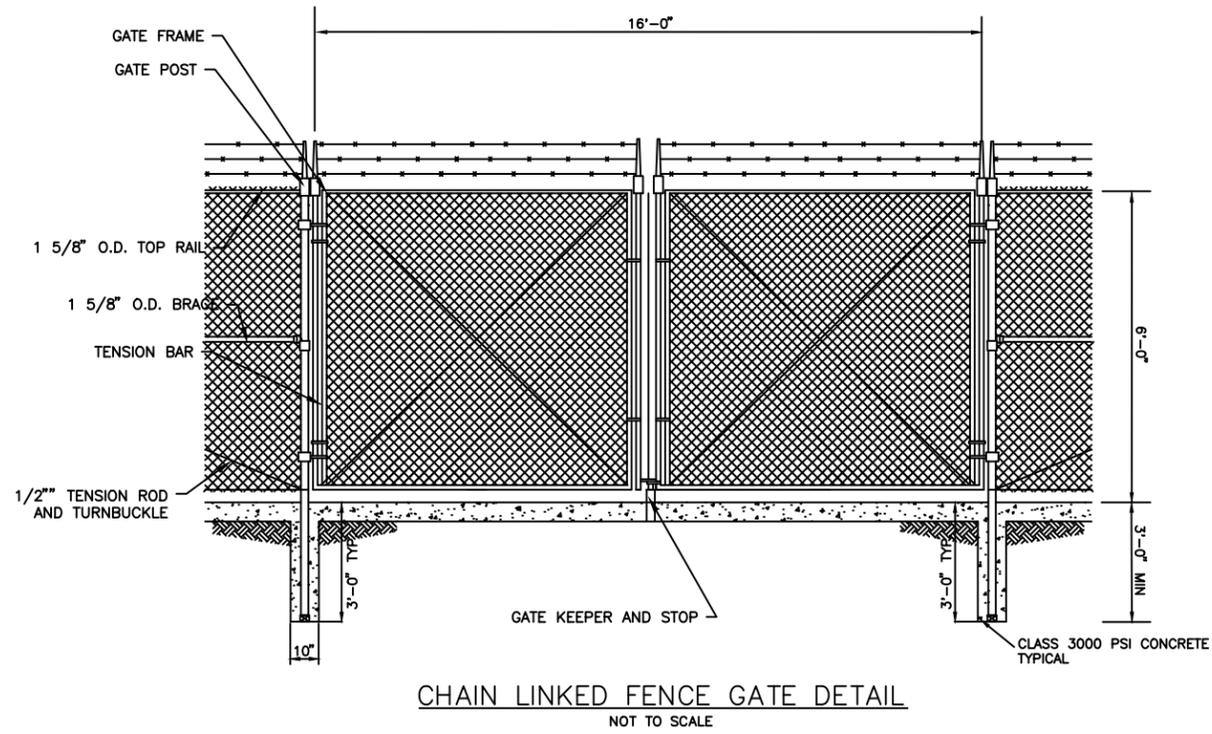
1. ALL METAL PARTS SHALL BE HOT DIP GALVANIZED AFTER FABRICATION.
2. FENCES AND GATES SHALL BE FURNISHED COMPLETE WITH ALL NECESSARY FITTINGS AND HARDWARE. AND ALL FENCE FABRIC SHALL HAVE A BLACK P.V.C. COATING.
3. FOR GATES - SIZES OF PIPES, SAG RODS AND TURNBUCKLES SHALL BE MANUFACTURER'S STANDARD WHICH ALSO MEET THE REQUIREMENTS OF THIS DRAWING.
4. CANTILEVER SLIDE GATE MUST BE APPROVED BY CITY OF DENISON PRIOR TO PURCHASE.
5. CANTILEVER GATE MUST BE CONSTRUCTED ON LEVEL GROUND, PARALLEL WITH SLIDING MOTION OF THE GATE.
6. CONTRACTOR SHALL FURNISH AND INSTALL AN AUTOMATIC GATE OPERATOR WHICH MUST BE APPROVED BY THE CITY. ALL EXTERIOR MOUNTING OF EQUIPMENT SHALL BE IN WEATHERPROOF ENCLOSURES.
7. POSTS SHALL BE ROLLED OR EXTRUDED SECTIONS OR TUBING OF STEEL OR ALUMINUM CAPABLE OF WITHSTANDING A LATERAL FORCE OF 100 POUNDS APPLIED AT THE TOP. ALL HOLLOW POSTS SHALL BE CAPPED.
8. STANDARD PIPE SIZES INDICATED ARE NOMINAL DIAMETER, SCHEDULE 40, PER AMERICAN STANDARDS ASSOCIATION (ASA) B 36.10.
9. LATCH ASSEMBLY FOR SWING GATES, INCLUDING PLUNGE ROD, CATCH BLOCK AND LOCKING MECHANISM, SHALL BE PER MANUFACTURER'S STANDARD.
10. PROVIDE HASP FOR PADLOCK.
11. CHAIN LINK FENCE LESS THAN 8' IN HEIGHT MUST HAVE 3 STRANDS OF BARBED WIRE ON ANGLED POST PER THIS DETAIL.



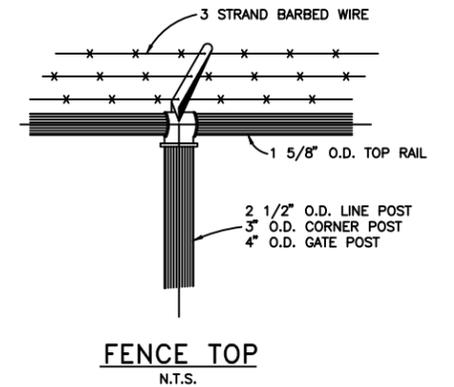
FENCE TOP
NO SCALE



8" CHAIN LINKED FENCE DETAIL
NOT TO SCALE

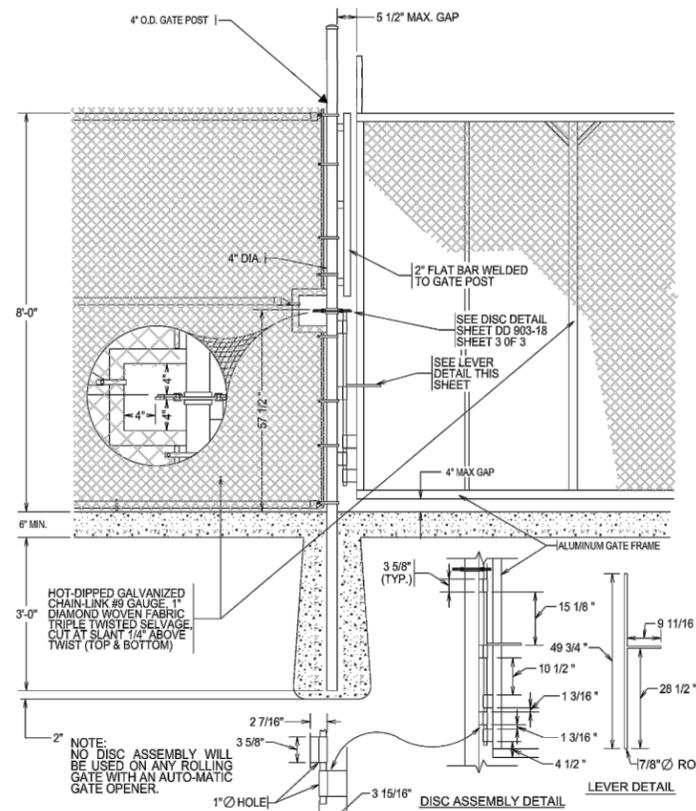


CHAIN LINKED FENCE GATE DETAIL
NOT TO SCALE



FENCE TOP
N.T.S.



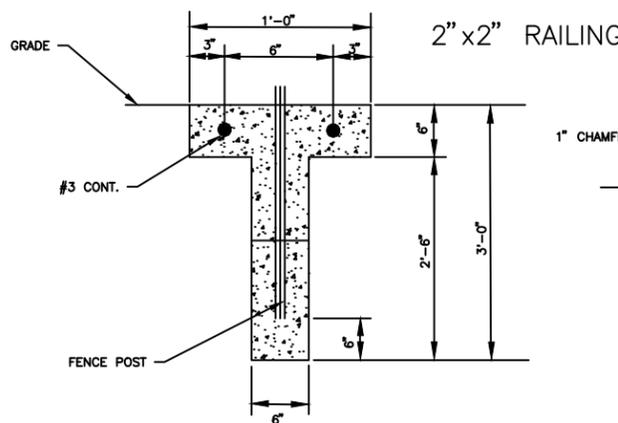


NOTE:
NO DISC ASSEMBLY WILL
BE USED ON ANY ROLLING
GATE WITH AN AUTO-MATIC
GATE OPENER.

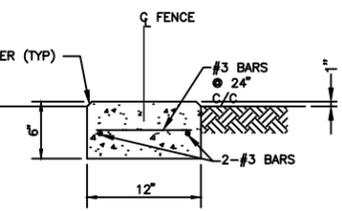
NOTE:
1. ALL SPARE CLIPS TO BE COMPLETELY WELDED ALL AROUND. TACK WELD WILL NOT BE ACCEPTED.

NOTE: ALL CONCRETE FOR MOW STRIP AND POST FOUNDATIONS SHALL BE 3,000 PSI

**HEAVY DUTY CANTILEVER SLIDE GATE
DETAIL**
NOT TO SCALE

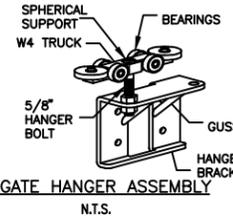
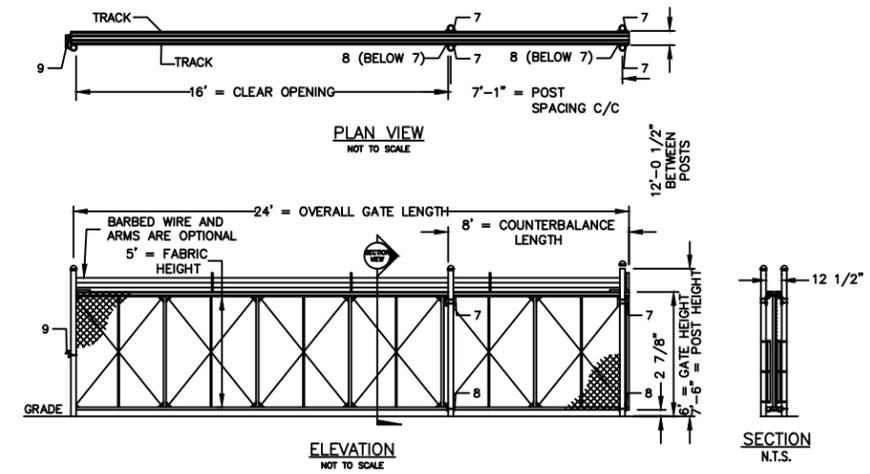


FENCE MOW STRIP DETAIL
NOT TO SCALE

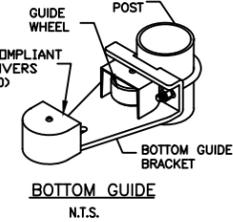


NOTE: FENCE MOW STRIP SHALL
HAVE AN 1/8" CROWN
TYPICAL FENCE MOW STRIP SECTION

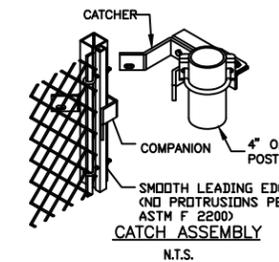
- NOTES:
1. PROVIDE EXPANSION JOINTS AT MAXIMUM 117' O.C. AND AT INTERSECTIONS. PROVIDE SIDEWALK GROOVES AT EQUAL SPACING NOT TO EXCEED 5'-6" O.C. BROOM FINISH. PROVIDE EXPANSION JOINT MATERIAL AGAINST ALL CURBS AND STRUCTURE.
 2. INSTALL TYPICAL MOW STRIP ALL AROUND UNPAVED PERIMETERS OF ALL NEW STRUCTURES INCLUDING METER VAULTS, FENCES, AND MANHOLES.



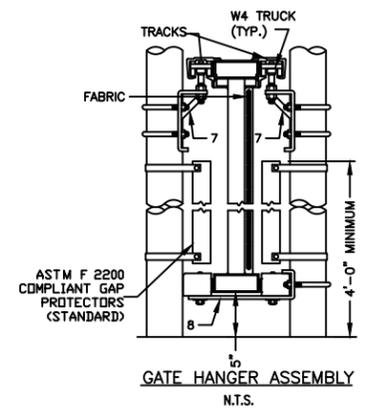
GATE HANGER ASSEMBLY
N.T.S.



BOTTOM GUIDE
N.T.S.



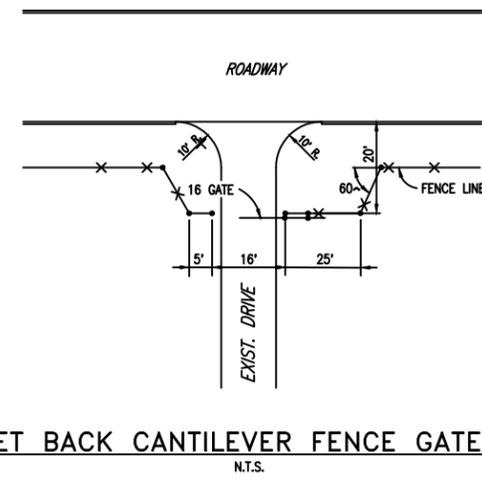
CATCH ASSEMBLY
N.T.S.



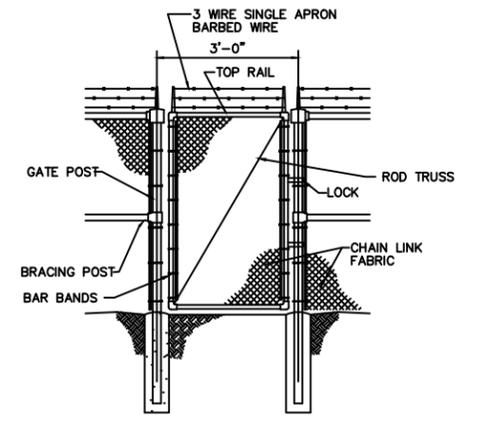
GATE HANGER ASSEMBLY
N.T.S.

- NOTES:
1. ALL FITTINGS STANDARDLY PROVIDED FOR 4" O.D. POSTS. OTHER SIZES AVAILABLE UPON REQUEST.
 2. BARB ARMS (FOR BARBED WIRE) INCLUDED FOR 6' FENCE HEIGHT
 3. 8' FENCE HEIGHT DOES NOT INCLUDE BARB ARMS OR BARB WIRE

GATE HANGER ASSEMBLY
NOT TO SCALE



20' SET BACK CANTILEVER FENCE GATE DETAIL
N.T.S.



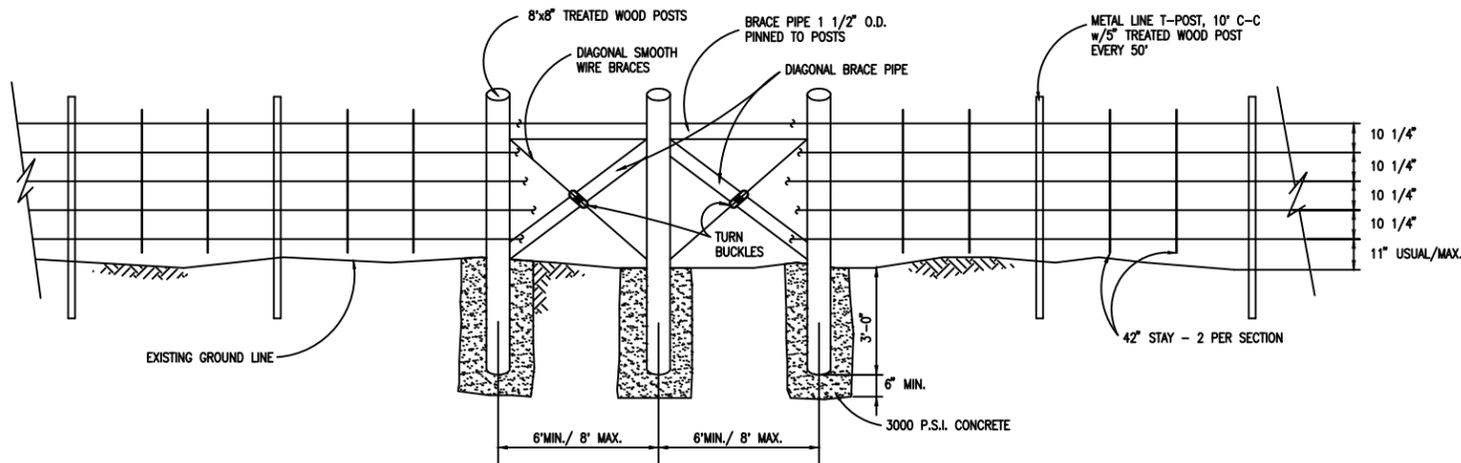
**CHAIN-LINKED PEDESTRIAN
GATE DETAIL**
NOT TO SCALE



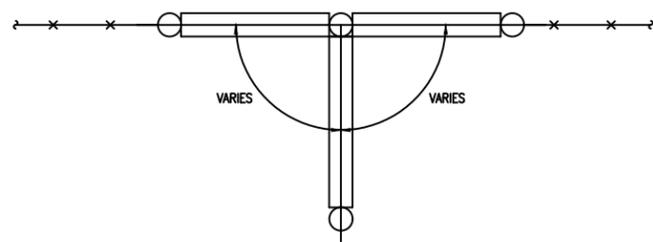
CITY OF DENISON, TEXAS
STANDARD CONSTRUCTION DETAILS
CHAIN LINK FENCING

**AUGUST
2025**

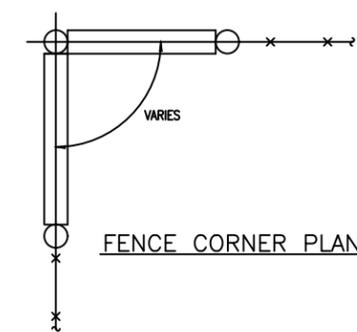
SHEET NO.
34



TYPE "B" FARM FENCE WITH PULL POST UNIT
N.T.S.

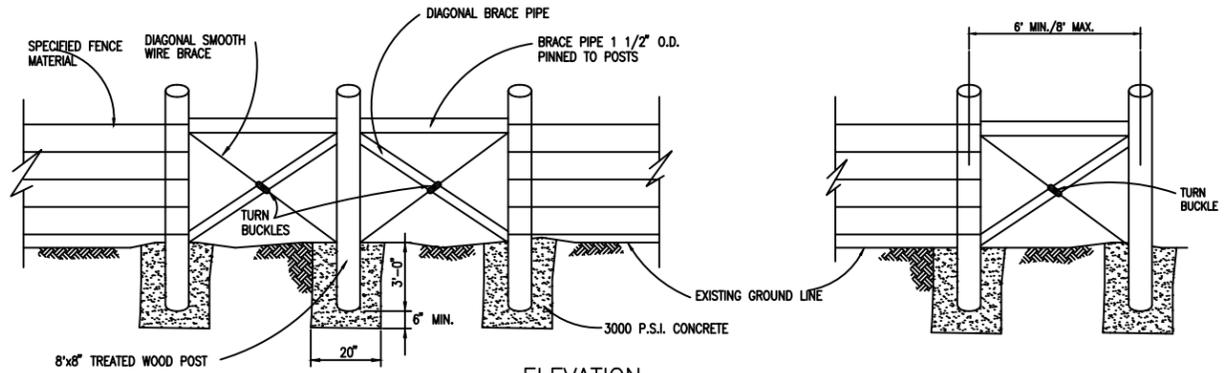


FENCE JUNCTION PLAN

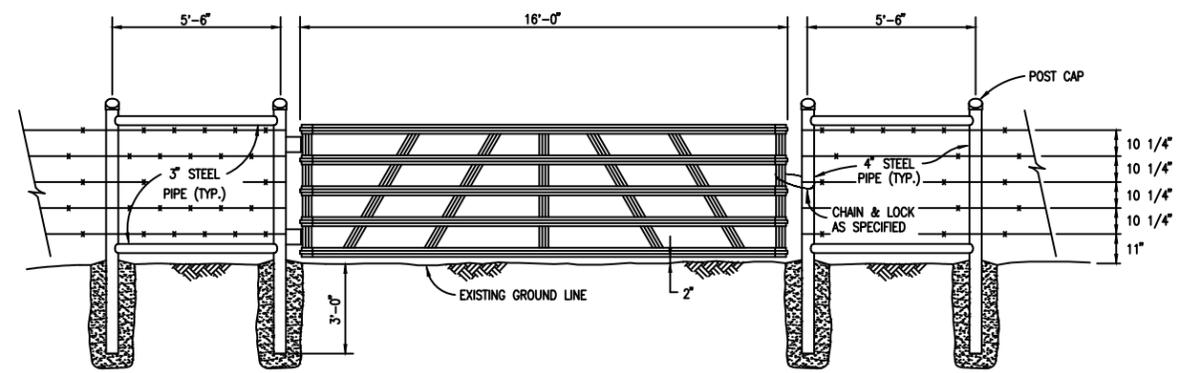


FENCE CORNER PLAN

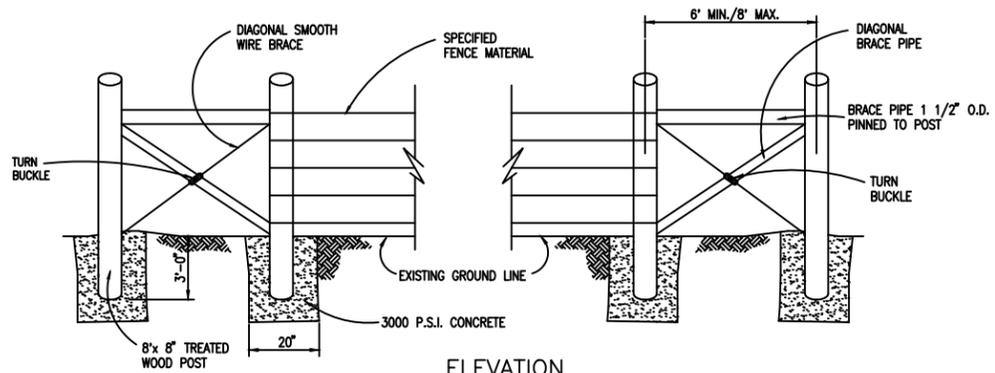
- GENERAL NOTES:**
1. BARBED WIRE SHALL BE TWO STRAND TWISTED NO. 12-1/2 AWS GAUGE GALVANIZED STEEL WIRE WITH TWO-POINT BARBS OF NO. 14 AWS GAUGE STEEL WIRE AND CONFORMING TO ZINC-COATED(GALVANIZED)STEEL BARBED WIRE, ASTM DESIGNATION A 121, CLASS 1.
 2. WOVEN WIRE FENCE FABRIC(HOG WIRE)SHALL BE OF A GOOD COMMERCIAL QUALITY OF STEEL MEETING THE REQUIREMENTS OF ZINC-COATED(GALVANIZED) STEEL WOVEN WIRE FENCE FABRIC, ASTM DESIGNATION A 116. THE TOP AND BOTTOM WIRES SHALL BE A MINIMUM NO. 10 AWS GAUGE AND THE INTERMEDIATE WIRES AND VERTICAL STAYS SHALL BE NO. 12-1/2 AWS GAUGE.
 3. METAL POSTS, RAILS, GATES, BRACES AND FITTINGS MAY BE ROLLED, FORMED OR TUBULAR IN CROSS SECTION AND SHALL BE IN ACCORDANCE WITH STRENGTH REQUIREMENTS OF METAL POSTS AND RAILS FOR INDUSTRIAL CHAIN LINK FENCE, ASTM DESIGNATION F669. ALL POSTS, RAILS, GATES AND BRACES NOT GALVANIZED SHALL BE PAINTED WITH AN APPROVED ANTI-CORROSIVE PAINT. POST CAPS SHALL BE INSTALLED ON THE OPEN END OF PIPE POSTS TO PREVENT CORROSION. FITTINGS SHALL BE IN ACCORDANCE WITH FENCE FITTINGS, ASTM DESIGNATION F626.
 4. WOOD POSTS SHALL BE SOUND AND STRAIGHT AND FREE OF EXCESSIVE KNOTS. UNTREATED POSTS MAY BE CEDAR, REDWOOD, CYPRESS OR LIVE OAK. TREATED POSTS MAY BE PINE, SPRUCE OR FIR AND SHALL HAVE A CREOSOTE OIL OR PENTACHLOROPHENOL TREATMENT OF NOT LESS THAN SIX POUNDS PER CUBIC FOOT(128 Kg. per cubic meter).
 5. PULL POST UNITS FOR FARM FENCE SHALL BE LOCATED AT 300 FEET CENTER TO CENTER MAXIMUM. METAL T-POSTS SHALL BE SPACED AT 10 FEET C-C. AT CONNECTIONS TO EXISTING FENCE, A PULL POST UNIT, CORNER UNIT OR JUNCTION UNIT SHALL BE CONSTRUCTED.
 6. GATE MANUFACTURER SHALL FURNISH HINGES, BOLTS AND A SLIDING LATCH FOR EACH GATE.
 7. CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 3000 p.s.i. IN 28 DAYS.
 8. LINE BRACE ASSEMBLY SHALL BE PLACED ON APEX OF ALL CURVES.
 9. METAL T-POSTS(6-1/2" MIN.) TO BE GREEN WITH REFLECTIVE TOPS.
 10. FENCE REPLACEMENT SHALL BE "IN KIND".



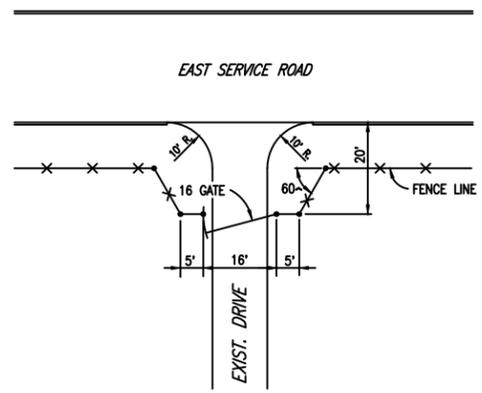
ELEVATION FENCE JUNCTION DETAIL
N.T.S.



16' STEEL GATE DETAIL
N.T.S.



ELEVATION FENCE CORNER DETAIL
N.T.S.



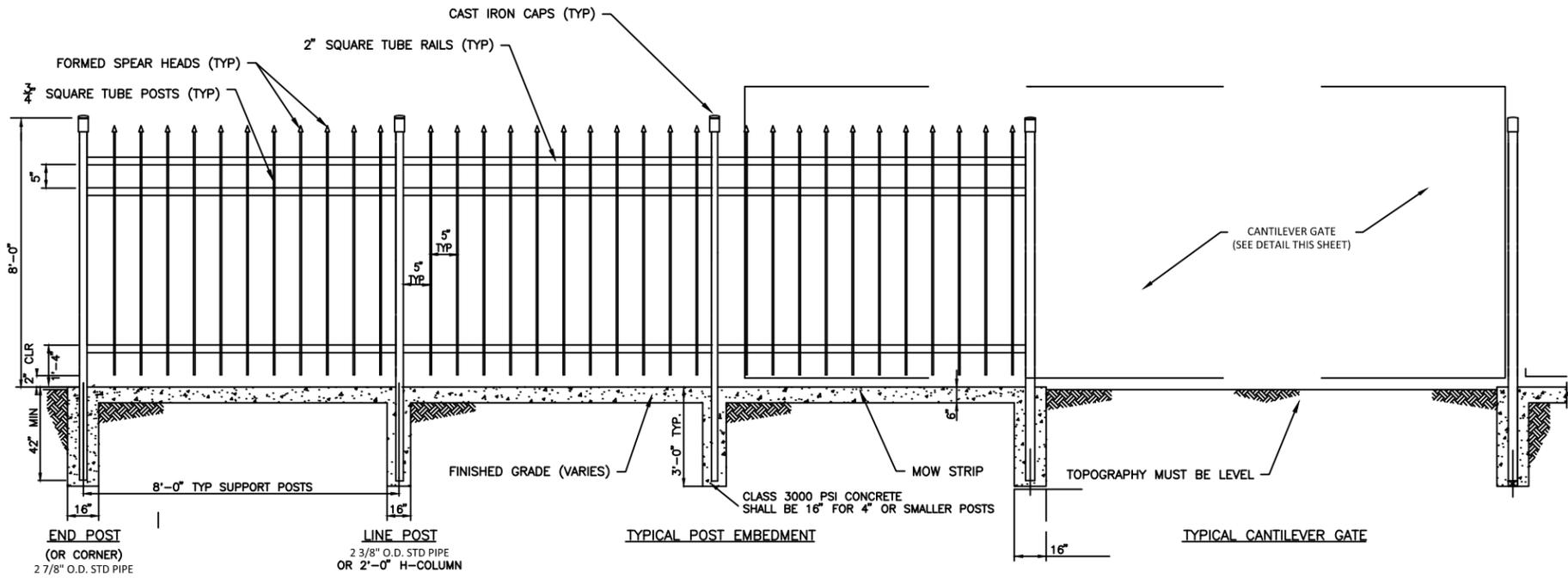
20' SET BACK FENCE DETAIL
N.T.S.



CITY OF DENISON, TEXAS
STANDARD CONSTRUCTION DETAILS
FARM FENCE / STEEL GATE

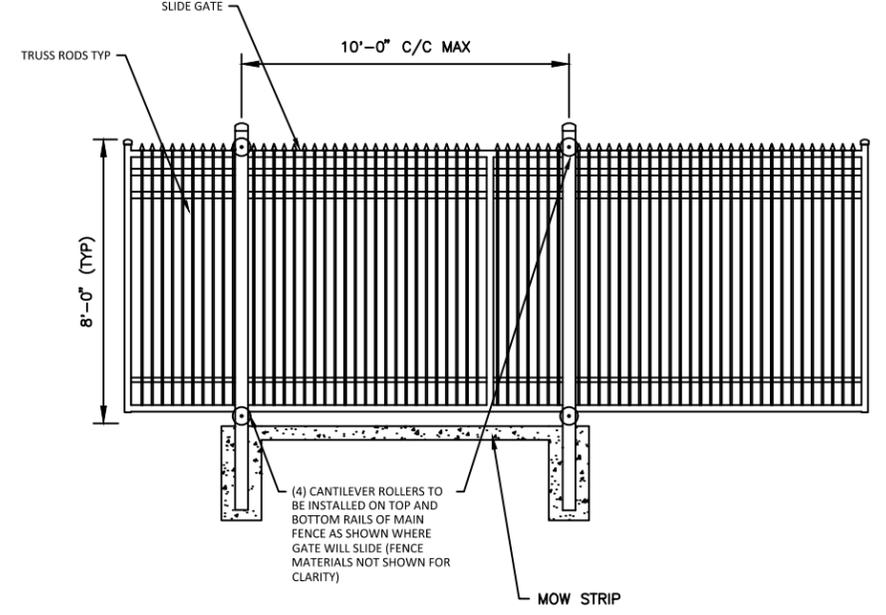
AUGUST 2025

SHEET NO.
35

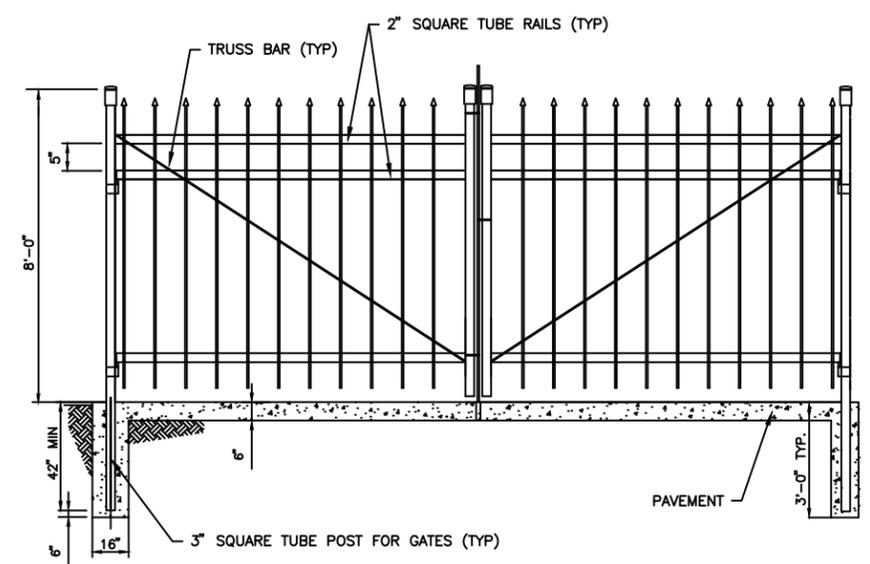


WROUGHT IRON FENCE DETAIL
NOT TO SCALE

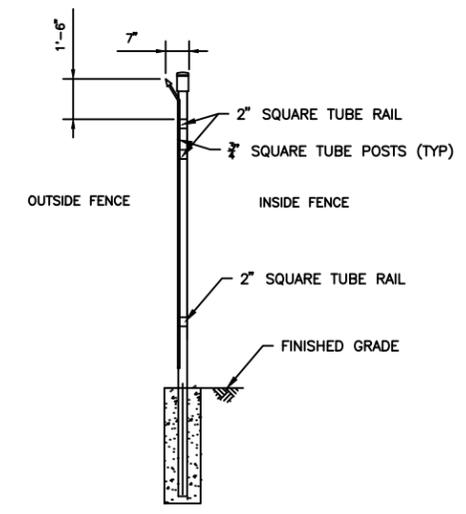
NOTES:
1. STEP DOWN FENCE IS REQUIRED TO FOLLOW GRADE WHILE MAINTAINING CONSTANT TOP OF FENCE ELEVATION, REFER TO C-001 "GRADING AND PAVING PLAN" FOR ADDITIONAL REQUIREMENTS AND GRADING DETAILS.



WROUGHT IRON CANTILEVER GATE
NOT TO SCALE



PRIVATE WROUGHT IRON SWING GATE DETAIL
NOT TO SCALE



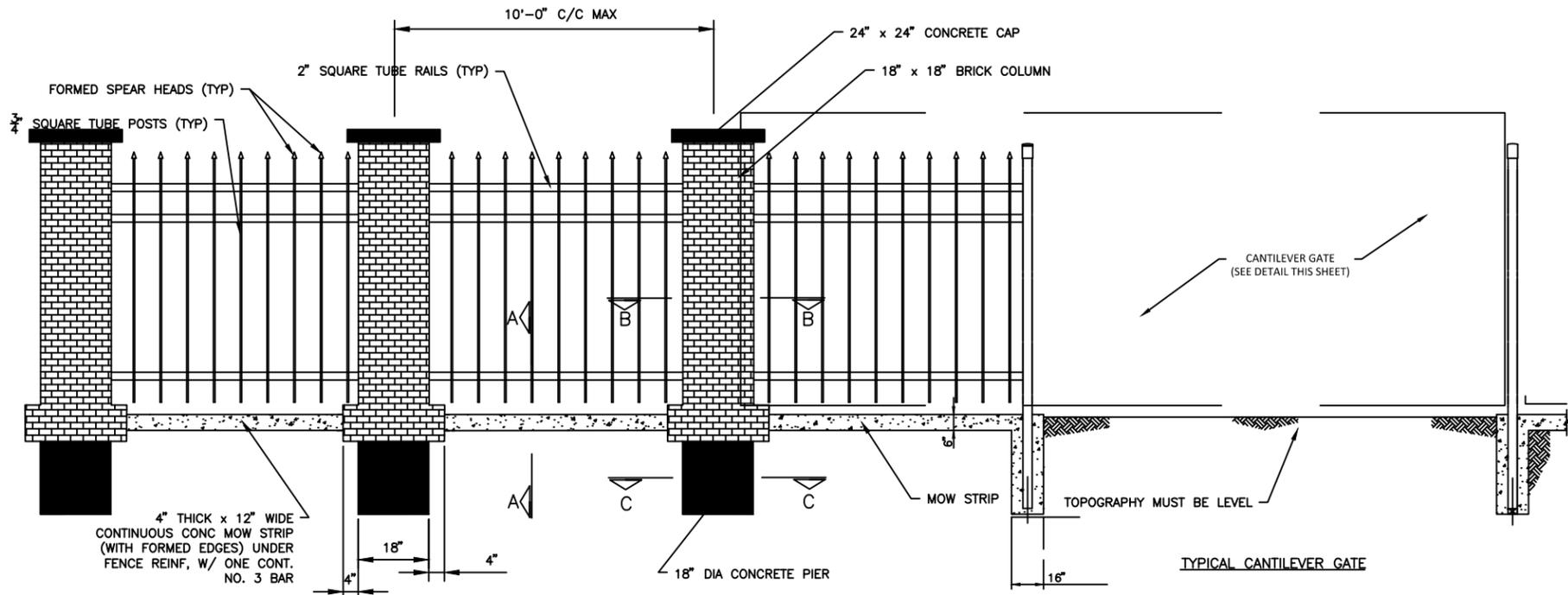
SIDE VIEW OF WROUGHT IRON FENCE
NOT TO SCALE



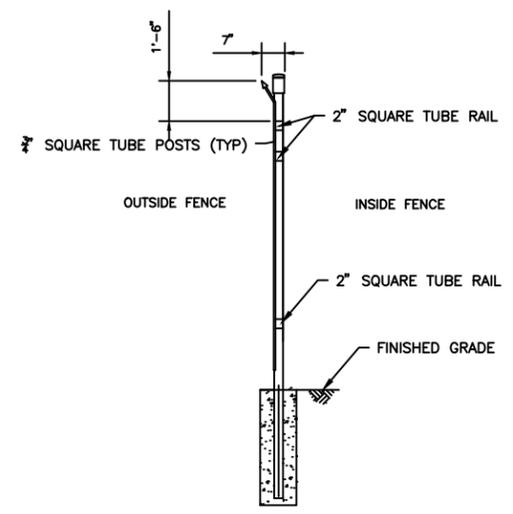
CITY OF DENISON, TEXAS
STANDARD CONSTRUCTION DETAILS
WROUGHT IRON FENCING

AUGUST 2025

SHEET NO.
36

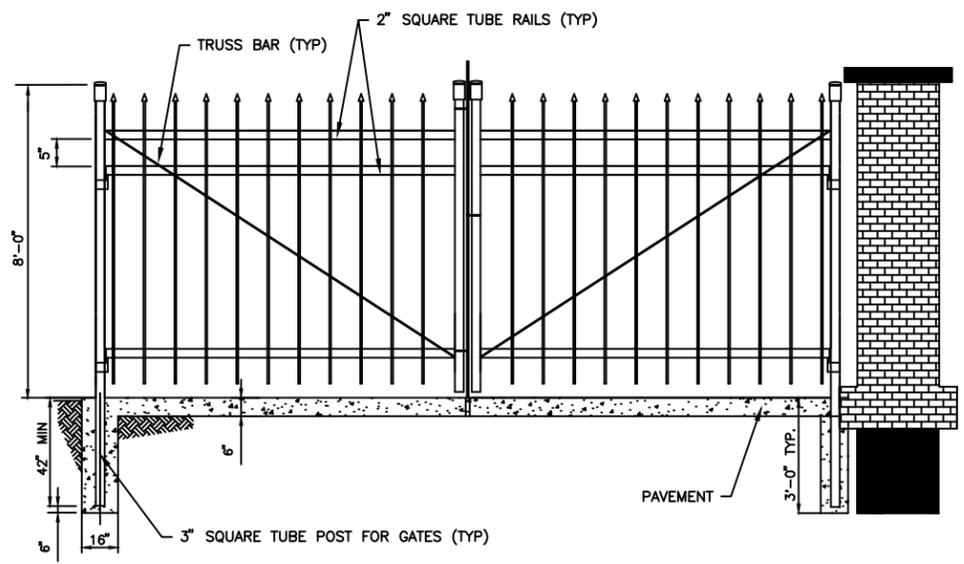


WROUGHT IRON FENCE WITH BRICK POSTS DETAIL
NOT TO SCALE

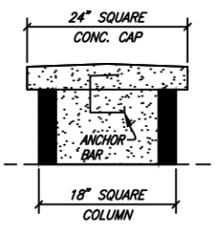


SIDE VIEW OF WROUGHT IRON FENCE
NOT TO SCALE

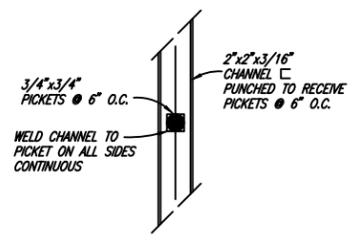
NOTES:
1. STEP DOWN FENCE IS REQUIRED TO FOLLOW GRADE WHILE MAINTAINING CONSTANT TOP OF FENCE ELEVATION, REFER TO C-001 'GRADING AND PAVING PLAN' FOR ADDITIONAL REQUIREMENTS AND GRADING DETAILS.



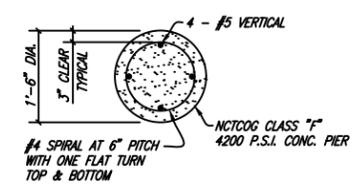
WROUGHT IRON SWING GATE WITH BRICK POSTS DETAIL
NOT TO SCALE



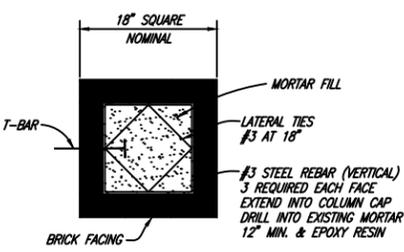
FENCE CONCRETE CAP
NO SCALE (CONCCAP)



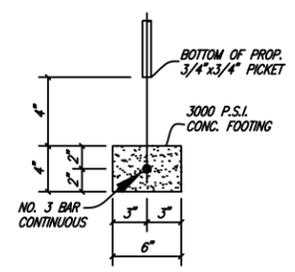
PLAN - FENCE RAIL AT PICKET
NO SCALE (FENCEPKT)



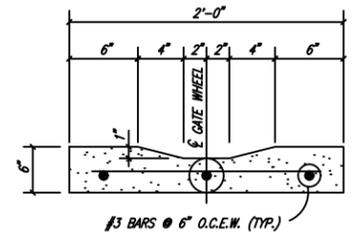
FENCE SECTION C-C
NO SCALE (PIER)



FENCE SECTION B-B
NO SCALE (FENCECB)



FENCE SECTION A-A
NO SCALE (FOOTING)



CONCRETE GATE WHEEL RUNWAY
NO SCALE (RUNWAY)



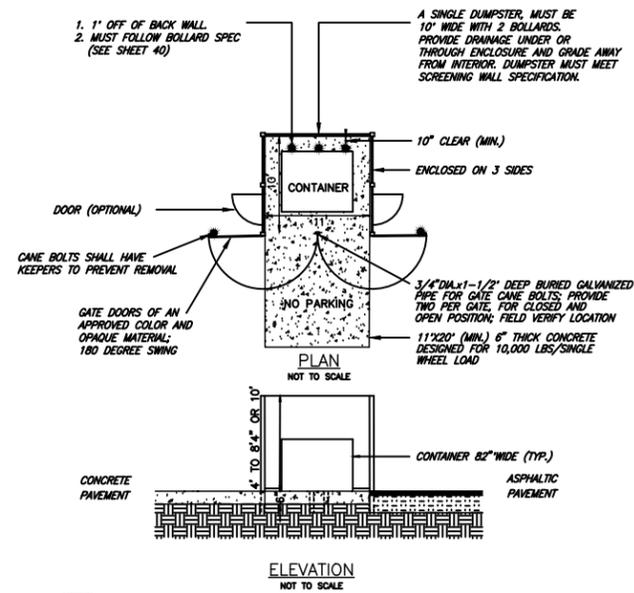
CITY OF DENISON, TEXAS
STANDARD CONSTRUCTION DETAILS
WROUGHT IRON FENCING

AUGUST 2025

SHEET NO.
37

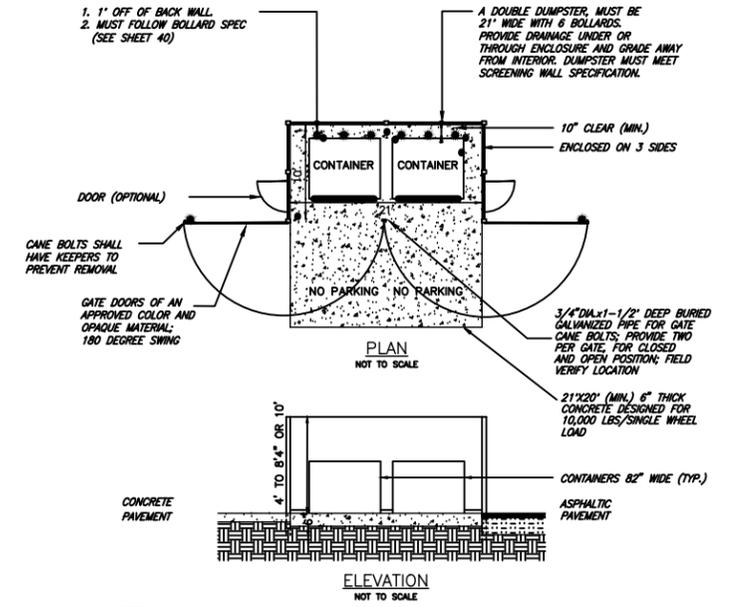
DUMPSTER ENCLOSURES

- GARBAGE CONTAINERS ARE REQUIRED TO BE SCREENED ON ALL SIDES, AND CONSTRUCTED SO AS TO BE ACCESSIBLE TO GARBAGE TRUCKS. APPLICANTS SUBMITTING SITE PLANS WHICH INCLUDE THE SITING OF A GARBAGE DUMPSTER AND CONSTRUCTION OF THE REQUIRED ENCLOSURE SHOULD BE FAMILIAR WITH THE REQUIREMENTS OF THE ZONING ORDINANCE AND THE MINIMUM STANDARDS ADOPTED BY THE CITY.
- THE MINIMUM HEIGHT OF THE SCREENING DEVICE FOR GARBAGE, TRASH OR REFUSE CONTAINERS IS 4 FEET AND THE MAXIMUM HEIGHT IS 8-4", EXCEPT FOR "ML", "MH" AND INDUSTRIAL "PD" DISTRICTS WHERE THE MAXIMUM HEIGHT OF A SCREENING DEVICE IS 10 FEET.
- WHEN SITING A DUMPSTER ENCLOSURE ON A PROPERTY, APPLICANTS SHOULD CONSIDER HOW EASILY A 32 FOOT LONG TRUCK CAN ENTER THE SITE, MANEUVER TO THE DUMPSTER, ACCESS IT (INCLUDING AT LEAST 50 FEET STRAIGHT FROM THE SCREENING GATES FOR BACKING FOR FRONT LOADING AND A 20' APPROACH AND DEPARTURE CLEARANCE FOR SIDE LOADING), AND EITHER EXIT THE SITE OR MANEUVER TO THE NEXT DUMPSTER. FIRELANES PROVIDE ADEQUATE MANEUVERING LANES, BUT NOTE THAT ENCLOSURES CAN NOT BE LOCATED WITHIN FIRELANES. LOCATIONS THAT REQUIRE A TRUCK TO PERFORM EXCESSIVE BACKING (> 80 FEET) ARE DISCOURAGED.
- SCREENING GATES ARE REQUIRED TO BE SOLID METAL AND SCREEN THE DUMPSTER FROM VIEW WHEN CLOSED. GATES SHOULD SWING OUT TO AN ANGLE GREATER THAN 180- AND CREATE AN OPENING AT LEAST 11 FEET WIDE FOR THE TRUCK TO ENTER THE ENCLOSURE. PINS SHOULD HOLD THE GATES OPEN WHILE THE DUMPSTER IS BEING ACCESSED. GATES SHOULD ALSO SWING CLEAR OF ALL FIRELANES.
- BUFFERING (LANDSCAPING) IS REQUIRED AROUND SCREENING WALLS WHEREVER THEY ABUT A NON-PAVED SURFACE OR A REQUIRED LANDSCAPE AREA. ACCEPTABLE BUFFERING INCLUDES A ROW OF HOLLIES (NELLIE R. STEVENS, BURFORD, ETC.) ALONG THE SCREENING WALLS.
- FOR MORE INFORMATION ABOUT THE MINIMUM STANDARDS FOR DUMPSTER ENCLOSURES, CONTACT THE ENGINEERING DEPARTMENT.
- PROPERTY OWNER MUST CONTACT THE ENGINEERING SERVICES TO DISCUSS PROPER SIZE AND QUANTITY OF DUMPSTERS/COMPACTORS NEEDED TO ENSURE ADEQUATE STORAGE AND MEET COLLECTION AND SERVICE NEEDS.



- NOTES:
- PROVIDE 50' STRAIGHT STATIC APPROACH (MIN.) AND 50' APPROACH AND DEPARTURE RADIUS (MIN.) FOR FRONT LOADING AND 20' APPROACH AND DEPARTURE CLEARANCE (MIN.) FOR SIDE LOADING.
 - AREA TO BE FREE OF OVERHEAD LINES AND WIRES.
 - APPLICANT TO PROVIDE A SIDE ELEVATION TO DEMONSTRATE COLOR, MATERIAL, AND DESIGN CONSISTENCY WITH THE PRINCIPAL BUILDING.
 - ENCLOSURE SHALL BE DESIGNED FOR WIND SPEED LISTED IN FBC (LATEST EDITION).

SINGLE CONTAINER DUMPSTER ENCLOSURE
NOT TO SCALE



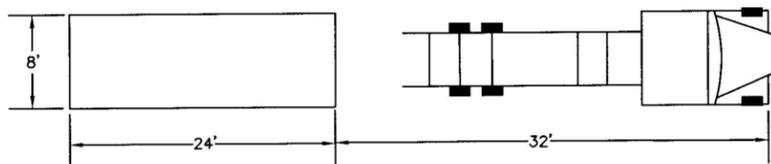
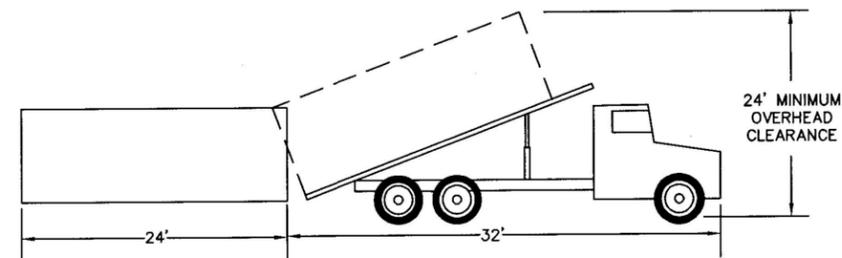
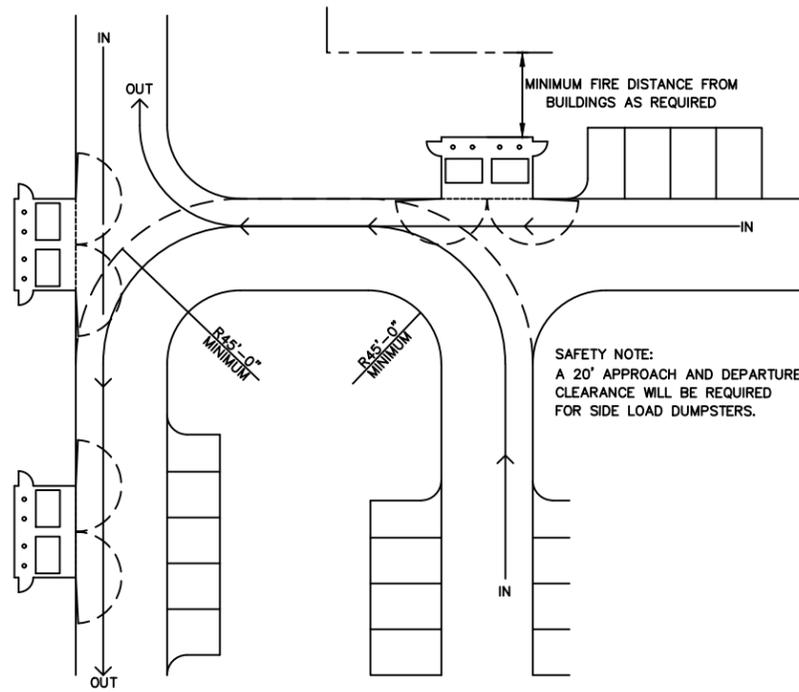
- NOTES:
- PROVIDE 50' STRAIGHT STATIC APPROACH (MIN.) AND 50' APPROACH AND DEPARTURE RADIUS (MIN.) FOR FRONT LOADING AND 20' APPROACH AND DEPARTURE CLEARANCE (MIN.) FOR SIDE LOADING.
 - AREA TO BE FREE OF OVERHEAD LINES AND WIRES.
 - APPLICANT TO PROVIDE A SIDE ELEVATION TO DEMONSTRATE COLOR, MATERIAL, AND DESIGN CONSISTENCY WITH THE PRINCIPAL BUILDING.
 - ENCLOSURE SHALL BE DESIGNED FOR WIND SPEED LISTED IN FBC (LATEST EDITION).

DOUBLE CONTAINER DUMPSTER ENCLOSURE
NOT TO SCALE

CHANGE ORDER NO. X	
FIELD CHANGE	
ADDENDUM	

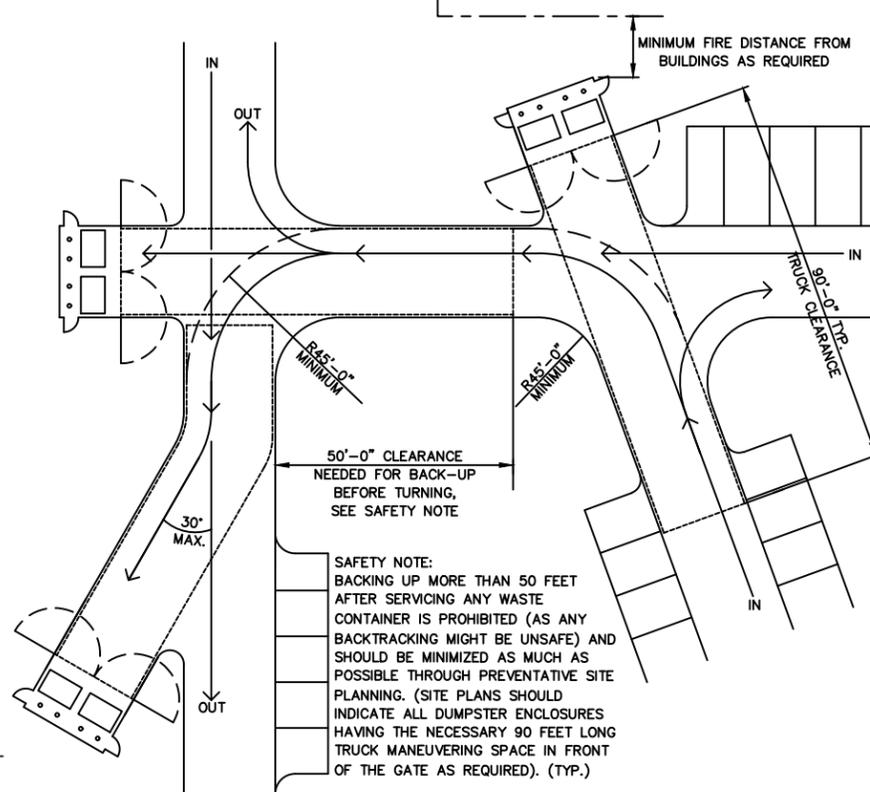
CITY OF DENISON, TEXAS STANDARD CONSTRUCTION DETAILS DUMPSTER DETAILS	AUGUST 2025	SHEET NO. 38
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SOLID WASTE VEHICLE OPERATION SCHEMATIC
TYPICAL ROUTE CONDITIONS AND TRUCK
MANEUVERING SPACE CLEARANCES
REQUIREMENTS (SIDE LOADING)
SCHEMATIC SITE PLAN



NOTE:
NEED MINIMUM CLEARANCE
12'W X 60'L X 24'H

SOLID WASTE VEHICLE OPERATION SCHEMATIC
TYPICAL ROUTE CONDITIONS AND TRUCK
MANEUVERING SPACE CLEARANCES
REQUIREMENTS (FRONT LOADING)
SCHEMATIC SITE PLAN

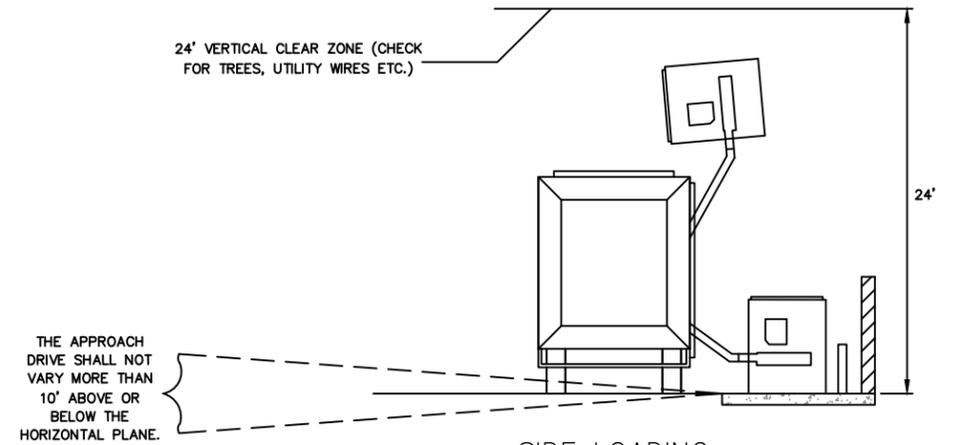


SOLID WASTE VEHICLE OPERATION SCHEMATIC TYPICAL ROUTE CONDITIONS AND TRUCK MANEUVERING SPACE CLEARANCES REQUIREMENTS

GENERAL NOTES:

- ALL CURBS ARE TO BE ALIGNED ON THE OUTSIDE OF ENCLOSURE WALLS. THE CURBS SHALL NOT INTERFERE WITH THE ROUTE OF THE SOLID WASTE COLLECTION VEHICLE.
- ALL SOLID WASTE COLLECTION ROUTES SHALL MEET ENGINEERING DESIGN CRITERIA (WIDTHS, TURNING RADII, ETC.). SITE SHALL BE DESIGNED TO PROVIDE SOLID WASTE COLLECTION VEHICLES WITH SAFE APPROACH TO DUMPSTER ENCLOSURES AND LIFT EACH CONTAINER WITHOUT GROUND LEVEL OR AERIAL OBSTRUCTIONS AS REQUIRED.
- ALL DUMPSTER DOORS MUST BE ALLOWED TO OPEN 180 DEGREES WITHOUT ANY OBSTRUCTIONS FROM BOLLARDS, CURBS, ETC.
- FOR THE SAFETY OF OTHERS, ROUTE LAYOUT AND OPERATION CLEARANCES SHALL BE SUCH THAT SOLID WASTE VEHICLES WILL NOT NEED TO BACK UP MORE THAN 50 FEET TO EXIT THE SITE AFTER SERVICING A DUMPSTER FOR FRONT LOADING. FOR SIDE LOADING, A 20' APPROACH AND DEPARTURE CLEARANCE WILL BE REQUIRED.
- NO AWNING OR BUILDING PROJECTIONS ARE TO ENCOACH THE SOLID WASTE COLLECTION VEHICLE'S OPERATION AREA AND/OR SPACE. MINIMUM OVERHEAD CLEARANCE OF 14 FEET IS REQUIRED IN DRIVE AND 24 FEET OVER AND ABOUT THE DUMPSTER ENCLOSURE FROM STEEL SAFETY BOLLARDS BACK 50 FEET FOR FRONT LOADING.
- ROUTES SHALL BE CLEAR OF ALL OBSTRUCTIONS CURBS, WALLS, OVERHEAD WIRES, AWNINGS, ROOF PROJECTIONS, ETC.) TO PREVENT DAMAGE FROM THE COLLECTION VEHICLE.
- IDEALLY, THE MOST DESIRED SITE PLANNING SHALL BE WHENEVER IS POSSIBLE TO SELECT A ROUTE FOR THE COLLECTION VEHICLE TO TRAVEL THE SITE WITHOUT BACKTRACKING. MULTIPLE FACILITIES SHOULD BE LOCATED IN SEQUENCE TO ALLOW CONSECUTIVE SERVICING ON ONE-WAY TRUCK ROUTE AS MUCH AS POSSIBLE (TYPICAL, UNLESS OTHERWISE APPROVED BY ENGINEERING SERVICES.)
- ALL DUMPSTER ENCLOSURES FOR FRONT LOADING MUST BE ORIENTED TO FACE 90 FEET LONG OF OPEN SPACE. THE ONLY EXCEPTION IS FOR DUMPSTER ENCLOSURES PLACED ALONG A STRAIGHT COLLECTION VEHICLE ROUTE WHERE THE ENCLOSURES NEED TO BE ANGLED WITH NOT MORE THAN 30 DEGREES DEVIATION FROM THE ROUTE DIRECTION LINE AND PLACED DEEP ENOUGH TO ALLOW THE TYPICAL 20 FEET BACK UP FOR THE VEHICLE TO RESUME IT'S ROUTE.
- DUMPSTER ENCLOSURES SHALL BE LOCATED AWAY FROM ENTRANCES AND EXITS SO SOLID WASTE COLLECTION VEHICLES DO NOT CREATE A SAFETY HAZARD BY BLOCKING IN-COMING OR OUT-GOING TRAFFIC.
- FOR GENERAL INFORMATION AND TYPICAL REQUIREMENTS ON DUMPSTER ENCLOSURE DESIGN LAYOUT SEE AVAILABLE CITY STANDARD CRITERIA DETAILS.

REAR VIEW

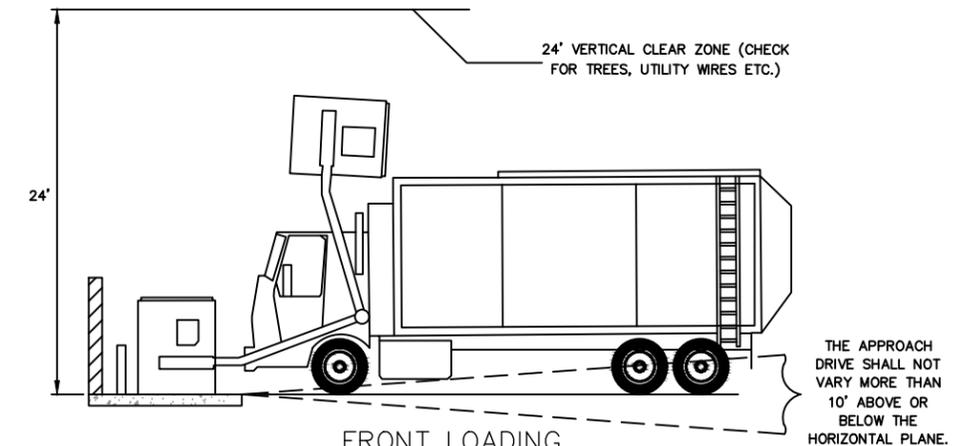


SIDE LOADING

NOTE:
IT SHALL BE THE RESPONSIBILITY OF THE OWNER TO OPEN GATES USED TO ENCLOSED CONTAINERS PRIOR TO COLLECTION.

PROPERTY OWNER/TENANT IS RESPONSIBLE FOR MAINTAINING DUMPSTER ENCLOSURES AND ADEQUATE ACCESS/ EGRESS. DUMPSTER PADS MAY NOT BE LOCATED IN RIGHT OF WAY OR FIRE LANES.

PLAN VIEW



FRONT LOADING

NOTE:
IT SHALL BE THE RESPONSIBILITY OF THE OWNER TO OPEN GATES USED TO ENCLOSED CONTAINERS PRIOR TO COLLECTION.

PROPERTY OWNER/TENANT IS RESPONSIBLE FOR MAINTAINING DUMPSTER ENCLOSURES AND ADEQUATE ACCESS/ EGRESS. DUMPSTER PADS MAY NOT BE LOCATED IN RIGHT OF WAY OR FIRE LANES.



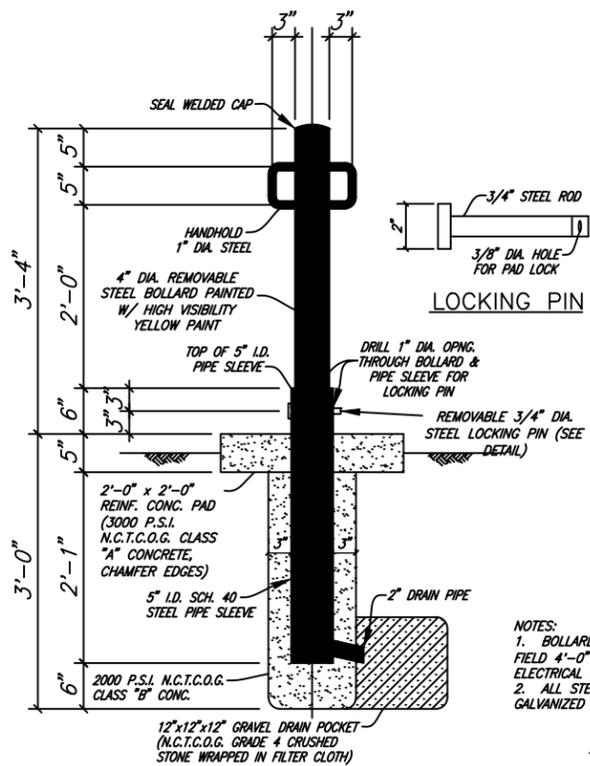
CITY OF DENISON, TEXAS

STANDARD CONSTRUCTION DETAILS
DUMPSTER DETAILS

AUGUST
2025

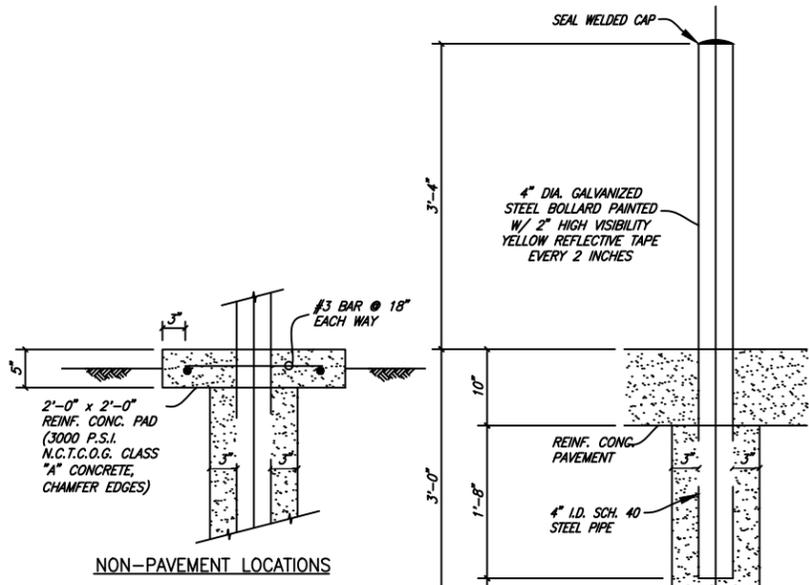
SHEET NO.

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REMOVABLE PIPE BOLLARD
NO SCALE (BOLLARD)

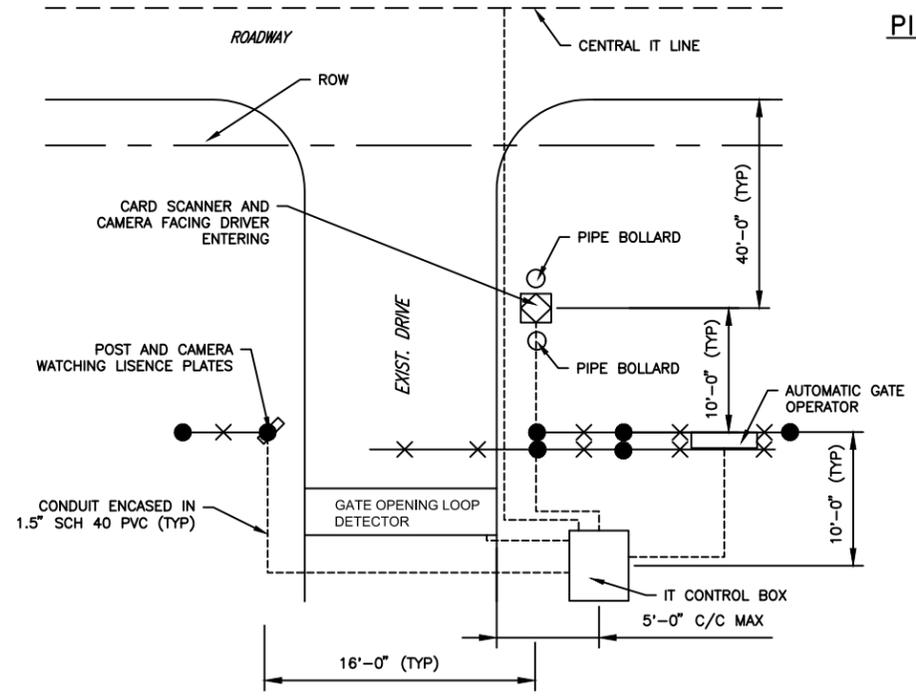
NOTES:
1. BOLLARDS SHALL BE LOCATED IN THE FIELD 4'-0" O.C. AS SHOWN IN THE ELECTRICAL SITE PLAN.
2. ALL STEEL SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION.



NON-PAVEMENT LOCATIONS

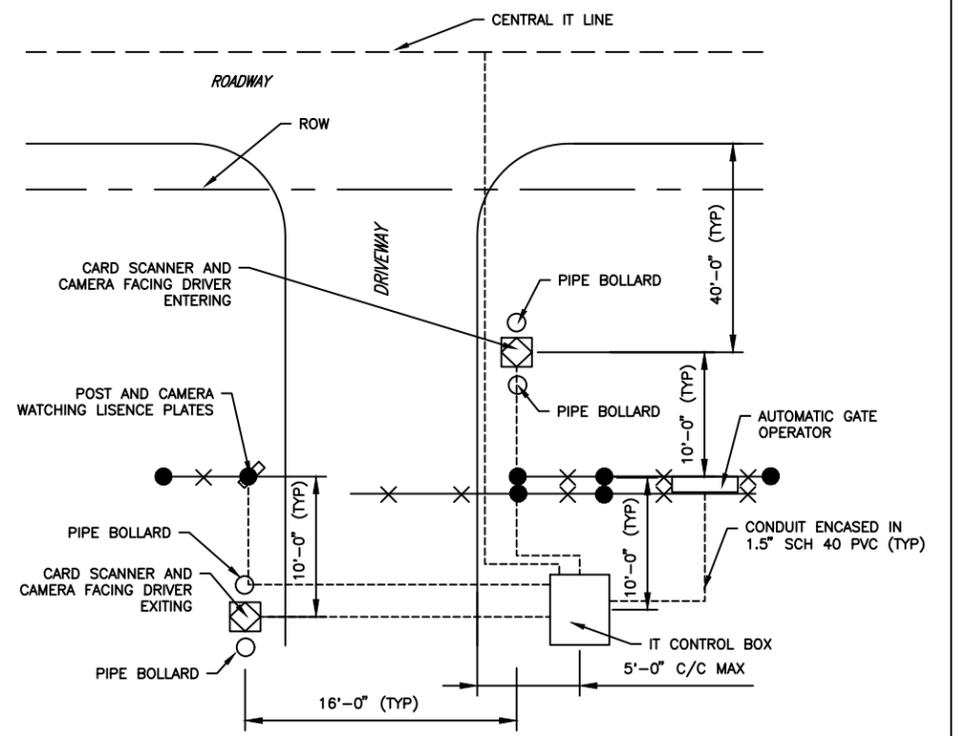
NOTE:
ALL STEEL SHALL BE HOT DIPPED GALVANIZED AFTER FABRICATION.

PIPE BOLLARD
NO SCALE (BOLLARDS)



NOTE:
A. CITY OF DENISON I.T. DEPARTMENT TO PROVIDE CAMERAS, CARDCANNERS & I.T. CONTROL BOX

I.T. SET UP FOR CANTILEVER FENCE GATE DETAIL (PUBLIC)
NOT TO SCALE

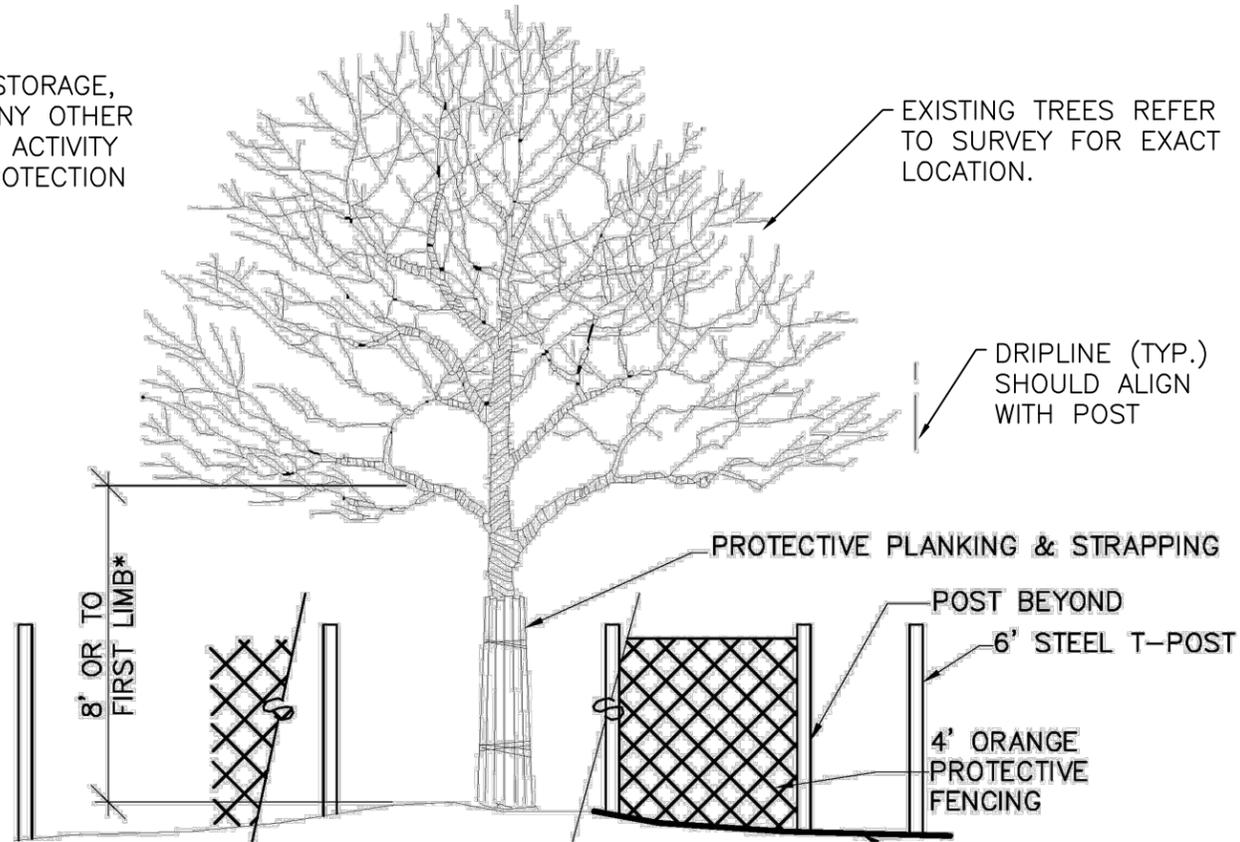


NOTE:
A. CITY OF DENISON I.T. DEPARTMENT TO PROVIDE CAMERAS, CARDCANNERS & I.T. CONTROL BOX

I.T. SET UP FOR CANTILEVER FENCE GATE DETAIL (PRIVATE)
NOT TO SCALE



NO GRADING, STORAGE,
PARKING OR ANY OTHER
CONSTRUCTION ACTIVITY
WITHIN THE PROTECTION
FENCE



TREE PROTECTION DETAIL
NOT TO SCALE

NOTE:

- A. ANY TREE PRUNING MUST HAVE PRIOR APPROVAL BY LANDSCAPE ARCHITECT. REFER TO PLANTING PLAN FOR PLANT DEMO.
- B. PRIOR TO GRADING, BRUSH REMOVAL, OR CONSTRUCTION, THE DEVELOPER SHALL CLEARLY TAG OR MARK ALL TREES TO BE PRESERVED.
- C. THE DEVELOPER SHALL ERECT PROTECTIVE FENCING AROUND EACH TREE OR GROUP OF TREES TO PREVENT THE PLACEMENT OF DEBRIS OR FILL WITHIN THE ROOT PROTECTION ZONE. THE FENCE SHALL BE INSTALLED PRIOR TO THE RELEASE OF ANY PERMIT. IF THE PROTECTION FENCE IS FOUND REMOVED, DOWN, OR ALTERED AT ANY TIME DURING CONSTRUCTION PRIOR TO FINAL INSPECTION OR LANDSCAPE INSTALLATION, A STOP WORK ORDER MAY BE ISSUED.
- D. DURING THE CONSTRUCTION PHASE OF DEVELOPMENT, THE DEVELOPER SHALL ESTABLISH A CONSTRUCTION ENTRANCE THAT AVOIDS PROTECTED TREES AND PROHIBIT CLEANING, PARKING, OR STORAGE OF EQUIPMENT OR MATERIALS UNDER THE CANOPY OF ANY TREE OR GROUP OF TREES BEING PRESERVED. THE DEVELOPER SHALL NOT ALLOW THE DISPOSAL OF ANY WASTE MATERIAL SUCH AS, BUT NOT LIMITED TO, PAINT, OIL SOLVENTS, ASPHALT, CONCRETE, MORTAR, ETC. IN THE CANOPY AREA.
- E. NO ATTACHMENTS OR WIRES OF ANY KIND, OTHER THAN THOSE OF A PROTECTIVE NATURE SHALL BE ATTACHED TO ANY TREE.
- F. NO FILL OR EXCAVATION MAY OCCUR WITHIN THE DRIP LINE OF A TREE TO BE PRESERVED UNLESS THERE IS A SPECIFIC APPROVED PLAN FOR USE OF TREE WELLS OR RETAINING WALLS. MAJOR CHANGES OF GRADE, SIX (6) INCHES OR GREATER, WILL REQUIRE ADDITIONAL MEASURES TO MAINTAIN PROPER OXYGEN AND WATER EXCHANGE WITH THE ROOTS.



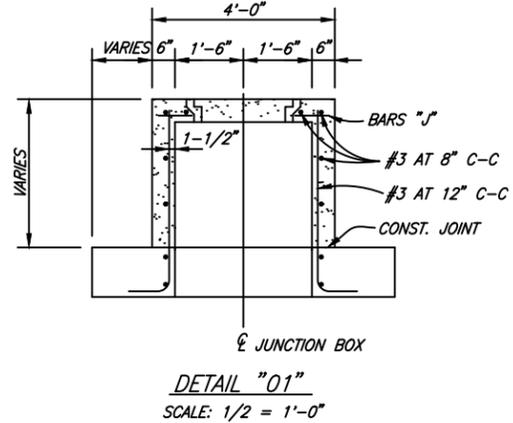
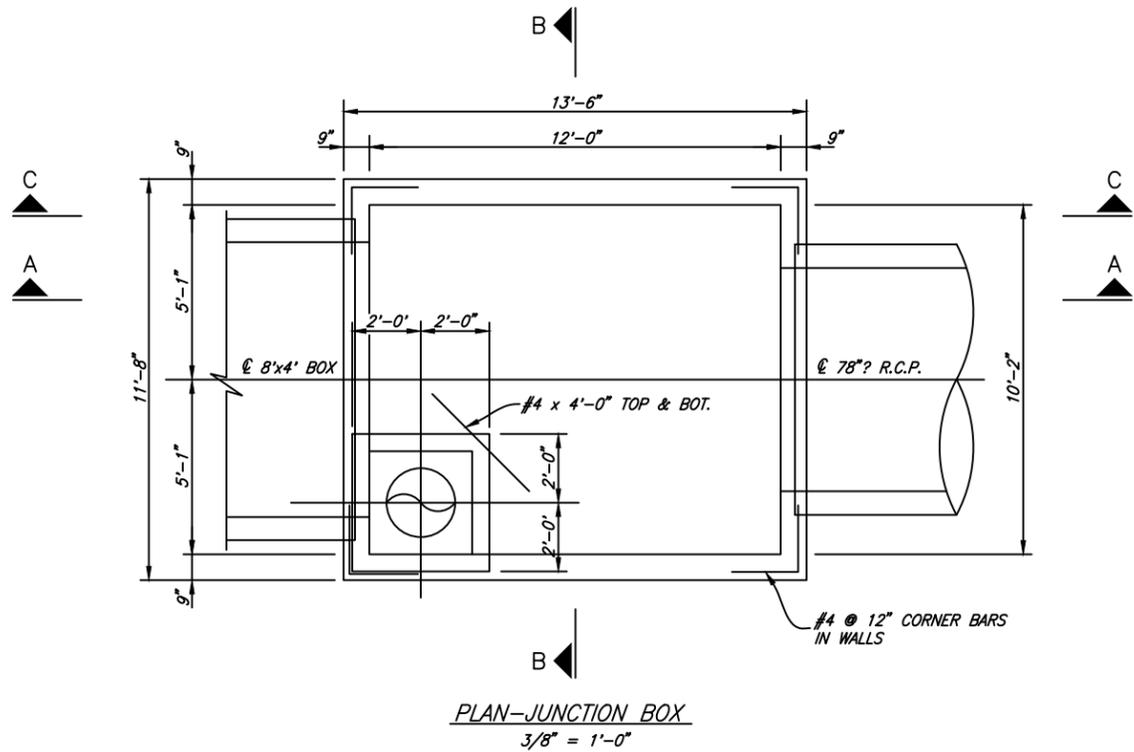
CITY OF DENISON, TEXAS

STANDARD CONSTRUCTION DETAILS
TREE PROTECTION PLAN

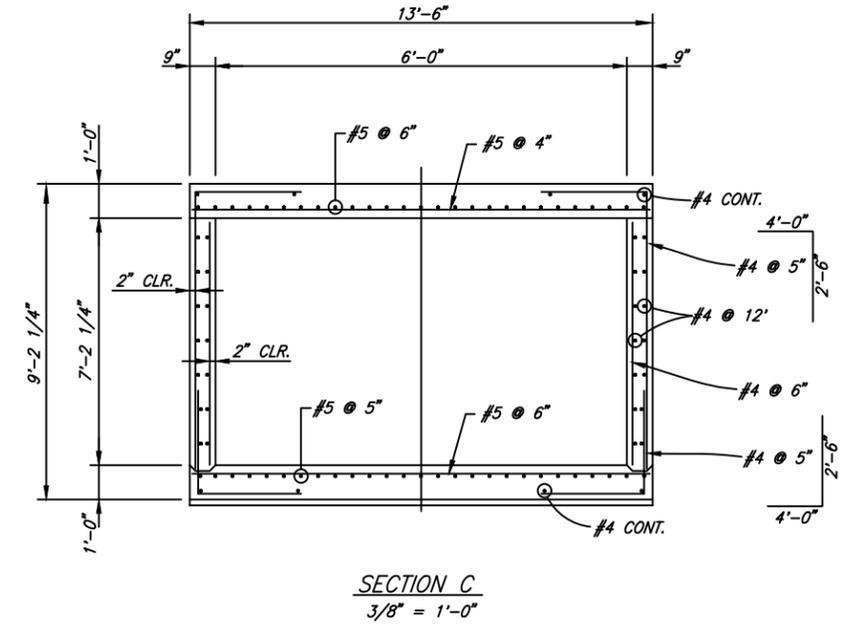
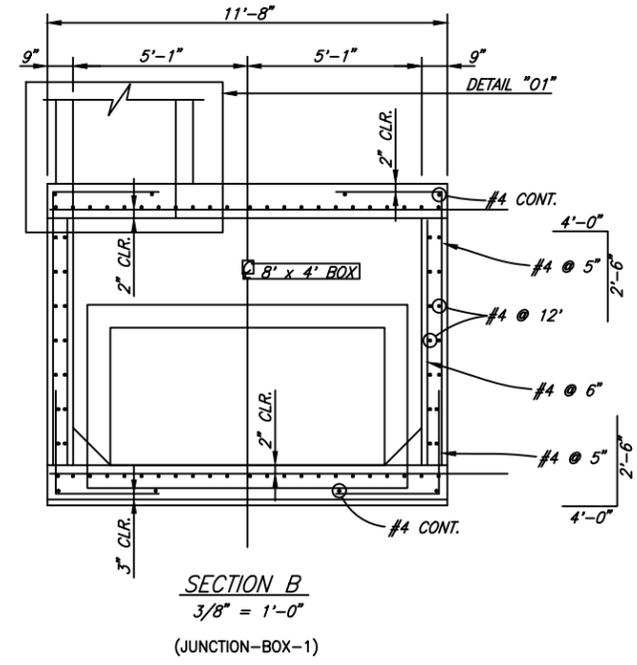
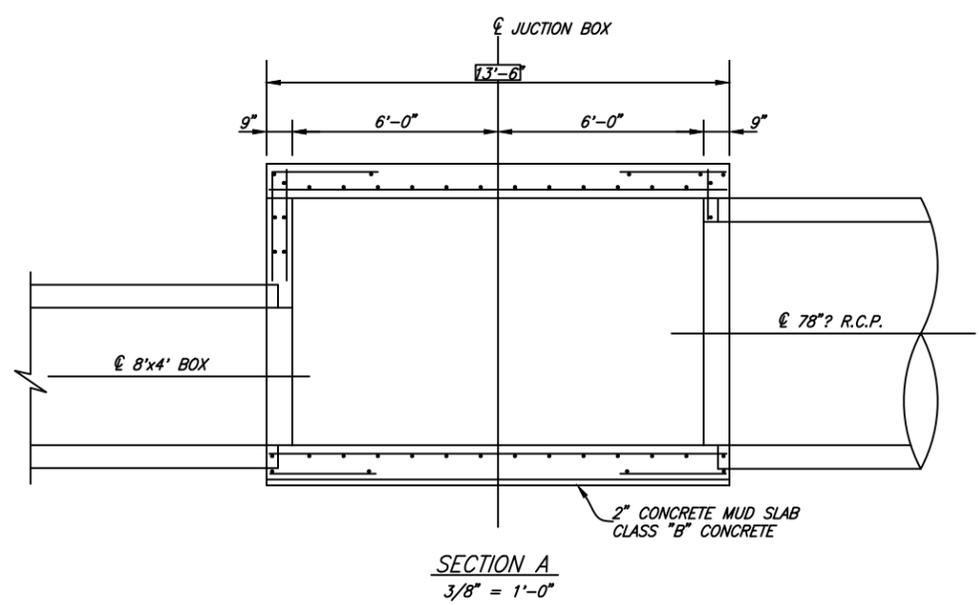
**AUGUST
2025**

SHEET NO.

41



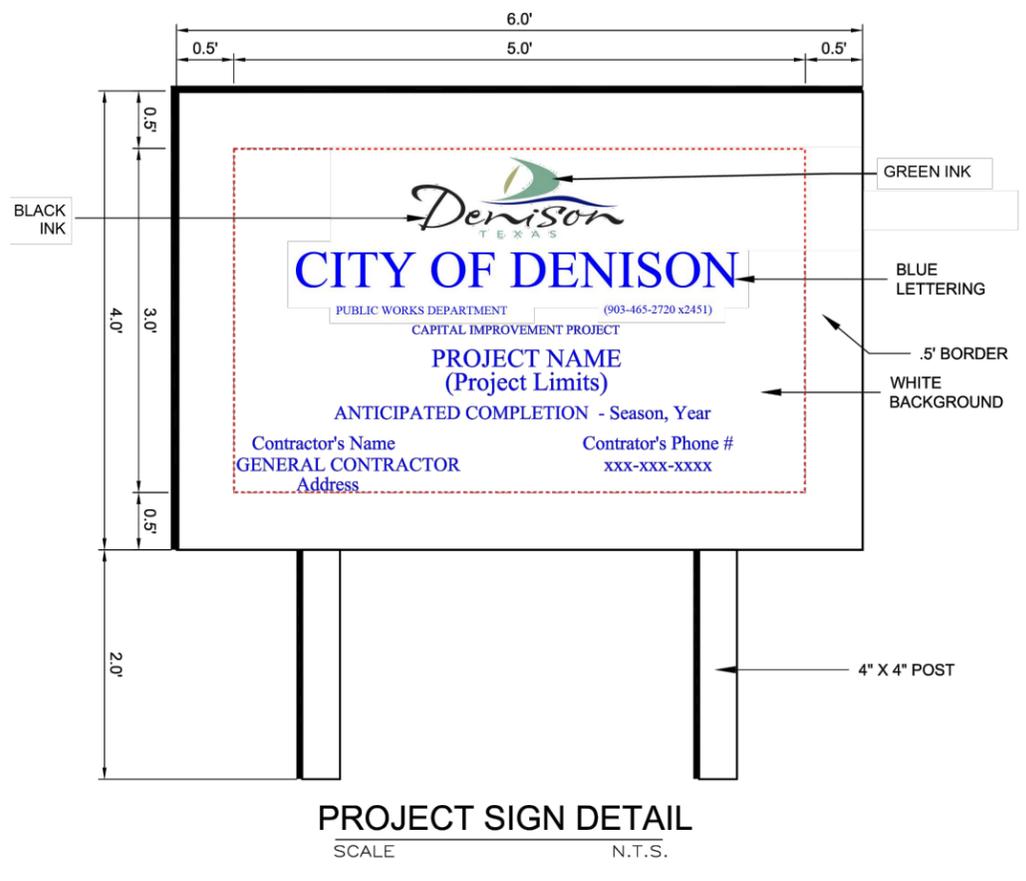
- NOTE:
1. CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF NCTCOG'S STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.
 2. CONCRETE SHALL BE CLASS "C" -3,600 P.S.I.
 3. REINFORCING STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASTM A615, GRADE 60.
 4. FIELD CUT REINFORCING STEEL TO CLEAR PRECAST BOX AND R.C.P. BY 2".



CITY OF DENISON, TEXAS
STANDARD CONSTRUCTION DETAILS
JUNCTION BOX

AUGUST 2025

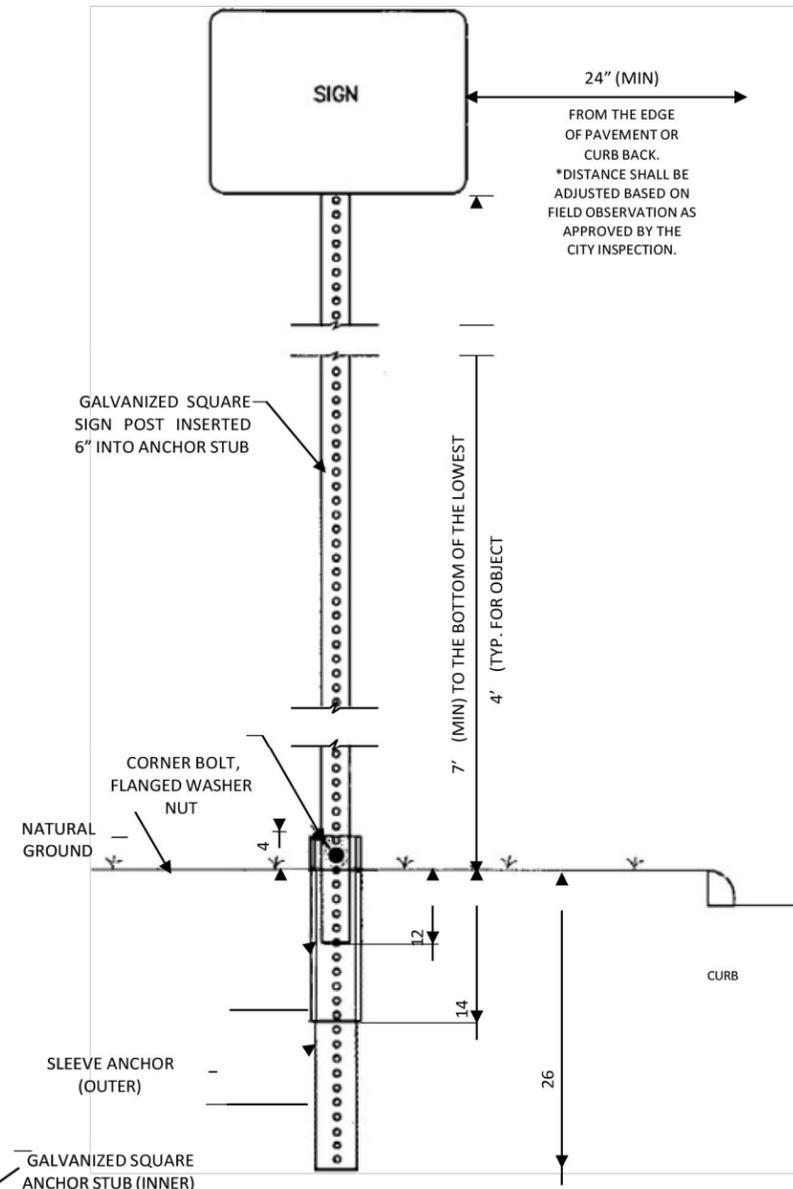
SHEET NO.
42



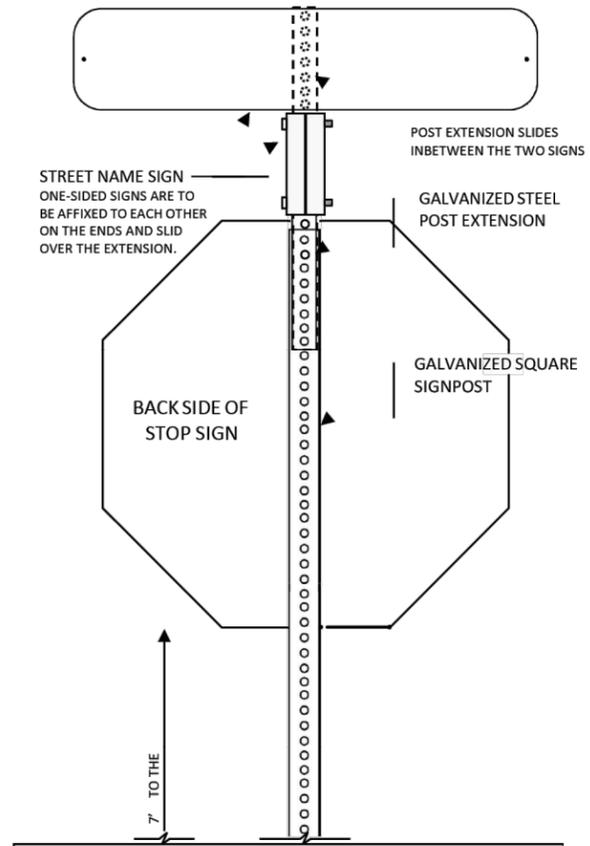
Color Palette

	PMS 662 C/100 M/88 Y/0 K/20 R/0 G/29 B/119		PMS 643 C/21 M/3 Y/1 K/2 R/195 G/211 B/223		PMS 556 C/51 M/5 Y/37 K/15 R/112 G/164 B/137
	PMS 5767 C/30 M/12 Y/66 K/36 R/137 G/143 B/75		PMS 5777 C/22 M/7 Y/51 K/22 R/163 G/168 B/107		PMS Black C/0 M/0 Y/0 K/100 R/30 G/30 B/30

TYPICAL GROUND SIGN INSTALLATION PERFORATED SQUARE METAL TUBING

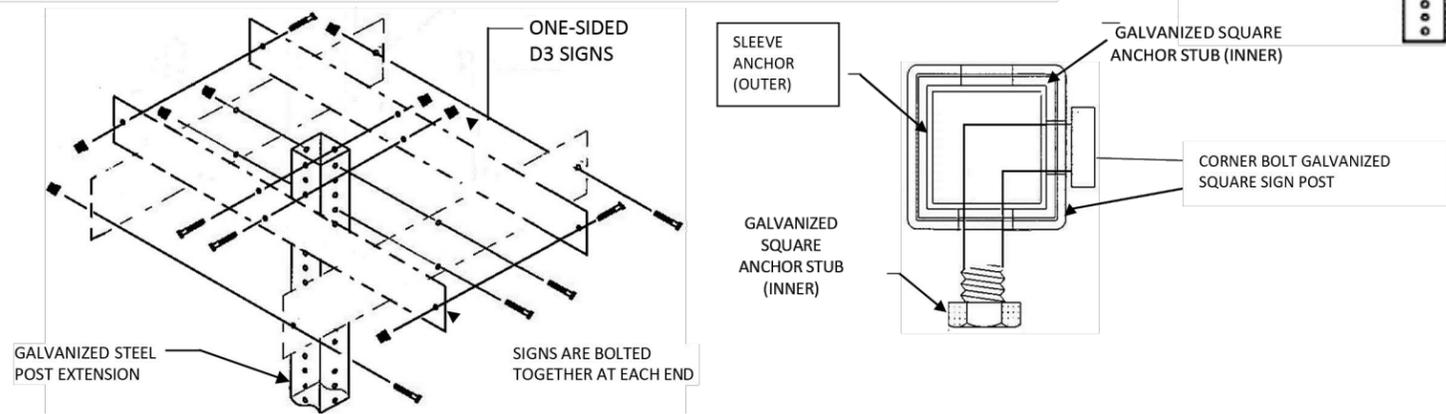


TYPICAL STOP SIGN AND STREET NAME SIGN INSTALLATION



SLEEVE DETAILS

GALVANIZED SQUARE SIGN POST EXTENSION (PERFORATED)	1-1/2" x 1-1/2" (14 GAUGE)
GALVANIZED SQUARE SIGN POST (PERFORATED)	1-3/4" x 1-3/4" (14 GAUGE)
GALVANIZED SQUARE SIGN POST (PERFORATED) (INNER)	2" x 2" x 30" (14 GAUGE)
GALVANIZED SQUARE SIGN POST (PERFORATED) (OUTER)	2 1/4" x 2 1/4" x 18" (14 GAUGE)



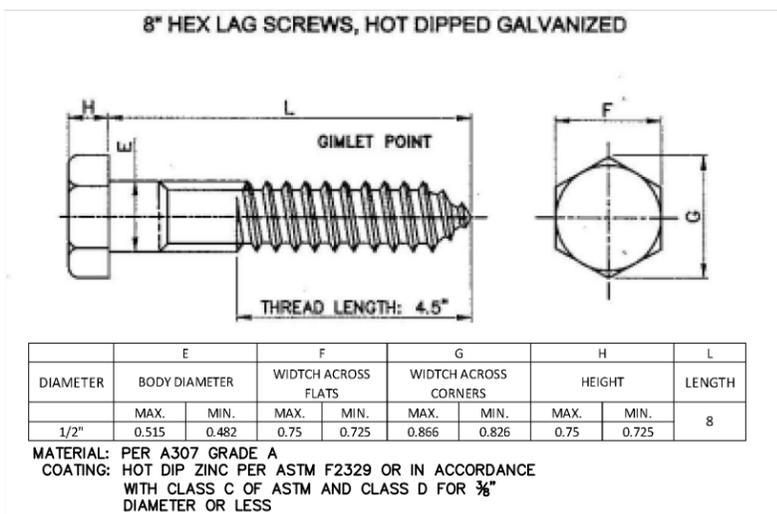
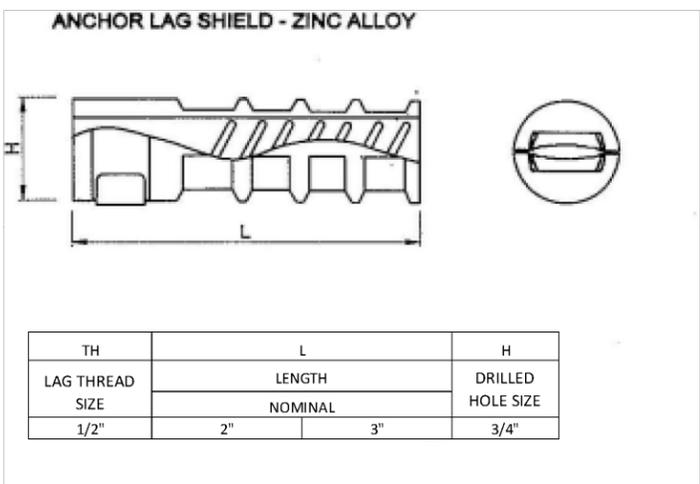
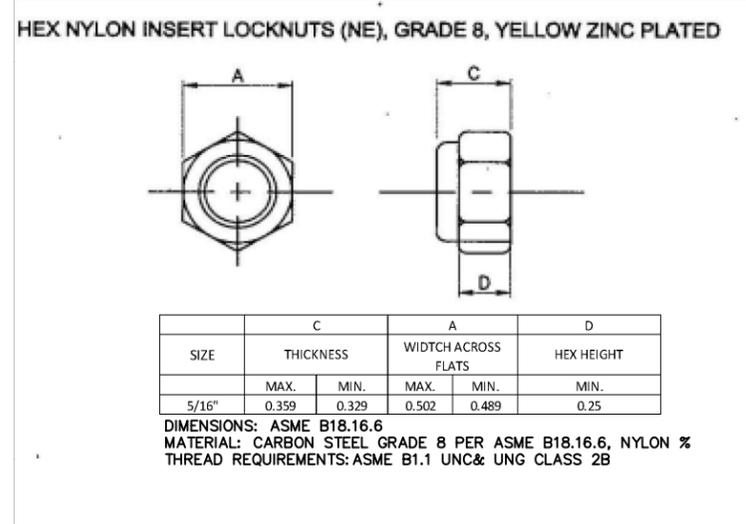
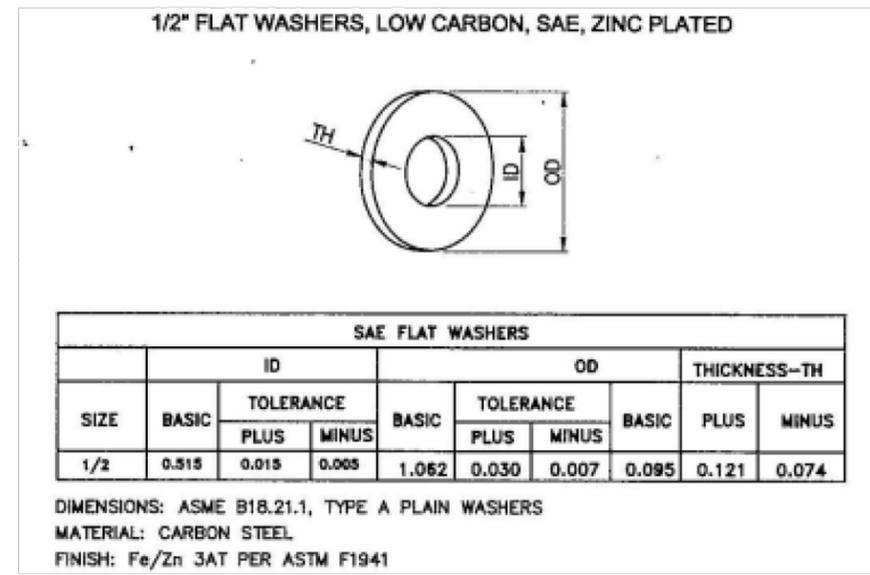
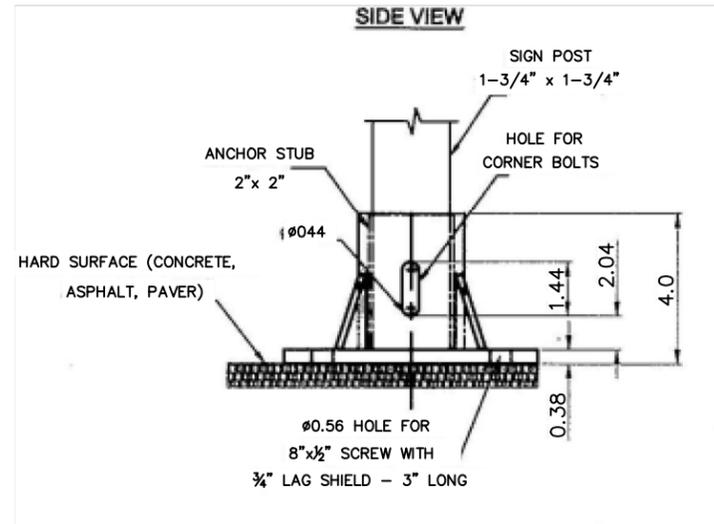
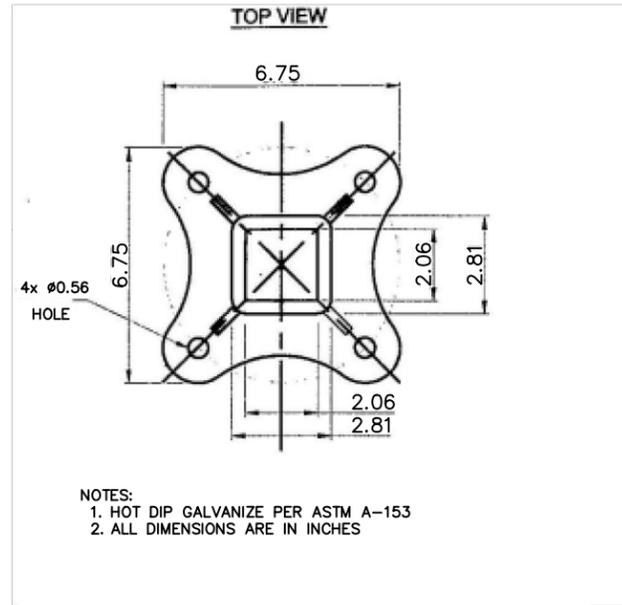
CITY OF DENISON, TEXAS

STANDARD CONSTRUCTION DETAILS
GROUND MOUNTED STREET NAME BLADE & PROJECT SIGN DETAILS

AUGUST 2025

SHEET NO. **43**

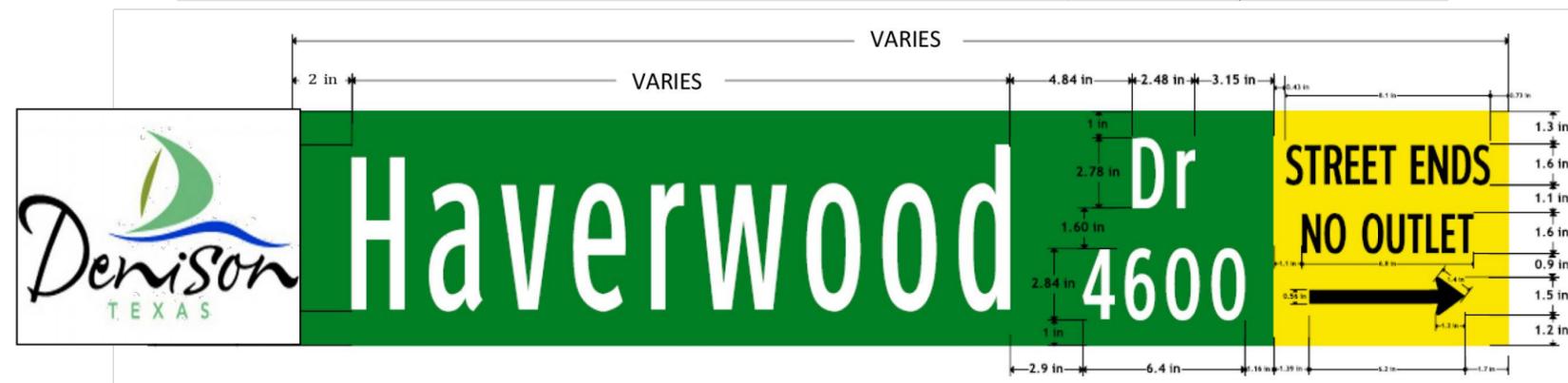
TYPICAL HARD SURFACE INSTALLATION GALVANIZED SIGN BASE
 (USED ONLY WHEN UNDERGROUND CONDITIONS PROHIBIT USE OF STANDARD ANCHOR SLEEVE
 – APPROVAL FROM PUBLIC WORKS DIRECTOR OR DESIGNEE NEEDED PRIOR TO USE)



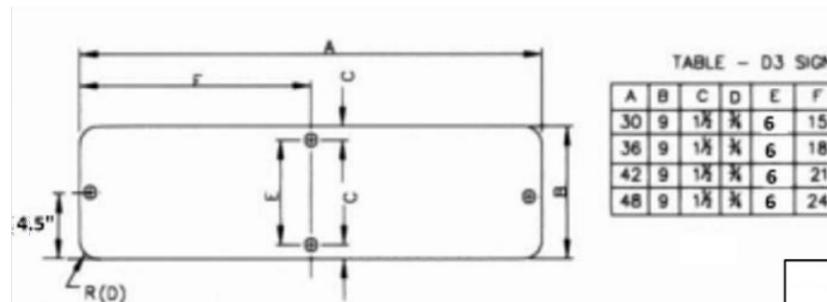
D3-1 STREET NAME SIGN EXAMPLES
(DIMENSIONS SHOWN ARE TYPICAL)

D3-1 STREET NAME SIGN

HEIGHT	9" SIGN BLANK (9.30" DESIGNED WITH FULL BLEED)
LENGTH	30", 36" 42" OR 48"
THICKNESS	0.080"
SUBSTRATE	ALUMINUM ALLOY, 5052-H38 (ASTM B-209)
SIGN FACE MATERIAL	GREEN FILM OVER ASTM-4956 TYPE XI FULL CUBE PRISMATIC GRADE RETROREFLECTIVE SHEETING OR EQUIVALENT
SIGN FONT	CLEARVIEW HWY 3W
COLOR	LETTERS - WHITE REFLECTIVE BACKGROUND - GREEN FILM



D3-1 STREET NAME SIGN DIMENSIONS



NOTES:

1. TEXT SHALL START 2" FROM THE EDGE OF THE LOGO
2. STREETNAME SHALL BE CENTERED AND 6" FONT SIZE
3. 1" MIN. SPACE BETWEEN STREET NAME LETTERS
4. SUFFIX AND BLOCK NUMBER MUST BE LOCATED 2" FROM STREET NAME AND 2" FROM THE RIGHT EDGE, SUFFIX AT TOP AND BLOCK NUMBER AT BOTTOM, 3" SPACE BETWEEN THEM.
5. LETTERS AND/OR NUMBERS SPACES IN THE SUFFIX AND BLOCK NUMBER MUST BE 1.5" MIN
6. BLOCK NUMBER MUST HAVE 1" SPACE FROM THE BLADE EDGE
7. ALL DIMENSIONS ARE IN INCHES.
8. SIGN LENGTH WILL BE DICTATED BY THE NUMBER OF LETTERS IN THE NAME
9. ALL STREETNAME SIGNS SHALL HAVE 1/4" DIAMETER HOLES DRILLED ON EACH END AND AFFIXED TOGETHER.

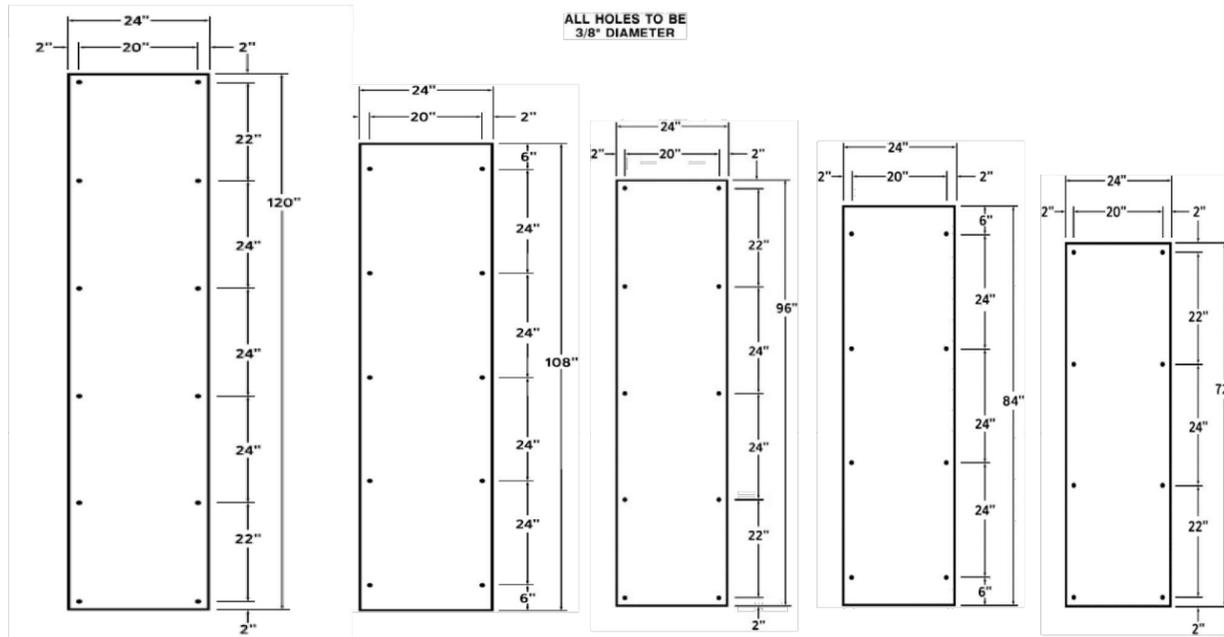


CITY OF DENISON, TEXAS
STANDARD CONSTRUCTION DETAILS
GROUND MOUNTED STREET NAME BLADE (D3-1) DETAILS

**AUGUST
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SHEET NO.
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D3-1 OVERHEAD SIGN PANEL DIMENSIONS

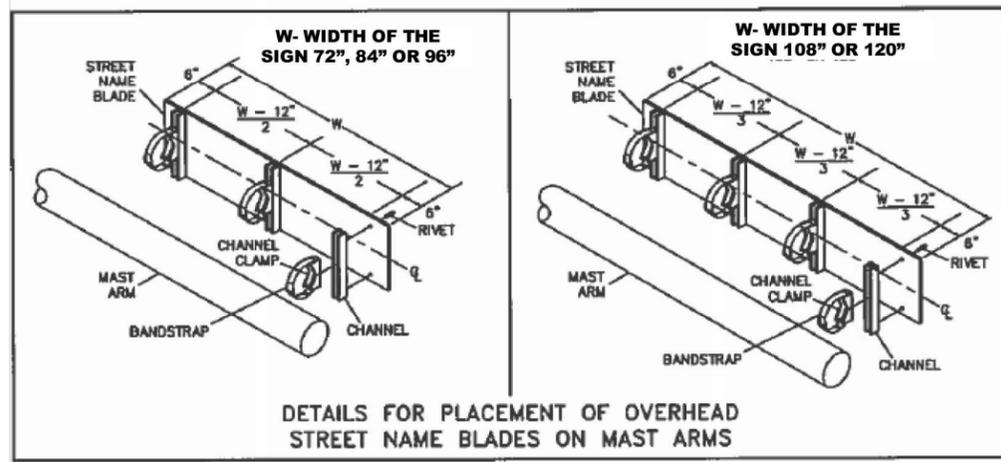


HEIGHT	24"
LENGTH	72", 84", 96", 108", or 120"
THICKNESS	0.100"
SUBSTRATE	ALUMINUM ALLOY, 5052-H38 (ASTM B-209)
SIGN FACE MATERIAL	GREEN FILM OVER ASTM-4956 TYPE XI FULL CUBE PRISMATIC GRADE RETROREFLECTIVE SHEETING OR EQUIVALENT
SIGN FONT	CLEARVIEW HWY 5W
COLOR	LETTERS - WHITE REFLECTIVE BACKGROUND - GREEN FILM

D3-1 OVERHEAD STREET NAME SIGN
EXAMPLES
(DIMENSIONS SHOWN ARE TYPICAL)



DETAILS FOR MOUNTING TRAFFIC SIGNS
ON SIGNAL MAST ARMS AND POLES



NOTE: SIGN LENGTH WILL BE DICTATED BY THE NUMBER OF LETTERS IN THE NAME.
THE HEIGHT SHALL BE 24"



CITY OF DENISON, TEXAS

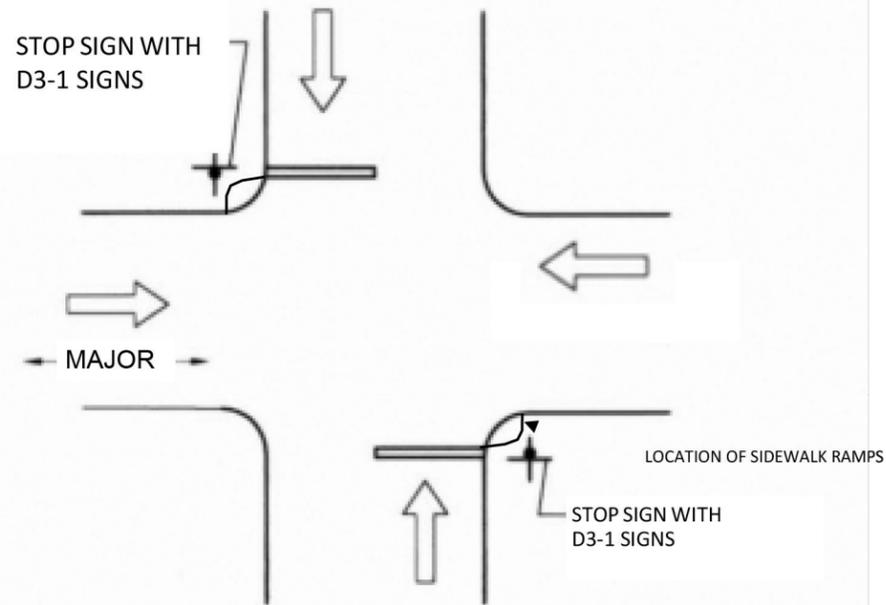
STANDARD CONSTRUCTION DETAILS
OVERHEAD STREET NAME BLADE (D3-1) DETAILS

AUGUST
2025

SHEET NO.

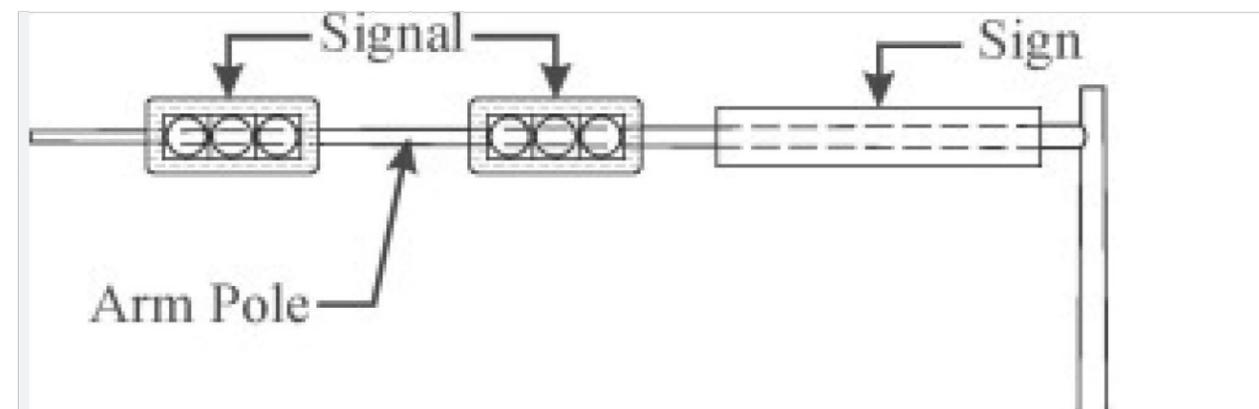
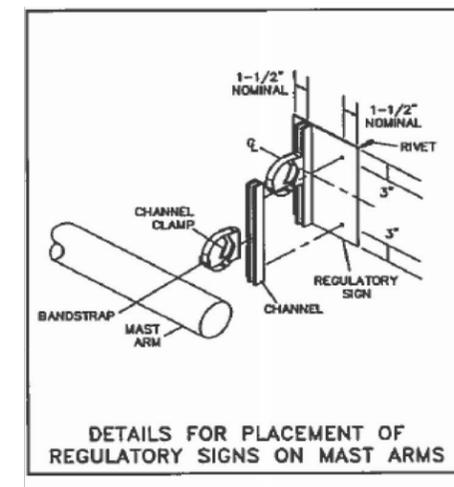
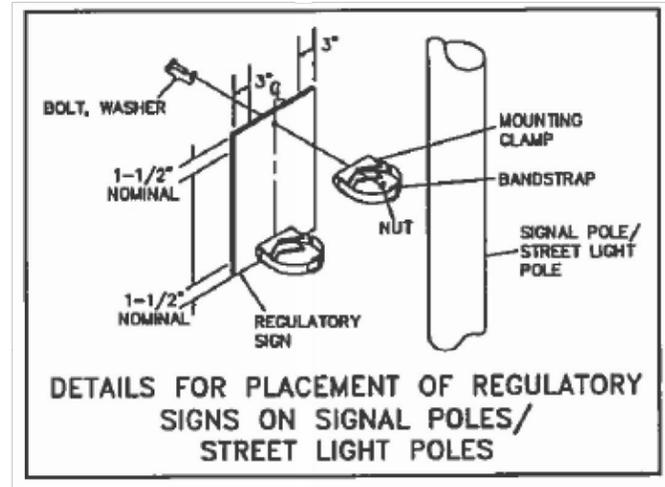
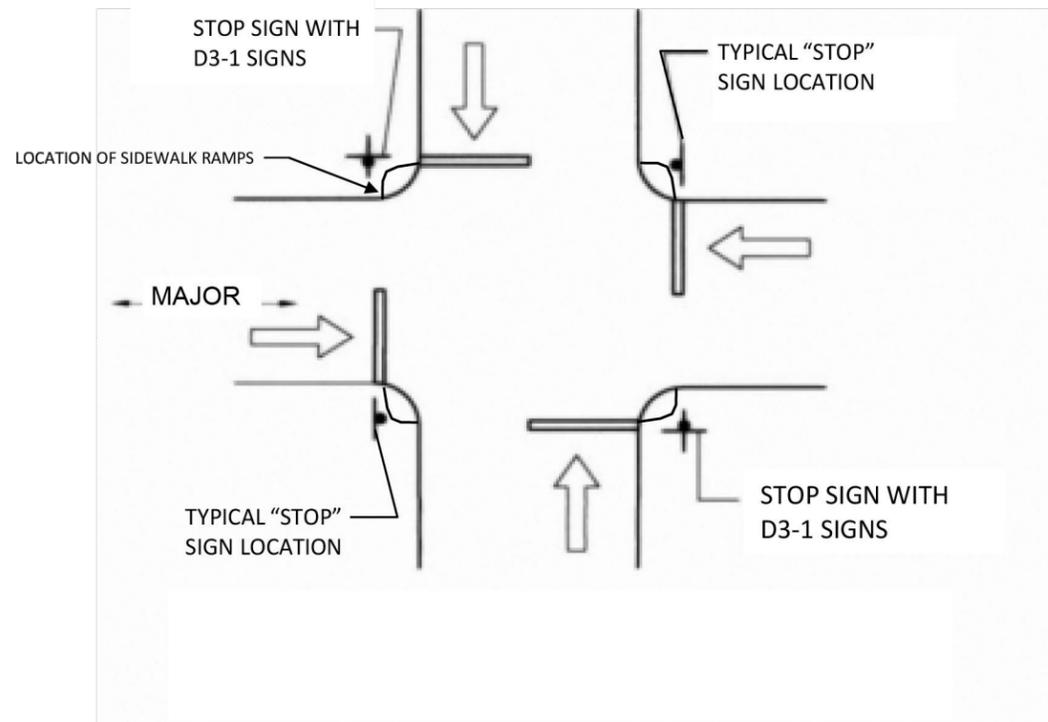
46

TWO-WAY STOP CONTROL INTERSECTION



**STOP SIGNS ARE TO BE INSTALLED IN ADVANCE OF CROSSWALK AND RAMP

ALL-WAY STOP CONTROL INTERSECTION



TYPICAL SIGN PLACEMENTS ON SIGNAL MAST ARMS



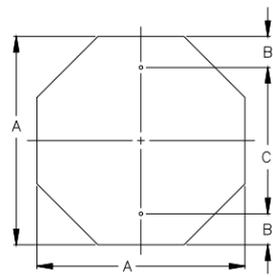
CITY OF DENISON, TEXAS

STANDARD CONSTRUCTION DETAILS
TYPICAL STREET NAME SIGN PLACEMENTS

**AUGUST
2025**

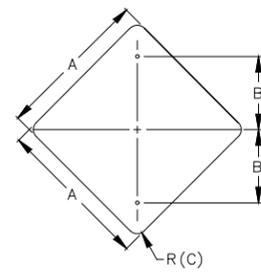
SHEET NO.

47



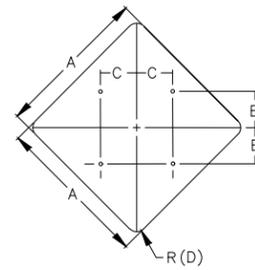
OCTAGONAL

A	B	C	T
24	3	18	0.080
30	3	24	0.080
36	3	30	0.100



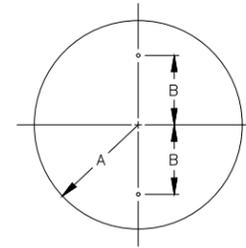
DIAMOND (A)

A	B	C	T
18	9	1	0.080
24	12	1	0.080
30	15	1	0.080
36	18	1	0.100



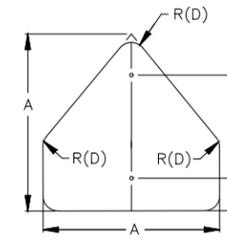
DIAMOND (B)

A	B	C	D	T
48	15	15	3	0.100



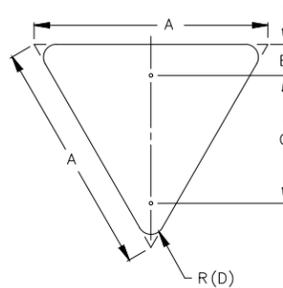
CIRCLE

A	B	T
18	15	0.100



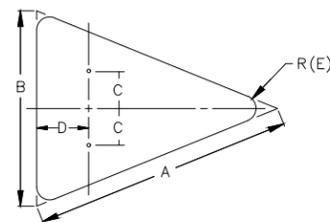
PENTAGON (SCHOOL)

A	B	C	D	T
36	24	32	1	0.100



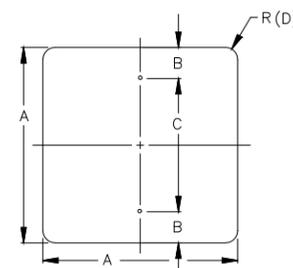
EQUILATERAL TRIANGLE

A	B	C	D	T
36	2	24	2	0.100



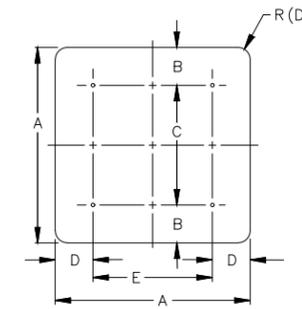
ISOSCELES TRIANGLE

A	B	C	D	E	T
40	30	1	2	7	0.100
48	36	9	15	1	0.100



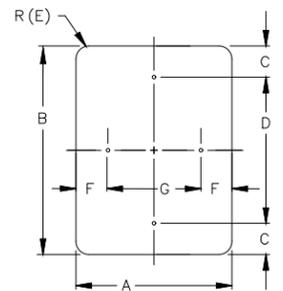
SQUARE (A)

A	B	C	D	T
18	1	25	1	0.080
24	3	18	1	0.080
30	3	24	7	0.080



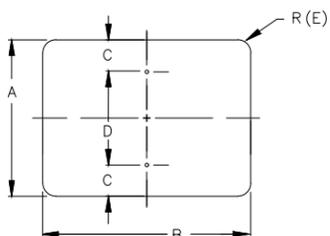
SQUARE (B)

A	B	C	D	E	F	T
48	6	36	9	30	3	0.100



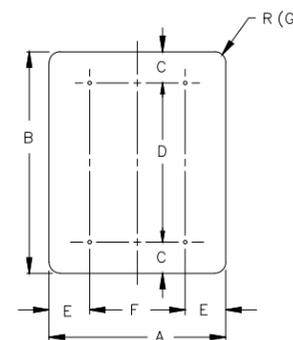
VERTICAL / HORIZONTAL RECTANGLE

A	B	C	D	E	F	G	T
12	18	1	25	1	2	2	0.080
12	36	3	30	1	2	2	0.080
18	24	1	21	1	2	25	0.080
24	30	3	24	1	23	18	0.080
24	36	3	30	1	23	18	0.080
24	48	6	38	7	83	18	0.080
30	36	3	30	7	83	24	0.080



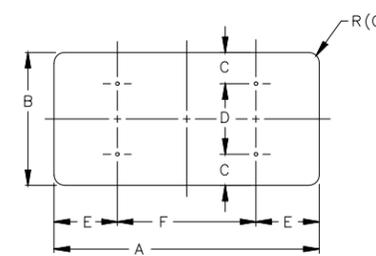
HORIZONTAL RECTANGLE

A	B	C	D	E	T
6	12	1	4	1	0.080
6	18	1	4	1	0.080
20	36	1	27	1	0.080



VERTICAL RECTANGLE

A	B	C	D	E	F	G	T
57	3	14	62	3	14	24	0.100
48	60	6	48	9	30	3	0.100



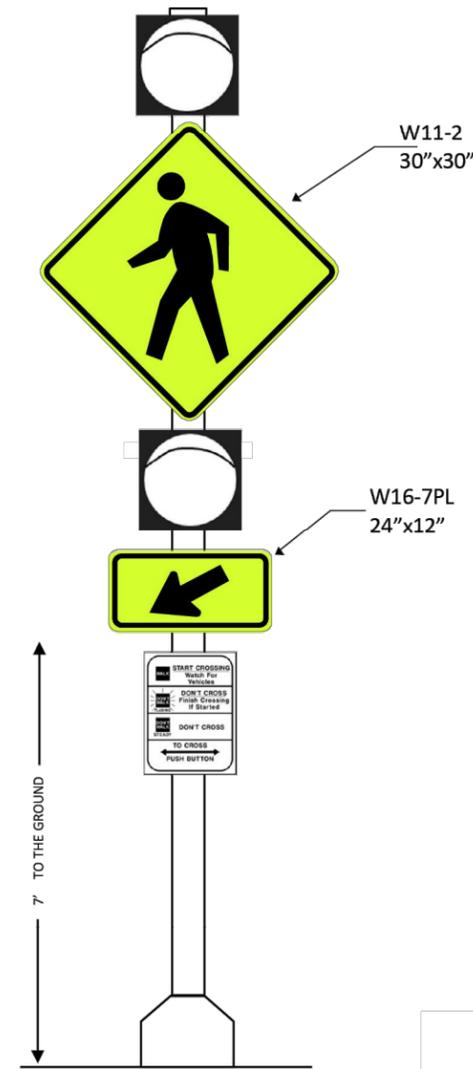
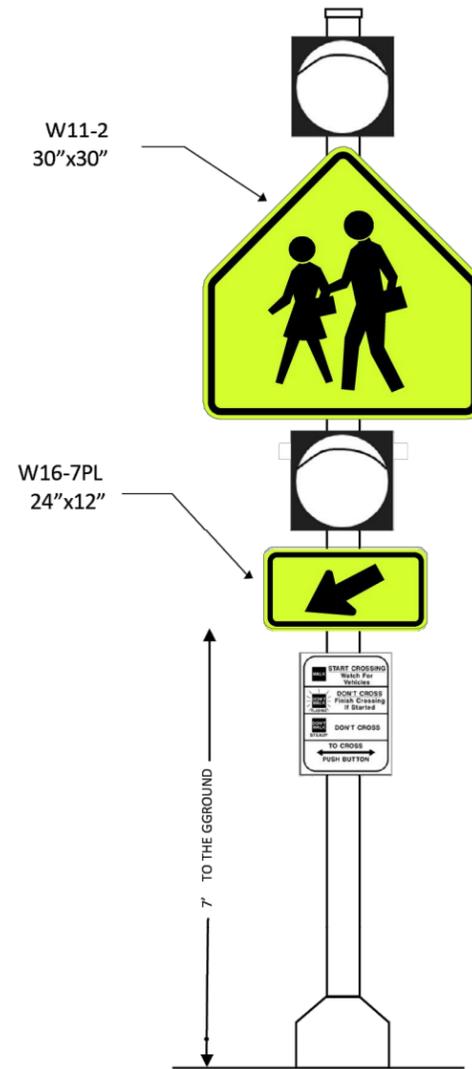
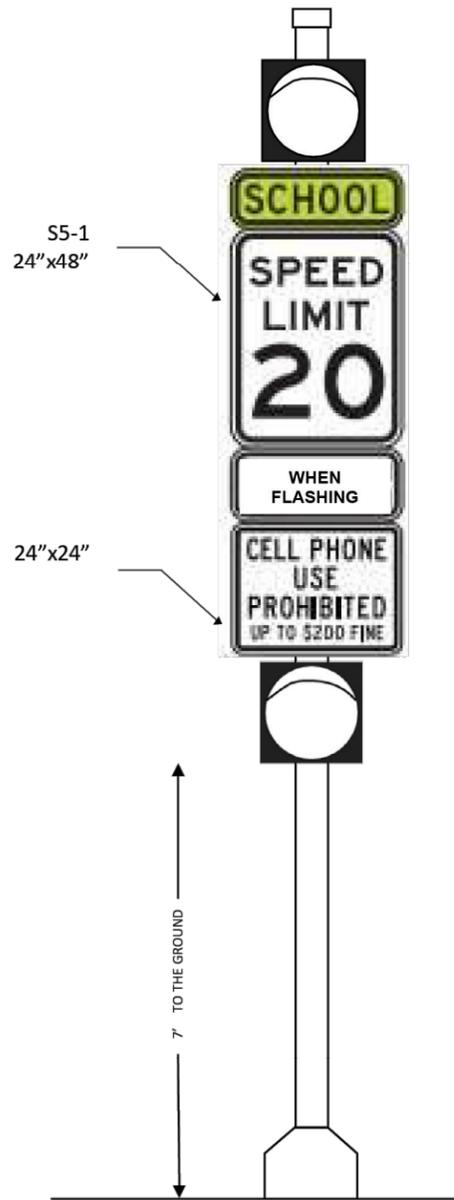
HORIZONTAL RECTANGLE

A	B	C	D	E	F	G	T
48	24	2	20	2	44	7	0.100
48	36	3	30	3	42	1	0.100
60	24	2	20	2	56	1	0.100
60	36	3	30	3	54	1	0.100
48	30	3	24	3	42	7	0.100
60	30	3	24	3	54	7	0.100



SCHOOL FLASHERS - FLASHING BEACONS

Poles are 4-1/2" O.D. with a spun pole aluminum finish. Threaded on one end to insert into the square aluminum base. 18" anchor bolts in 24" diameter pier 3-foot minimum depth.



*INSTALL A 12" WHITE TRANSVERSE LINE ACROSS THE FULL PAVEMENT WIDTH TO MARK EACH END OF ESTABLISHED REDUCED SCHOOL SPEED LIMIT WITHIN THE SCHOOL ZONE IN ACCORDANCE WITH TMUTCD SECTION 7C.03



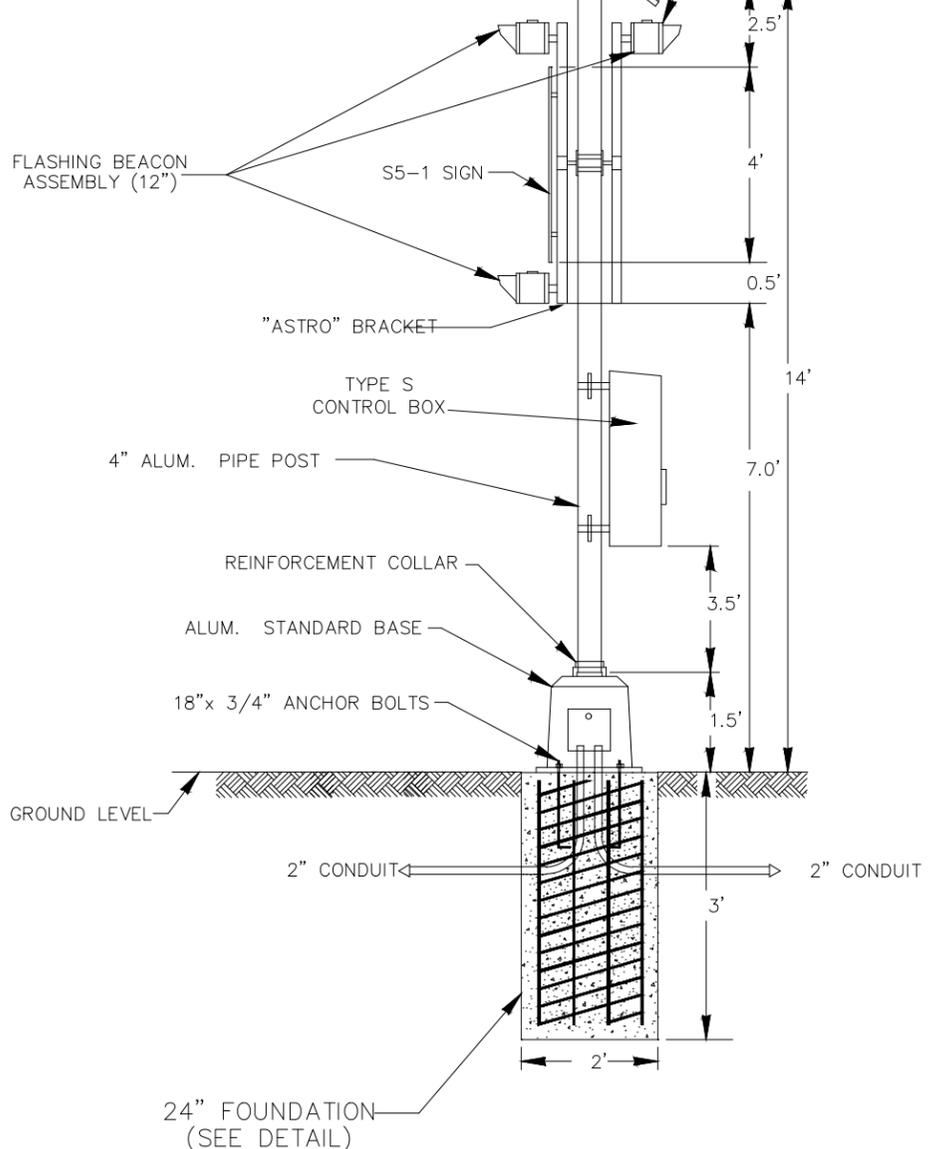
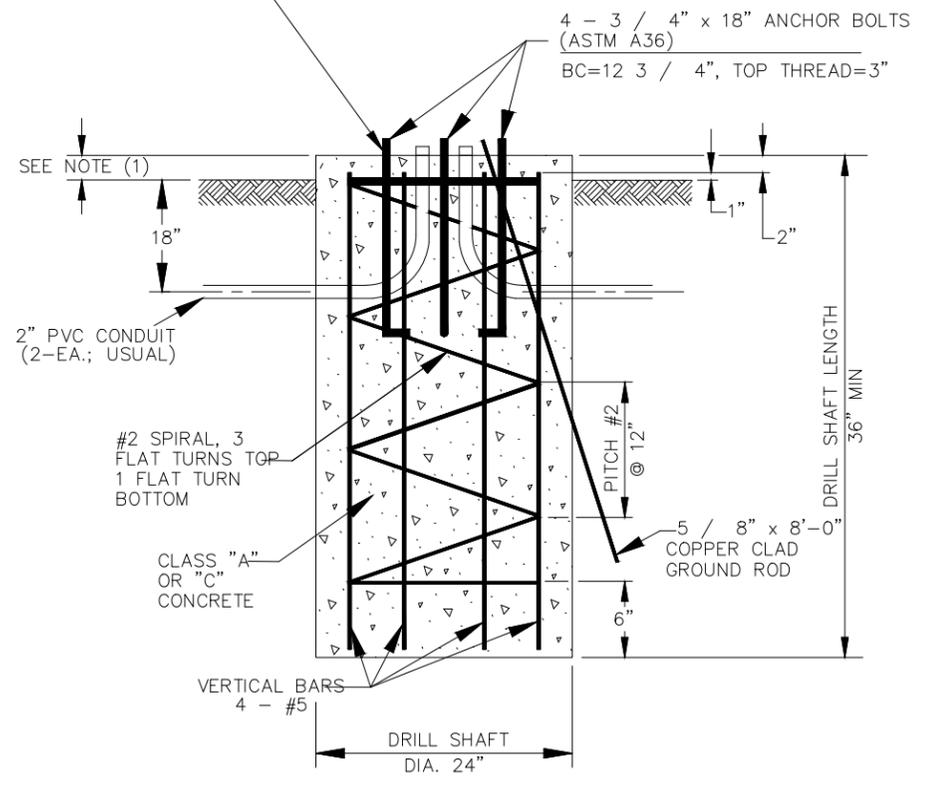
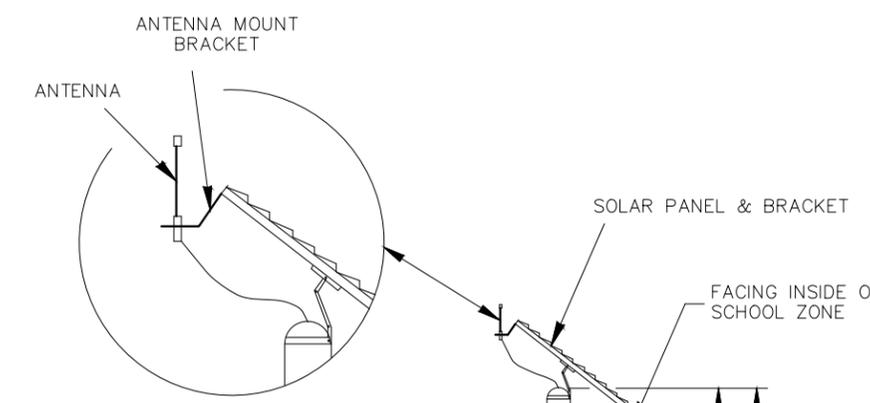
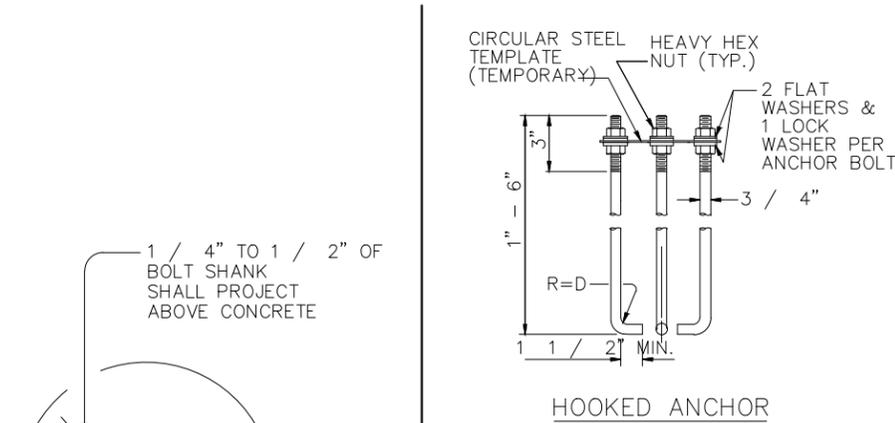
CITY OF DENISON, TEXAS

STANDARD CONSTRUCTION DETAILS
TYPICAL SCHOOL ZONE FLASHER ASSEMBLY

**AUGUST
2025**

SHEET NO.

49



	← S5-2A (COSA) 24" x 9"
	R2-1 24" x 30"
	S1-1 36" x 36" (DIAMOND GRADE FLOURESCENT YELLOW GREEN)
	(DIAMOND GRADE FLOURESCENT YELLOW GREEN) S5-1 24" x 48" (HIGH INTENSITY WHITE)
	W16-17 30" x 18" (DIAMOND GRADE FLOURESCENT YELLOW GREEN)
	W16-9P 36" x 20" (DIAMOND GRADE FLOURESCENT YELLOW GREEN)
ALL SIGNS SHALL COMPLY WITH STANDARD HIGHWAY SIGNS MANUAL, LATEST EDITION	

NOTE (1): 3" UNLESS OTHERWISE DIRECTED BY THE ENGINEER



CITY OF DENISON, TEXAS
STANDARD CONSTRUCTION DETAILS
FOUNDATION AND FLASHER ASSEMBLY STANDARDS

AUGUST 2025

SHEET NO.
50

Street Light Options Post Top

Town And Country		Washington	
20' Round Fiberglass Pole		15' Fluted Fiberglass Pole	
Embedded Base		Embedded w/ Town Lake Base	
LED	0-55W	LED	0-55W
HPS	100W	HPS	100W



Town and Country



Washington

Street Light Options Historical Specifications

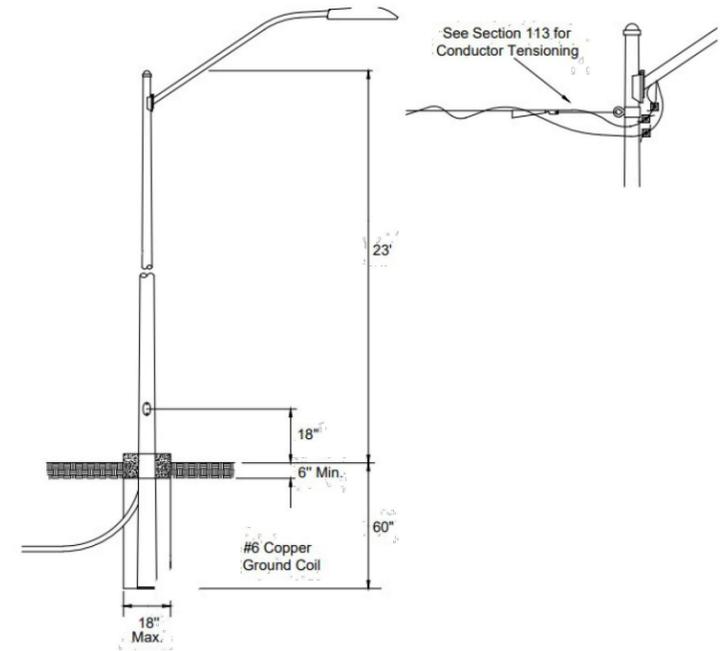
Pole	Mounting Height	Color Available	Material	Base
American	11' or 14'	Black	Cast Aluminium	24" Diameter w/ 15" Bolt Circle
Central Park	12'	Black	Cast Iron	24" Diameter w/ 15" Bolt Circle
European	12' or 14'	Black	Cast Iron	24" Diameter w/ 15" Bolt Circle
Texan	11' or 14'	Black	Cast Iron	24" Diameter w/ 15" Bolt Circle
Philadelphia*	16'	Black	Cast Aluminium	18" Diameter w/ 10.5" Bolt Circle

Luminaire	Light Source Options	Luminaire Size
Acorn	LED 0-55W, HPS 100W	41" Tall x 16" Wide
Lantern	LED 0-55W, HPS 100W	43.25" Tall x 16.125" Wide
Decorative	LED 0-55W	38" Tall x 16" Wide
Pendant*	LED 0-55W, HPS 100W	16" Tall x 16" Wide

*The Pendant Luminaire and bracket arm can only be used with the Philadelphia style pole.



Cobra Head Luminaire Embedded Base



Street Light Options Historical Luminaire

Historical Luminaires are the high-end street light options offered by Oncor. These luminaires are available in three different styles that can be mounted on any of the four available styles of Historical Poles.



Lantern



Acorn



Decorative

Street Light Options Historical Pole



American Central Park European Texan

All Historical Poles are installed on Oncor approved precast foundations.

Street Light Options Historical Pendant



Philadelphia with Single Pendant Philadelphia with Double Pendant

The Historical Pendant luminaire will be mounted 2 feet from the center of the pole and 17.5 inches above the height of the pole stated in the "Historical Specifications" table.



CITY OF DENISON, TEXAS

STANDARD CONSTRUCTION DETAILS
STREET LIGHT DETAILS

AUGUST
2025

SHEET NO.

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