

THE CITY OF MANSFIELD

STANDARD CONSTRUCTION DETAILS



**ENGINEERING DEPT.
MARCH 2006**

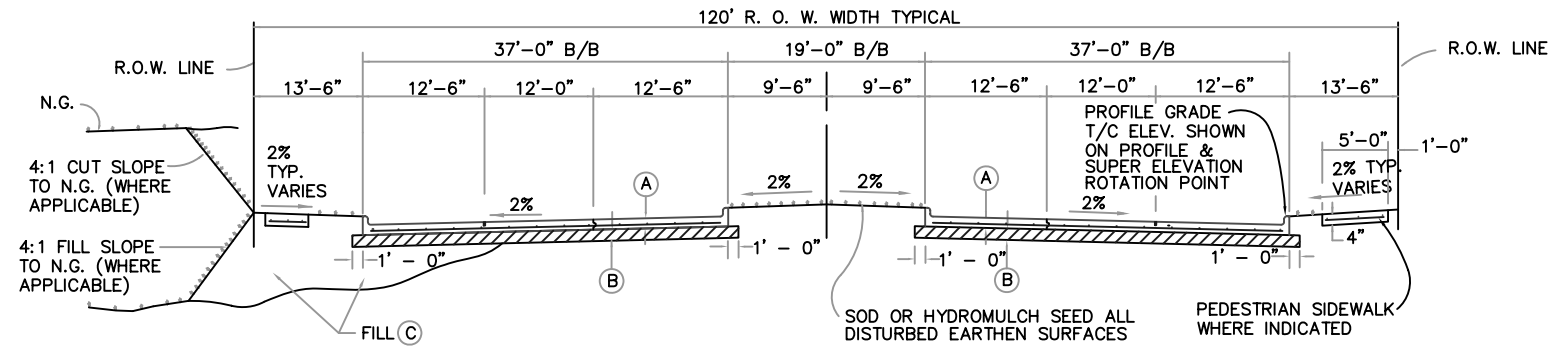
THE STANDARD SPECIFICATIONS FOR CONSTRUCTION SHALL BE THE OCTOBER 2004 EDITION OF THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION" PREPARED BY THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS EXCEPT AS AMENDED BY THESE STANDARD DETAILS & C.O.M. MATERIAL TESTING POLICIES.

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GENERAL NOTES:

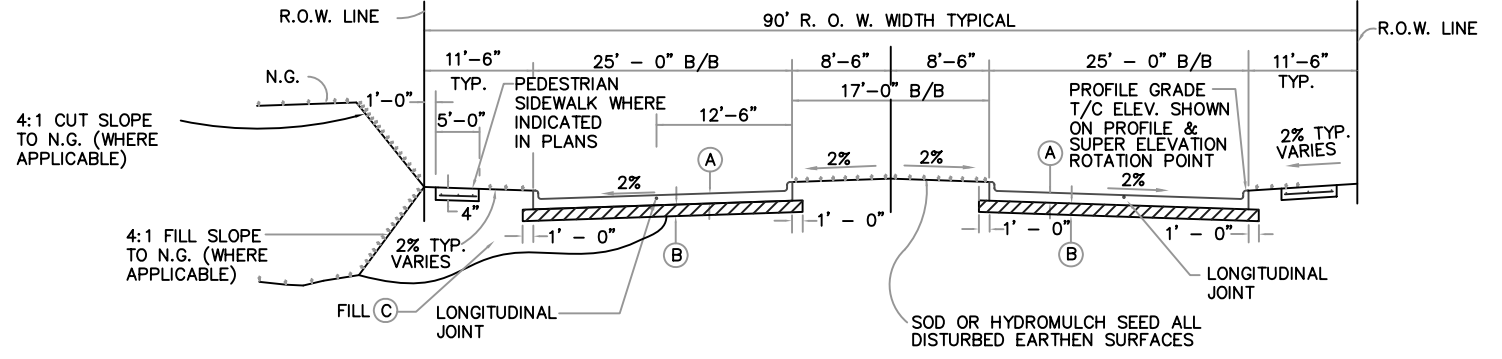
1. ALL CONSTRUCTION MATERIALS, METHODS AND PLACEMENT NOT DETAILED BELOW SHALL MEET OR EXCEED THE STANDARD SPECIFICATIONS OF THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS, OCTOBER 2004 EDITION, UNLESS SUPERSEDED BY CITY OF MANSFIELD STANDARD SPECIFICATIONS OR MATERIAL TESTING POLICIES.
2. SEE SHEET P-3 FOR PAVING GENERAL NOTES.
3. SEE OTHER PAVING DETAIL SHEETS FOR WALKWAY, CURB, JOINTING, STRIPING AND OTHER RELATED CONSTRUCTION DETAILS.
4. ALL CURBS MUST BE MONOLITHIC.
5. WHEN DESIGN SPEED IS 50 MPH OR GREATER THE FINISH SHALL BE TRANSVERSE WITH TRAFFIC LANES AND SHALL BE STEEL TINED BROOM FINISH.



STANDARD SECTION
N.T.S.

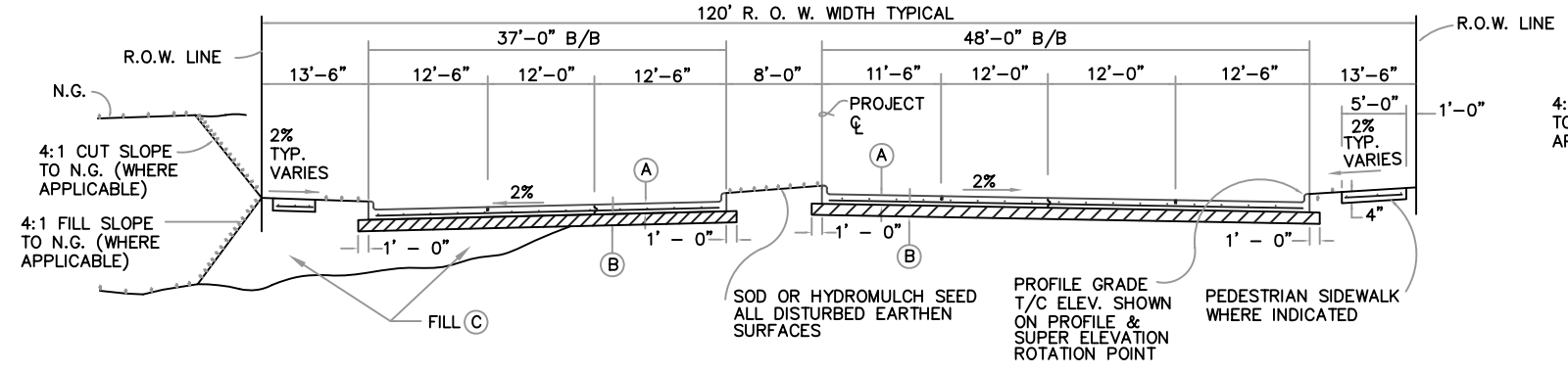
- (A) 8" CONCRETE PAVEMENT WITH MONOLITHIC CURB WITH #3 STEEL REINFORCING BARS ON 18" CENTERS BOTH WAYS IN CENTER OF SLAB.
- (B) 8" LIME SUBGRADE (SEE SHEET P-3, NOTE 5).
- (C) FILL EMBANKMENTS (EXTENDING TO EDGE OF SLOPES) SHALL BE COMPACTED TO A MINIMUM 95% ASTM D698 IN MAXIMUM 12" LOOSE, 6" COMPACTED LAYERS. MOISTURE SHALL BE OPTIMUM AND ABOVE.

NOTE:
PROVIDE EROSION CONTROL BLANKET ON SLOPES GREATER THAN 2' HIGH.

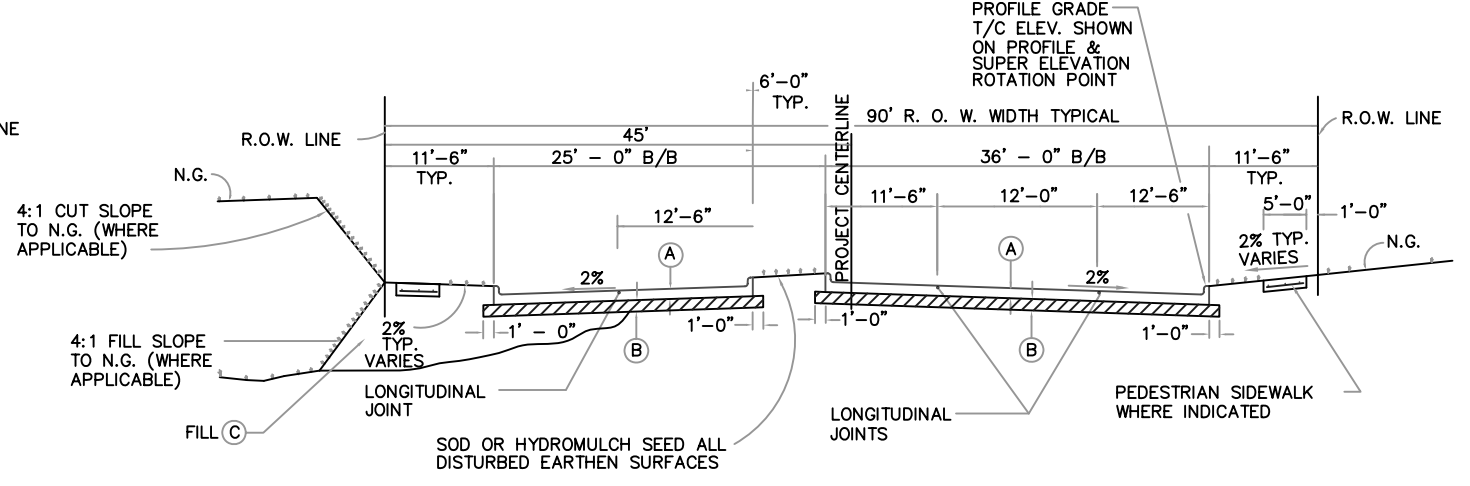


STANDARD SECTION
N.T.S.

NOTE:
PROVIDE EROSION CONTROL BLANKET ON SLOPES GREATER THAN 2' HIGH.



LEFT TURN SECTION
N.T.S.

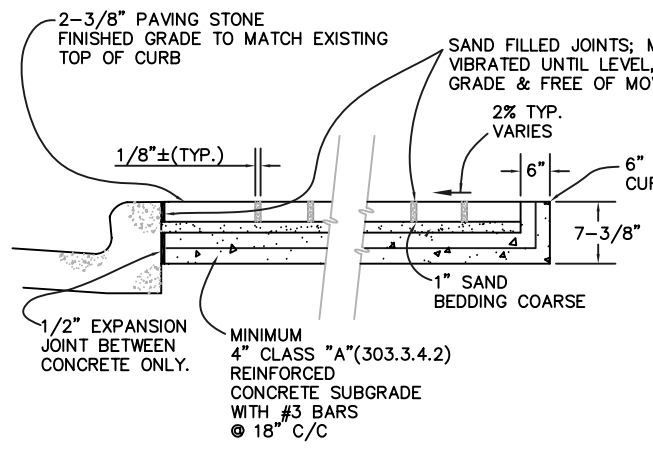


LEFT TURN SECTION
N.T.S.

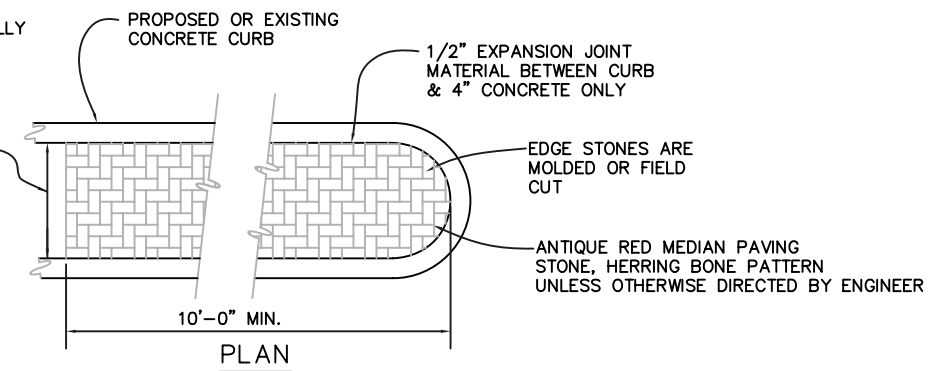
6 - LANE DIVIDED PRINCIPLE ARTERIAL TYPICAL SECTIONS

4 - LANE DIVIDED MINOR ARTERIAL TYPICAL SECTIONS

TYPICAL STREET SECTIONS: ARTERIALS		
CITY OF MANSFIELD STANDARD CONSTRUCTION DETAILS		
PAVING	DATE: MAR. 2006	SHEET NO. P-1



TYPICAL CROSS SECTION
N.T.S.

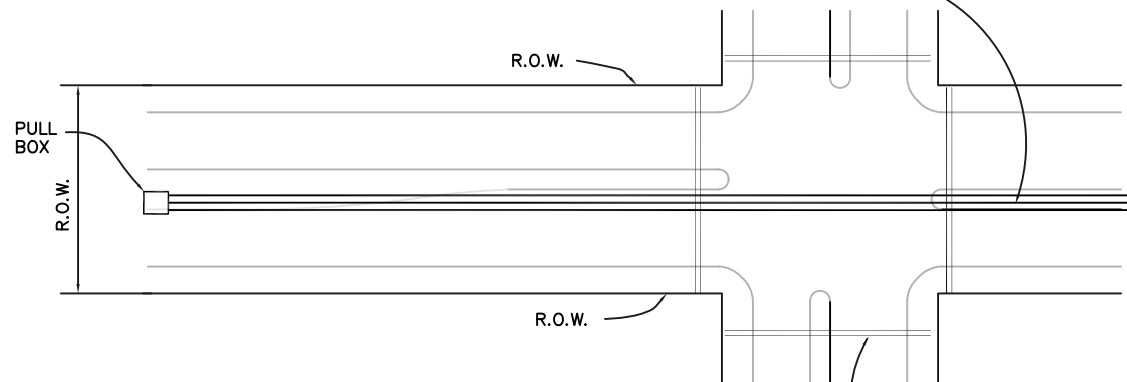


MEDIAN PAVING STONE DETAIL
N.T.S.

GENERAL NOTES:

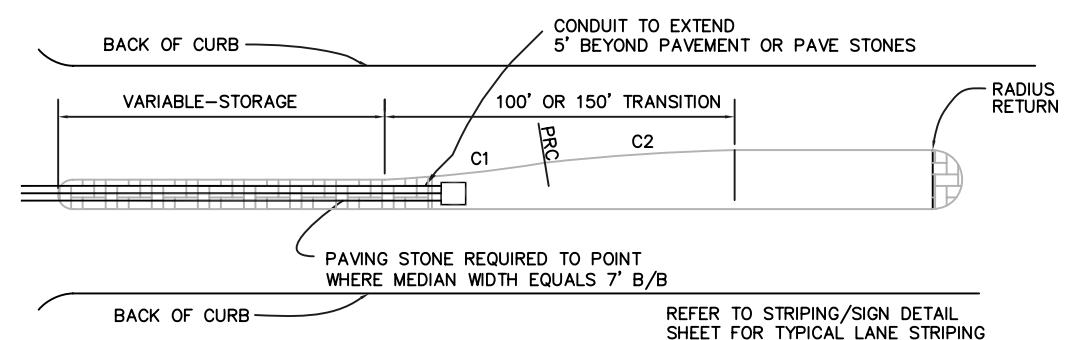
1. ALL CONSTRUCTION MATERIALS, METHODS AND PLACEMENT NOT DETAILED BELOW SHALL MEET OR EXCEED THE STANDARD SPECIFICATIONS OF THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS, OCTOBER 2004 EDITION UNLESS SUPERSEDED BY CITY OF MANSFIELD STANDARD SPECIFICATIONS, OR MATERIAL TESTING POLICIES.
2. PVC TO BE INSTALLED CONTINUOUS ACROSS INTERSECTION, EXTENDING TO 5' BEHIND CURBS OR PAVE STONES, TERMINATING IN PULL BOX W/LONG SWEEP 90° BENDS & CAPPED (DFW D-1500, OLSB).
3. RED MARKER TAPE IS TO BE INSTALLED ON THE ENDS OF THE CONDUIT.
4. THE EXACT LOCATIONS WHERE THE CONDUIT CROSSES UNDER THE PAVEMENT IS TO BE MARKED WITH RED PAINT ON THE CURB OR PAVING.
5. A NYLON CORD SHALL BE PLACED IN ALL CONDUIT. THE CORD SHALL EXTEND A MINIMUM 1' FROM THE END OF THE CONDUIT.
6. ALL CONDUIT SHALL BE PLACED ADJACENT TO THE CURB WITH A BURY DEPTH OF 3'-0" BELOW FINISHED GRADE AND BE SPACED ONE FOOT APART.
7. SCH. 40 CONDUIT PLACEMENT SHALL BE WEST OF CENTER LINE OF ELECTRICAL CONDUIT ON STREETS RUNNING NORTH & SOUTH & NORTH OF CENTERLINE OF ELECTRIC CONDUIT ELECTRIC ON STREETS RUNNING EAST & WEST. SCH. 80 CONDUIT (ELECTRIC) TO BE PLACED AT CENTERLINE OF R.O.W.
8. CONDUIT BACK FILL TO BE NATIVE MATERIAL MECHANICALLY TAMPED TO 95% OF ASTM D698, OPTIMUM MOISTURE OR ABOVE PER NCTCOG ITEM 504.

MEDIAN TO MEDIAN CROSSING:
1-6" & 1-4" SCH. 40 PVC CONDUIT FOR IRRIGATION (WHITE) & 1-4" SCH. 80 PVC CONDUIT FOR ELECTRIC (GRAY) (SEE GENERAL NOTES)



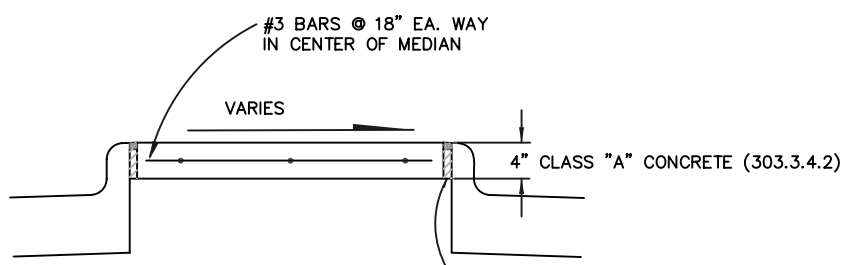
CONDUIT
N.T.S.

INTERSECTION CROSSING:
2-4" SCH. 40 PVC CONDUITS (PER CROSSING)



LEFT TURN LANE LAYOUT DETAIL
N.T.S.

1. ALL DIMENSIONS ARE TO BACK OF CURB UNLESS NOTED OTHERWISE.
2. TURN LANES TO BE 11'-0" TO FACE OF CURB, MAIN LANES 12'-0".
3. ALL MEDIAN NOSES TO BE SEMI-CIRCLES.



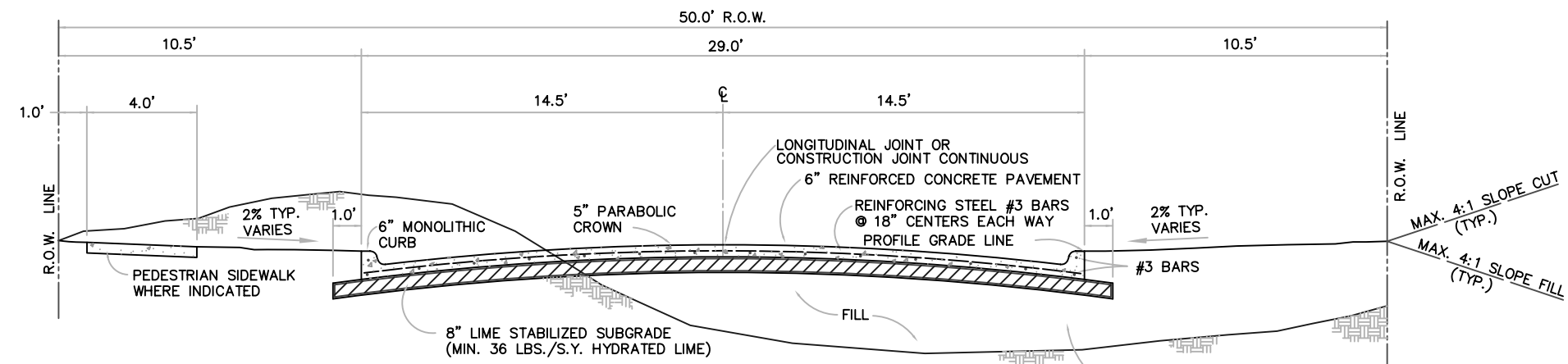
CONCRETE MEDIAN CAP
N.T.S.

EXPANSION JOINTS:
ASPHALT IMPREGNATED FIBER BOARD W/ PLASTIC COVER STRIP REMOVED BEFORE SEALING. EXPANSION JOINT FILLER MUST EXTEND TO SUBGRADE OF MEDIAN PAVEMENT. PROVIDE 3/4" ISOLATION JOINT AROUND LIGHT STANDARDS.

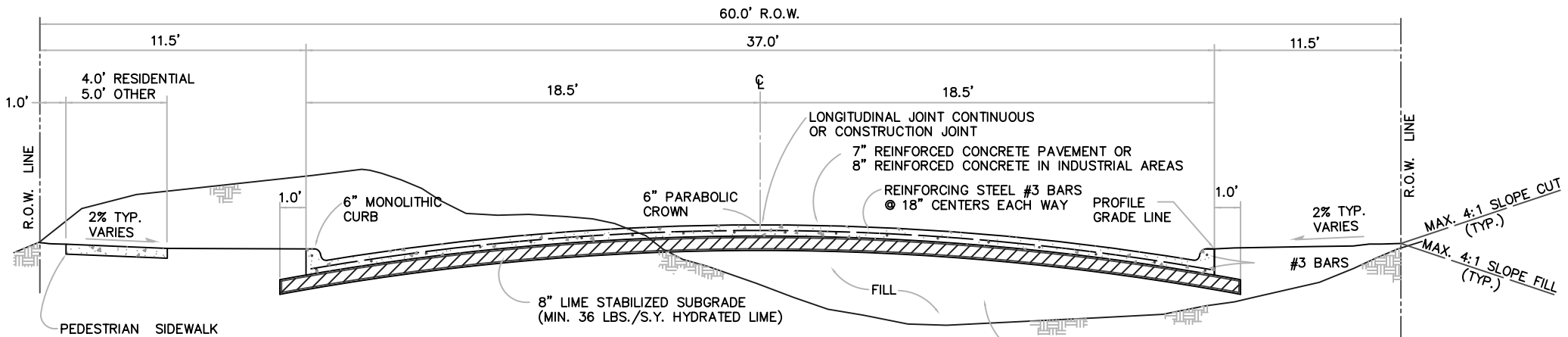
MEDIAN, LEFT TURN LANE, & CONDUIT DETAILS		
CITY OF MANSFIELD ENGINEERING DEPARTMENT		
PAVING	DATE: MAR. 2006	SHEET NO. P-2

GENERAL NOTES:

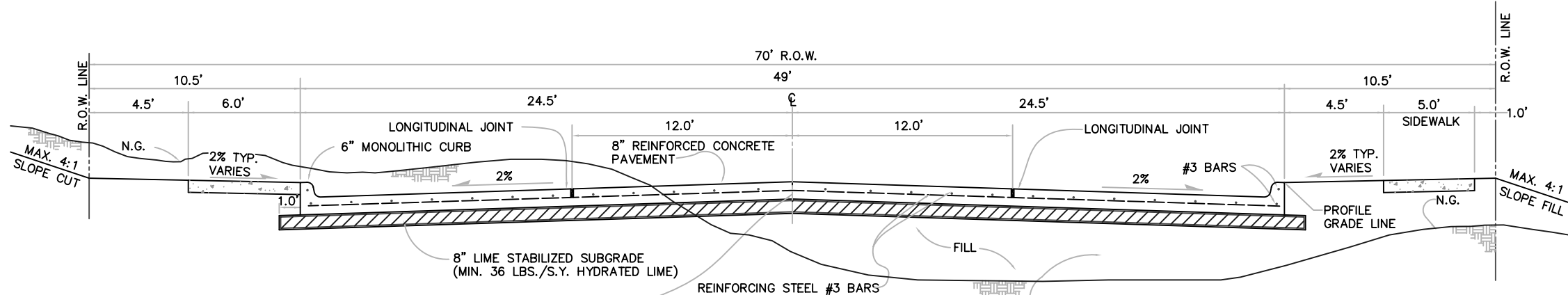
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2. CONCRETE FOR MACHINE PAVING TO BE CLASS P1 AND CONCRETE FOR HAND PAVING TO BE CLASS P2 PER NCTCOG SPEC. 303.3.4.2. ALL CONCRETE SHALL CONTAIN SUFFICIENT AIR ENTRAINING AGENT TO YIELD 5% (± 1%) AIR CONTENT. ALL OTHER ADMIXTURES SHALL REQUIRE THE PERMISSION OF THE ENGINEERING DEPARTMENT. ALL MIX DESIGNS TO BE MIN. 50% CRUSHED STONE WITH A MAXIMUM COARSE AGGREGATE SIZE OF 1". FLY ASH MAY BE USED IN MIX DESIGNS AS DETAILED IN NCTCOG, ITEM 303.2.4
3. AN APPROVED WHITE PIGMENTED CURING COMPOUND SHALL BE APPLIED TO THE SURFACE OF THE PAVEMENT AS SOON AS IT HAS BEEN PLACED AND FINISHED.
4. CONCRETE STREET PAVEMENT SHALL BE CONSTRUCTED BY USE OF A PAVING MACHINE THAT INCORPORATES AN AUGER/STRIKE OFF UNIT, HYDRAULICALLY POWERED, MOTOR-IN-HEAD, VARIABLE SPEED, INDEPENDENTLY CONTROLLED VIBRATORS (MIN. 4 VIBRATORS 2" DIAMETER HEADS MIN., SPACE 2' APART MAX.) AND AN INTEGRATED MONOLITHIC VIBRATED "CURB MULE". HAND PLACEMENT OF STREET PAVEMENT WILL ONLY BE ALLOWED FOR AREAS NOT POSSIBLE WITH A MACHINE (EX. CUL-DE-SACS, INTERSECTIONS, EYEBROWS, SMALL BLOCK-OUTS, ETC.).
5. CITY OF MANSFIELD SHALL REVIEW LIME SERIES RECOMMENDATION FROM GEOTECHNICAL ENGINEER TO DETERMINE PERCENTAGE OF LIME OR PORTLAND CEMENT NECESSARY TO PREPARE SUBGRADE. 6% (36 LBS./S.Y.) WILL BE MINIMUM LIME CONTENT. ALL SUBGRADE DEPTHS SHALL BE 8". SEE C.O.M. MATERIAL TESTING POLICIES FOR ADDITIONAL INFORMATION.
6. ON CONCRETE STREETS, ALL INLETS SHALL BE SEPARATED FROM THE PAVEMENT AND CURB BY BLOCKING OUT AS SHOWN ON JOINT DETAILS (SEE SHEET P-5 & SD-1). WHEN A JOINT FALLS WITHIN 5' OF OR CONTACTS INLETS, OR OTHER STRUCTURES, SHORTEN ONE OR MORE PANELS EITHER SIDE OF STRUCTURE TO MATCH BLOCKED OUT CORNERS. MANHOLES SHALL BE PLACED MONOLITHIC W/STREET.
7. ALL REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A-615 GRADE 60. REINFORCING STEEL SHALL BE PLACED WITH A MINIMUM OF 1 1/2" OF COVER FOR #5 BARS OR SMALLER. WHERE REINFORCING BARS ARE SPLICED, A 30 DIAMETER LAP SHALL BE USED. SEE JOINT DETAIL SHEET P-5 FOR JOINT DETAILS, SPACING, JOINT MATERIALS, AND SEALANT.
8. THE CONTRACTOR SHALL INSTALL SUPPORTING CHAIRS, WITH PLATES OR BASES, FOR REINFORCING STEEL ON A ONE SQUARE YARD SPACING IN ALL CONCRETE PAVEMENT.
9. PAVEMENT TO INSTALL GRIPPER PLUGS IN PIPE ENDS OF ALL MANHOLES OR FALSE BOTTOMS IN "IN SERVICE" MANHOLES PRIOR TO EXCAVATION OR SUBGRADE PREPARATION.
10. ALL 4 LANE THOROUGHFARES OR LARGER SHALL HAVE SUBDRAINS INSTALLED AT BACK OF CURB ON BOTH SIDES OF ROAD WHERE GROUND WATER OR IRRIGATION WATER IS ANTICIPATED TO BE PRESENT. CITY ENGINEER SHALL DETERMINE LOCATIONS (SEE SHEET P-7).



RESIDENTIAL TYPICAL SECTION
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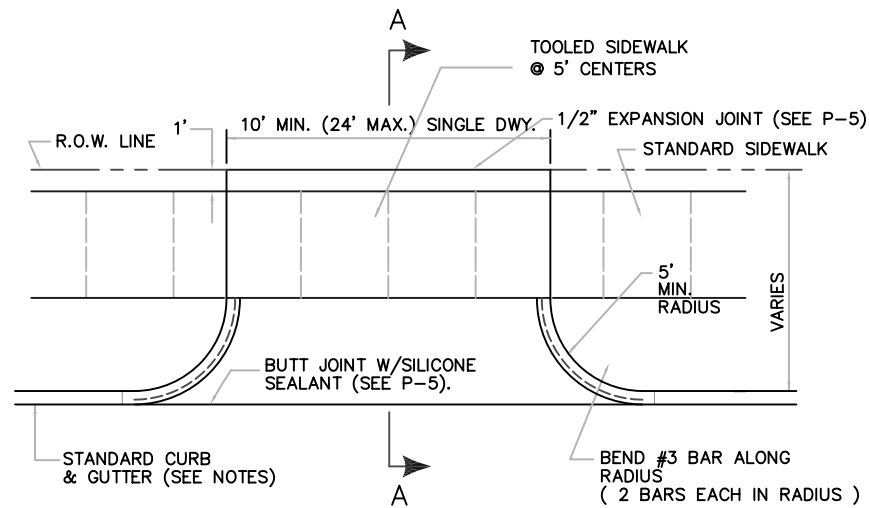
MINOR COLLECTOR TYPICAL SECTION
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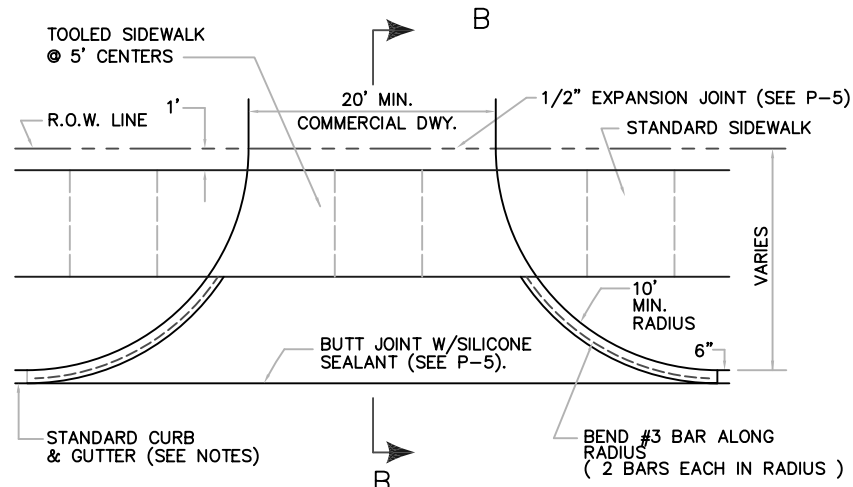
MAJOR COLLECTOR TYPICAL SECTION
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TYPICAL STREET SECTIONS:
 RESIDENTIAL AND COLLECTORS
 CITY OF MANSFIELD
 STANDARD CONSTRUCTION DETAILS

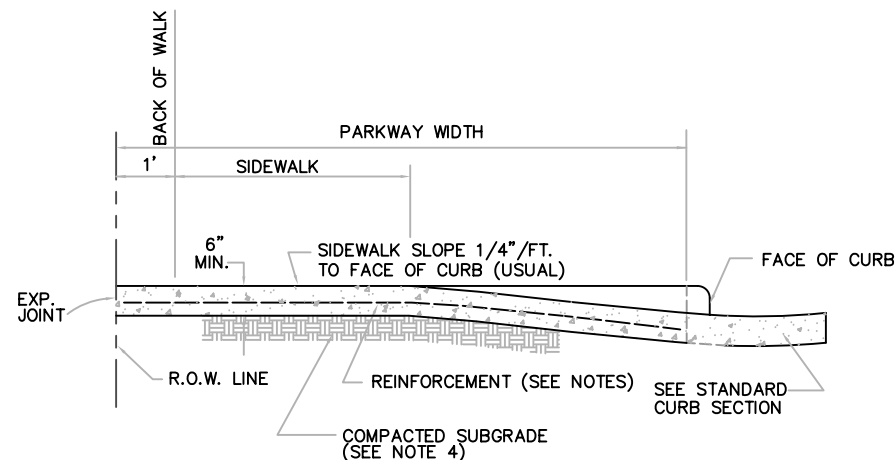
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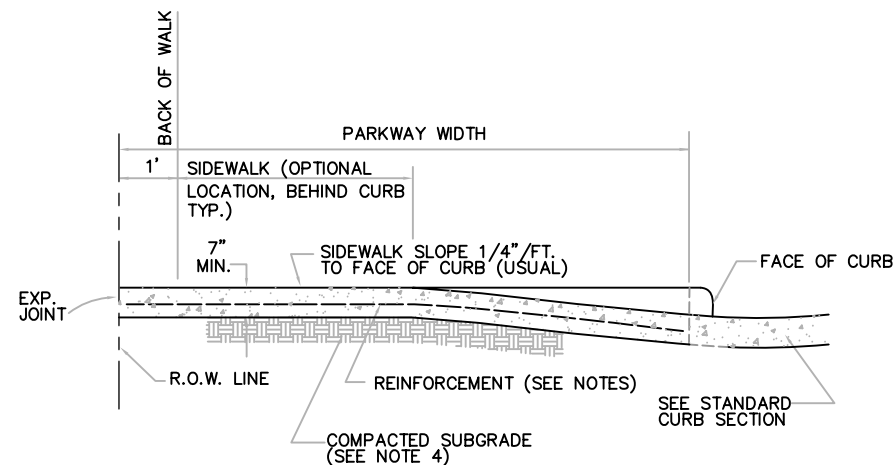
PLAN VIEW



PLAN VIEW



SECTION A-A



SECTION B-B

NOTES:

- EXISTING CURB AND GUTTER, IF ANY, MUST BE SAWED.
- REINFORCE DRIVE WITH #3 BARS AT 18" C-C, SUPPORTED BY STANDARD CHAIRS (3' MAX. SPACING).
- SIDEWALK SECTION THRU DRIVEWAY TO BE THE SAME THICKNESS AS THE DRIVEWAY APPROACH & TOOLED TO MATCH SIDEWALK.
- COMPACT SUBGRADE TO MINIMUM 95% ASTM D698, OPTIMUM MOISTURE CONTENT OR ABOVE.
- DRILL INTO EXISTING STREET AT 18" CENTERS PER DETAIL SHT. P-5, BUTT JOINT DETAIL.
- DRIVEWAY CURB CUT SHALL NOT EXTEND INTO INTERSECTION RADIUS OR CURB INLET TRANSITION.

RESIDENTIAL DRIVE APPROACH

N.T.S.

NOTES:

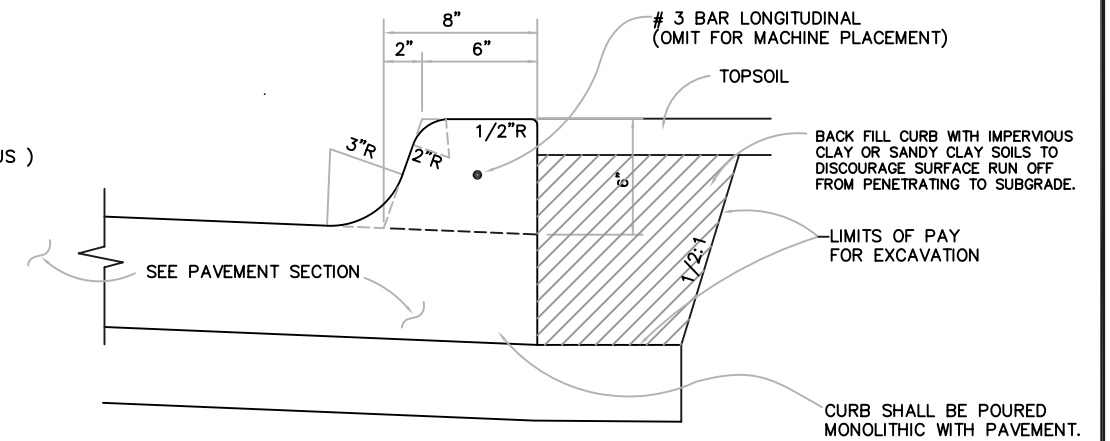
- EXISTING CURB AND GUTTER, IF ANY, MUST BE SAWED.
- REINFORCE DRIVE WITH #3 BARS AT 12" C-C, SUPPORTED BY STANDARD CHAIRS (3' MAX. SPACING).
- SIDEWALK SECTION THRU DRIVEWAY TO BE THE SAME THICKNESS AS THE DRIVEWAY APPROACH & TOOLED TO MATCH SIDEWALK.
- COMPACT SUBGRADE TO MINIMUM 95% ASTM D698, OPTIMUM MOISTURE CONTENT OR ABOVE.
- DRILL INTO EXISTING STREET AT 12" CENTERS PER DETAIL SHT. P-5, BUTT JOINT DETAIL.
- DRIVEWAY CURB CUT SHALL NOT EXTEND INTO INTERSECTION RADIUS OR CURB INLET TRANSITION.

COMMERCIAL DRIVE APPROACH

N.T.S.

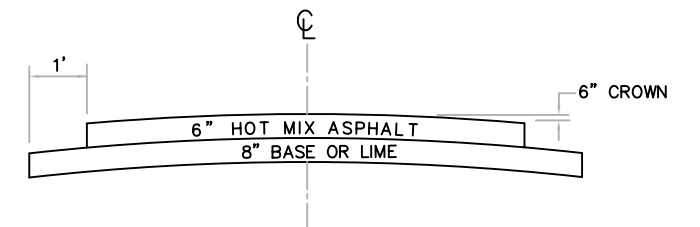
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- ALL CONCRETE SHALL MEET THE QUALITY ON GENERAL PAVING STANDARDS SHEET AND SHALL RECEIVE A MEDIUM BRUSH FINISH.
- DRIVE APPROACH BLOCK OUTS TO BE 2'6" FROM BACK OF CURB INTO SLAB AND EXTEND FROM CURB RETURN TO CURB RETURN.
- ALL CONCRETE SHALL BE CLASS "C" CONTAINING A MINIMUM OF 6 SACKS OF TYPE 1 CEMENT PER YARD AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,600 P.S.I. AT 28 DAYS (303.3.4.2). AGGREGATE SHALL CONSIST OF A MINIMUM OF 50% CRUSHED STONE (1" MAX.). ALL CONCRETE PLACED SHALL CONTAIN SUFFICIENT AIR ENTRAINING AGENT TO YIELD 5% (±1%) AIR CONTENT. ALL OTHER ADMIXTURES SHALL REQUIRE THE PERMISSION OF THE ENGINEERING DEPARTMENT. FLY ASH MAY BE USED IN MIX DESIGNS AS DETAILED IN NCTCOG ITEM 303.2.4.



TYPICAL SECTION - MONOLITHIC CURB

N.T.S.



NOTE:

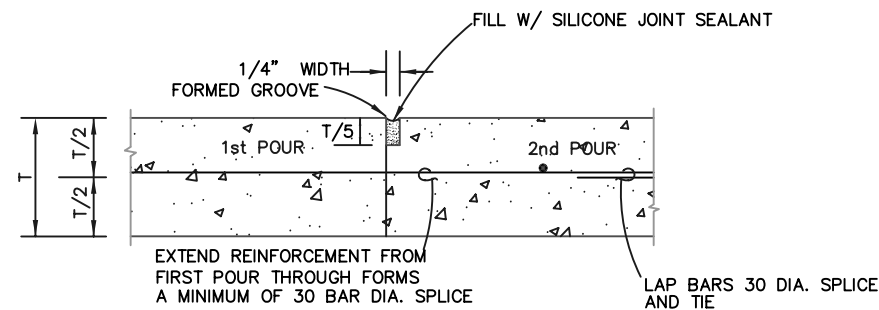
BASE-8" CRUSHED STONE BASE COMPACTED TO A MINIMUM OF 95% OF STANDARD PROCTOR AT OPTIMUM MOISTURE OR 8" LIME STABILIZED MATERIAL. ASPHALT-4" BINDER BASE 2" TYPE "D" SURFACE (CRUSHED STONE TYPE)

TACK COAT - 0.05 GAL/S.Y. OF MC - 30 TO BE APPLIED IF SURFACE OF HMAc IS OPENED TO TRAFFIC OR ALLOWED TO SET BETWEEN PLACEMENTS.

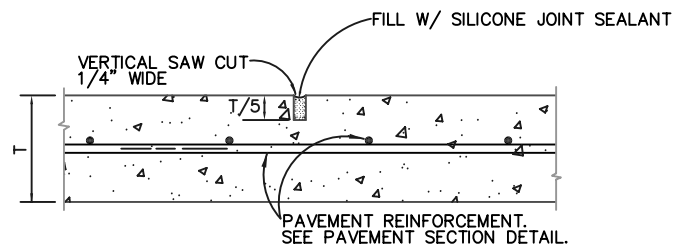
TEMPORARY ASPHALT TRANSITION DETAIL

N.T.S.

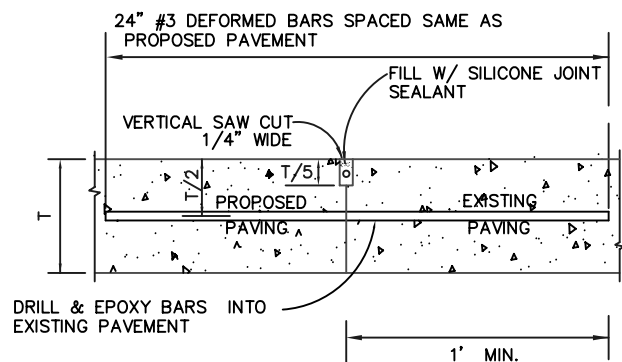
DRIVE APPROACHES, CURB, & ASPHALT DETAILS		
CITY OF MANSFIELD		
STANDARD CONSTRUCTION DETAILS		
PAVING	DATE: MAR. 2006	SHEET NO. P-4



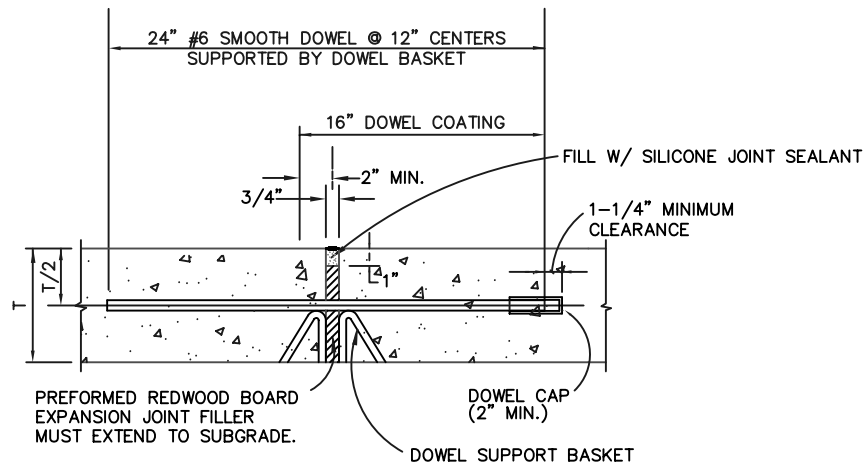
CONSTRUCTION JOINT
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SAWED CONTRACTION JOINT
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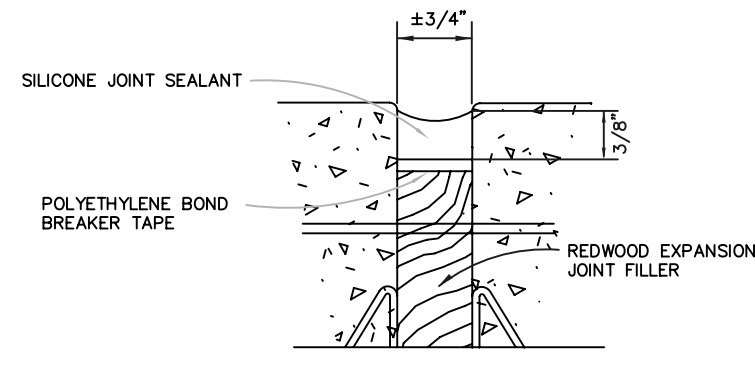


BUTT JOINT
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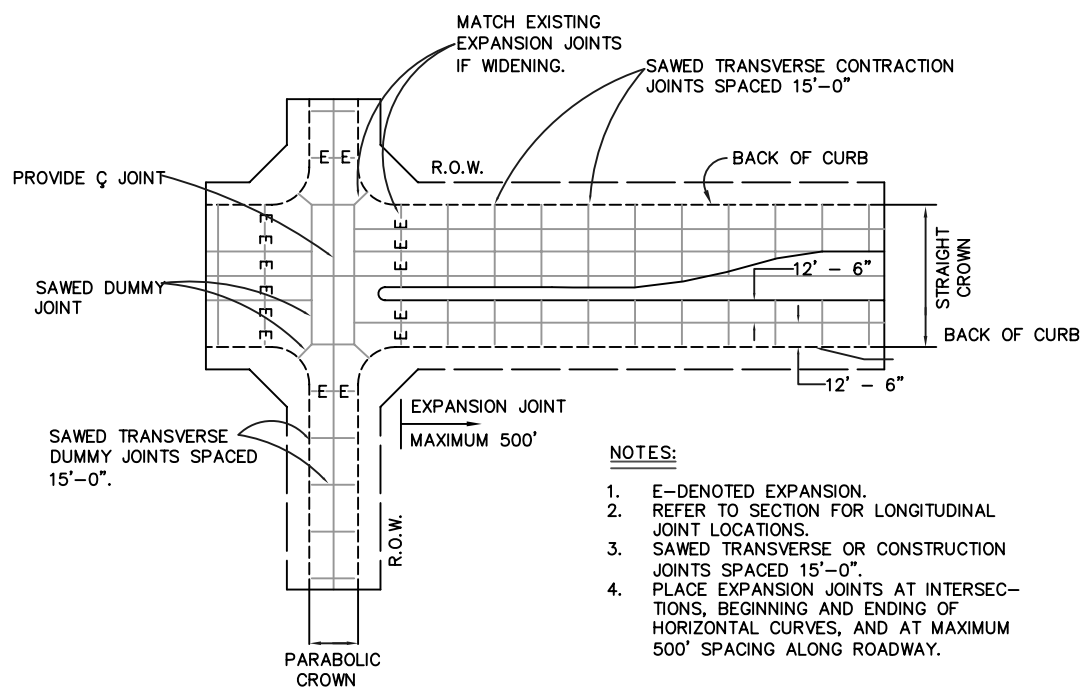


NOTE:
CAPPED SIDE OF DOWEL TO BE GREASED

EXPANSION JOINT
N.T.S.

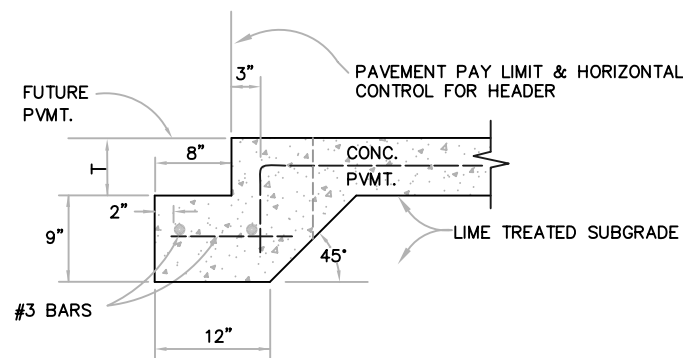


SEALANT DETAIL FOR TRANSVERSE EXPANSION JOINT
N.T.S.



- NOTES:**
1. E-DENOTES EXPANSION.
 2. REFER TO SECTION FOR LONGITUDINAL JOINT LOCATIONS.
 3. SAWED TRANSVERSE OR CONSTRUCTION JOINTS SPACED 15'-0".
 4. PLACE EXPANSION JOINTS AT INTERSECTIONS, BEGINNING AND ENDING OF HORIZONTAL CURVES, AND AT MAXIMUM 500' SPACING ALONG ROADWAY.

SPACING DIAGRAM FOR TRANSVERSE JOINTS
N.T.S.



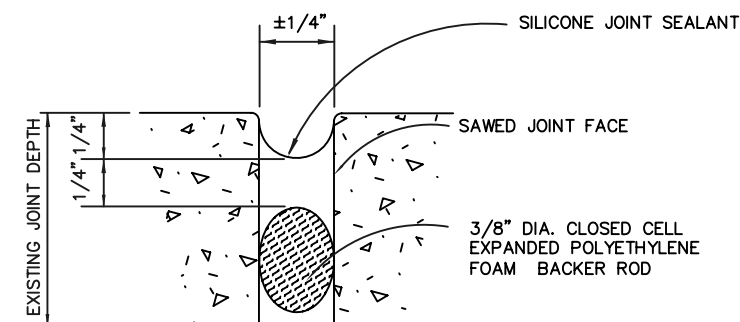
NOTE:
PAVEMENT BARS TO BE BENT DOWN INTO HEADER AND PAVEMENT TO BE MONOLITHIC.

CONCRETE HEADER
N.T.S.

GENERAL NOTES:

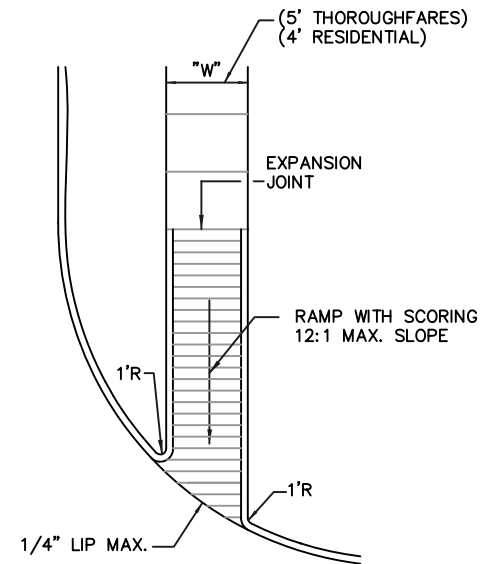
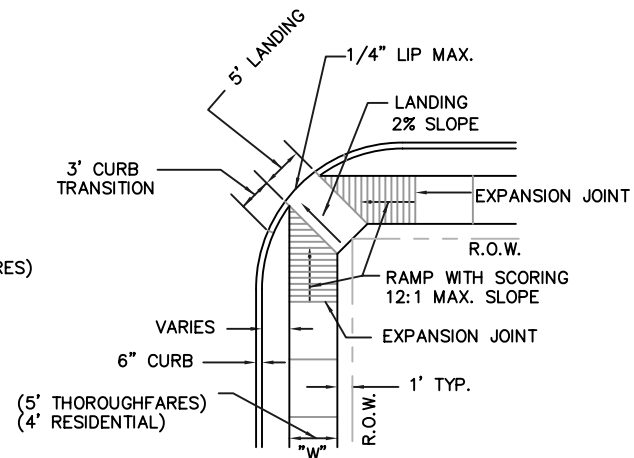
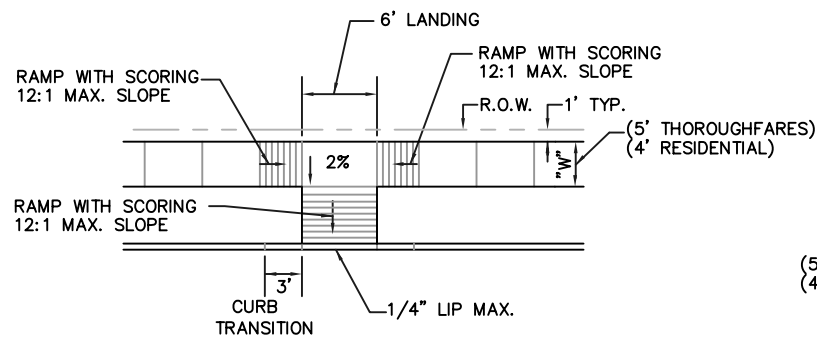
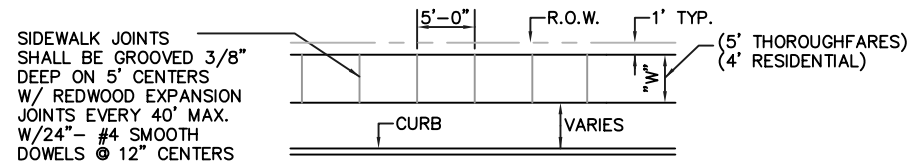
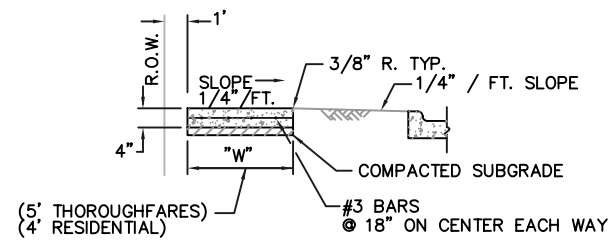
T= PAVEMENT THICKNESS

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2. CONTRACTOR MUST USE MONOLITHIC CURB UNLESS DOWELED CURB IS PRE-APPROVED BY ENGINEERING DEPARTMENT.
3. DOWEL BARS OR REBAR PLACED INTO EXISTING PAVEMENT SHALL BE DRILLED INTO PAVEMENT HORIZONTALLY. PUSHING DOWEL BARS OR REBAR INTO GREEN CONCRETE IS NOT ACCEPTABLE. SECURE DOWEL BARS OR REBAR INTO EXISTING PAVING WITH EPOXY GROUT.
4. SEALANT SHALL BE SELF-LEVELING SILICONE PER CITY OF FORT WORTH DETAIL: "SILICONE JOINT SEALANT FOR CONCRETE PAVEMENT."
5. THE CONSTRUCTION JOINT IS TO BE USED BETWEEN SEPARATE POURS OF PROPOSED PAVEMENT. NOTE THAT IT REQUIRES THE REINFORCEMENT TO BE EXTENDED THROUGH THE FORM TO TIE TO THE NEXT POUR. THE BUTT JOINT IS TO BE USED BETWEEN EXISTING CONCRETE PAVEMENT (STREET, DRIVEWAY, OR BLOCK OUT) AND PROPOSED PAVEMENT, UNLESS AN EXPANSION JOINT IS CALLED FOR OR AN "L" BAR MAY BE ATTACHED TO STEEL MAT TO BE BENT OUT INTO NEXT PLACEMENT.



SEALANT DETAIL FOR SAWED DUMMY JOINT
N.T.S.

JOINT & SEALANT DETAILS		
CITY OF MANSFIELD		
STANDARD CONSTRUCTION DETAILS		
PAVING	DATE: MAR. 2006	SHEET NO. P-5



**SIDEWALK
GENERAL NOTES:**

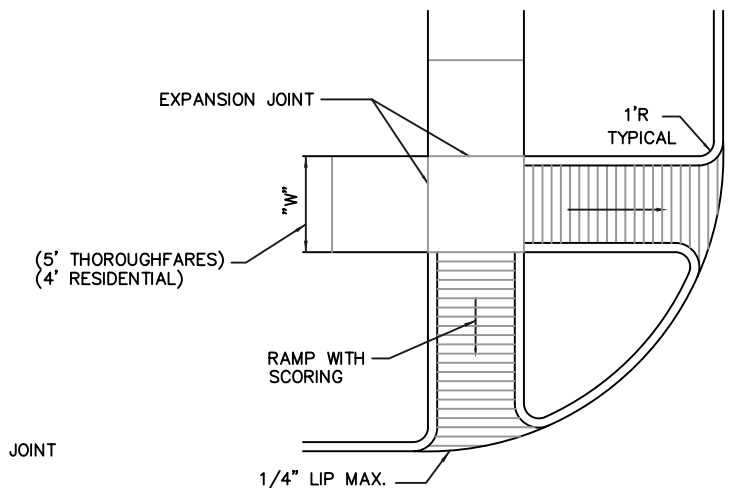
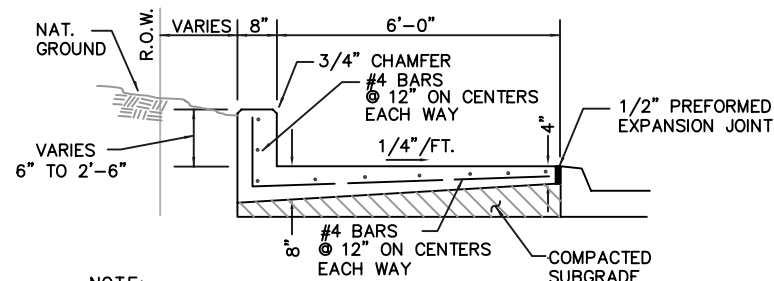
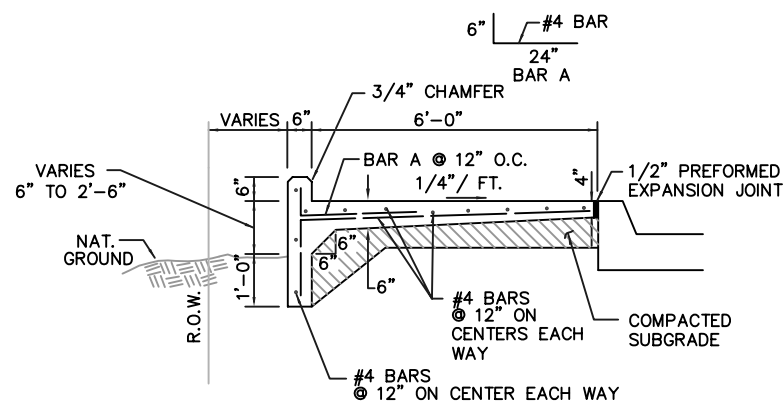
1. ALL CONSTRUCTION MATERIALS, METHODS AND PLACEMENT NOT DETAILED BELOW SHALL MEET OR EXCEED THE STANDARD SPECIFICATIONS OF THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS, OCTOBER 2004 EDITION UNLESS SUPERSEDED BY CITY OF MANSFIELD STANDARD SPECIFICATIONS OR MATERIAL TESTING POLICIES.
2. CONCRETE SHALL BE A MINIMUM OF 4 INCHES THICK, CLASS "A", (303.3.4.2) CONTAINING A MINIMUM OF 5 SACKS OF TYPE 1 CEMENT PER YARD. AGGREGATE SHALL CONSIST OF A MINIMUM OF 50% CRUSHED STONE (1" MAX.). ALL CONCRETE PLACED SHALL CONTAIN SUFFICIENT AIR ENTRAINING AGENT TO YIELD 5% (±1%) AIR CONTENT.
3. CHAMFER ALL EXPOSED EDGES OF CONCRETE WALLS 3/4 INCH.
4. ALL REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A-615 GRADE 60. REINFORCING STEEL SHALL BE PLACED WITH A MINIMUM OF 1-1/2 INCH OF COVER FOR #5 BARS OR SMALLER. WHERE REINFORCING BARS ARE SPLICED, A 30 DIAMETER LAP SHALL BE USED.
5. SUBGRADE SHALL CONSIST OF NATIVE SOIL COMPACTED TO A DENSITY NOT LESS THAN 95% ASTM D698, OPTIMUM MOISTURE CONTENT OR ABOVE.
6. SIDEWALKS SHALL BE FINISHED BY LIGHTLY BROOMING SURFACE TRANSVERSE TO DIRECTION OF TRAFFIC, WHERE ADJACENT SIDEWALKS DIFFER FROM THIS STANDARD, NEW SIDEWALKS SHALL CONFORM TO ADJACENT SIDEWALK.
7. AN APPROVED WHITE PIGMENTED CURING COMPOUND SHALL BE APPLIED TO THE SURFACE OF THE PAVEMENT AS SOON AS IT HAS BEEN PLACED AND FINISHED.
8. RETAINING WALLS TO HAVE REDWOOD EXPANSION JOINTS @ 40' MAX. W/24" - #4 SMOOTH DOWELS @ 12" CENTERS.

**HANDICAP
GENERAL NOTES:**

1. HANDICAP RAMPS AND WALKWAYS SHALL CONFORM TO THE LATEST STANDARDS OF THE "TEXAS ACCESSIBILITY STANDARDS" (TAS) AND THE "UNIFORM FEDERAL ACCESSIBILITY STANDARDS" ESTABLISHED BY THE AMERICANS WITH DISABILITIES ACT (ADA) OF 1990.
2. SCORING AT RAMP WARNING LOCATIONS SHALL CONSIST OF TOOLED OR SAWED GROOVES 4 INCHES APART 1/4 INCH WIDE BY 1/8 INCH DEEP FOR THE FULL WIDTH OF THE RAMP TRANSVERSE TO THE DIRECTION OF MOVEMENT.

SIDEWALK ABUTTING CURB SECTION
N.T.S.

MID-BLOCK RAMP FOR WALK ABUTTING CURB
N.T.S.



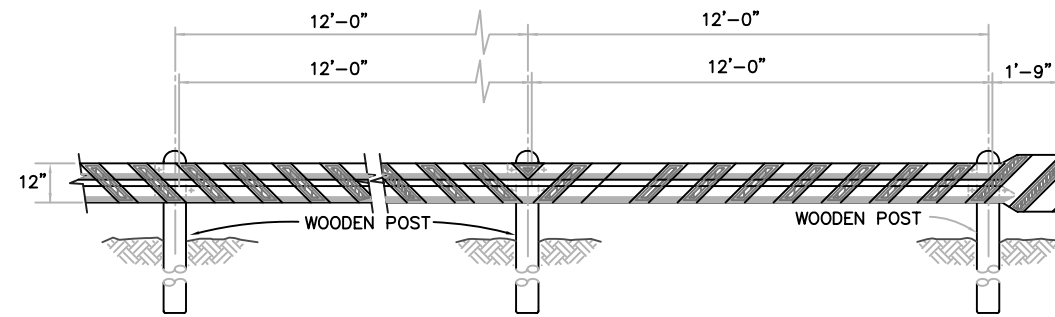
**PARALLEL CURB RAMP FOR WALK
ABUTTING CURB**
N.T.S.

SIDEWALK & RAMP DETAILS		
CITY OF MANSFIELD STANDARD CONSTRUCTION DETAILS		
PAVING	DATE: MAR. 2006	SHEET NO. P-6

PERMANENT BARRICADE DETAILS

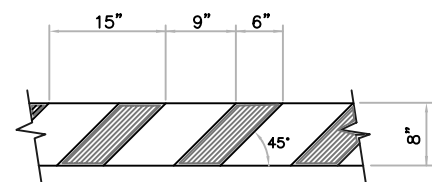
NOTES FOR PERMANENT TYPE BARRICADE:

1. ALL CONSTRUCTION MATERIALS, METHODS AND PLACEMENT NOT DETAILED ABOVE SHALL MEET OR EXCEED THE STANDARD SPECIFICATIONS OF THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS, OCTOBER 2004 EDITION, UNLESS SUPERSEDED BY CITY OF MANSFIELD STANDARD SPECIFICATIONS OR MATERIAL TESTING POLICIES.
2. ALL INSTALLATION SHALL BE OF NEW MATERIALS. METAL FLEX-BEAM GUARDRAIL SHALL BE 10 GAUGE, GALVANIZED AS PER ASTM A 93. SUBSTITUTIONS OF ANY ITEM SHALL BE APPROVED BY THE ENGINEERING DEPARTMENT PRIOR TO INSTALLATION.
3. ALL POSTS SHALL BE WOLMANIZED TREATED FOR GROUND CONTACT. SQUARE 6"x6" POSTS (ALSO TREATED) MAY BE SUBSTITUTED, PROVIDED THE TOP OF EACH POST IS BEVELED A MINIMUM OF 10° (DEGREES).
4. ALL BOLTS, WASHERS, OR HARDWARE SHALL BE GALVANIZED TREATED TO RESIST RUST. BOLTS SHALL BE OF SUFFICIENT LENGTH TO EXTEND THROUGH THE THICKNESS OF THE NUT.
5. POSTS SHALL NOT BE CONCRETED IN PLACE, BUT SHALL INSTEAD BE BACK FILLED WITH WELL-TAMPED SOIL.
6. STRIPING-BARRICADES SHOULD HAVE STRIPE SLOPE DOWNWARD IN THE DIRECTION TOWARD WHICH TRAFFIC MUST TURN IN DETOURING. WHEN BOTH RIGHT AND LEFT TURNS ARE PROVIDED FOR, OR THERE IS NO TURN PROVIDED FOR, THE CHEVRON STRIPING MAY SLOPE DOWNWARD IN BOTH DIRECTIONS FROM THE CENTER OF BARRICADE.



ELEVATION

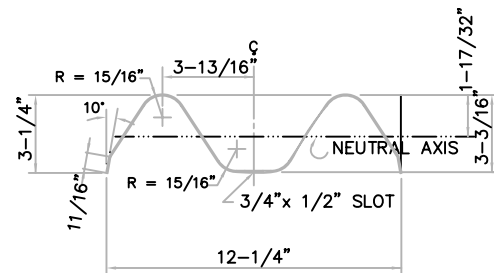
N.T.S.



NOTE: DIAGONAL RED REFLECTIVE TAPE SHALL BE APPLIED ON THE FACE OF ALL GUARD PANELS (THE FULL FACE OF THE PANEL SHALL BE COVERED).

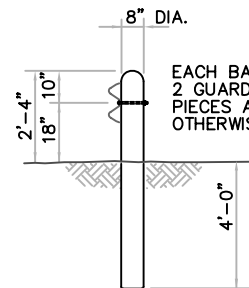
TAPE DETAIL

N.T.S.



METAL BEAM DETAIL

N.T.S.



POST DETAIL

N.T.S.

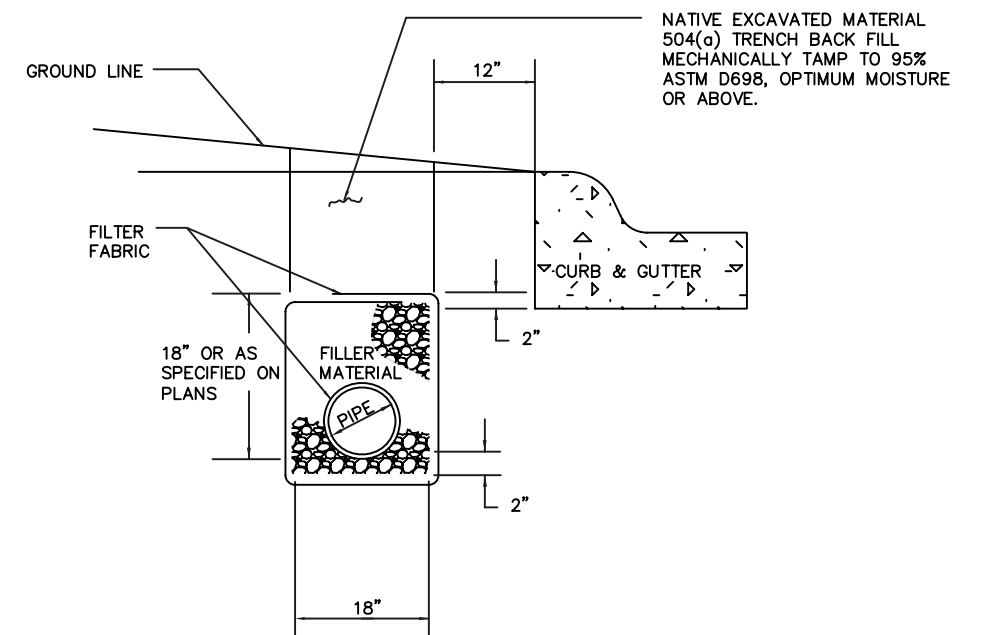
EACH BARRICADE SHALL CONSIST OF 2 GUARD FENCE PANELS, 2 TERMINAL PIECES AND POSTS - UNLESS OTHERWISE SPECIFIED.

ONE 5/8" BOLT W/LARGE DIA. WASHER - 7/8" DIA. HOLE IN POST (MIN.)

SUBDRAIN DETAIL

NOTES: FOR SUB DRAIN DETAIL

1. ALL SUBDRAIN PIPES TO BE 6" DIAMETER.
2. FILLER MATERIAL AROUND SUBDRAIN PIPES SHALL BE 3/4" CRUSHED STONE, NCTCOG 504.2.2.1 (a) "AGGREGATE GRADE 4".
3. SUBDRAIN PIPE MATERIAL SHALL BE PERFORATED PVC PIPE OR PERFORATED POLYETHYLENE PIPE ENCASED IN "FILTER FABRIC SLEEVE".
4. ALL SUBDRAINS SHALL BE INSTALLED AFTER PAVEMENT AND PRIOR TO SIDEWALK.
5. CLEANOUTS W/CONCRETE PADS (PER SHEET SS-2) SHALL BE PLACED AT 500' INTERVALS ALONG SUBDRAIN AND AT THE UPSTREAM END OF LINE.
6. CONNECTION TO INLET SHALL BE MADE WITH A SECTION OF 6" SCHEDULE 40 PVC PIPE INTO THE INLET SIDE WALL AT TIME OF INLET CONSTRUCTION. THE SUBDRAIN WILL THEN BE ADAPTED TO THE PERFORATED PIPE.



TYPICAL SECTION

N.T.S.

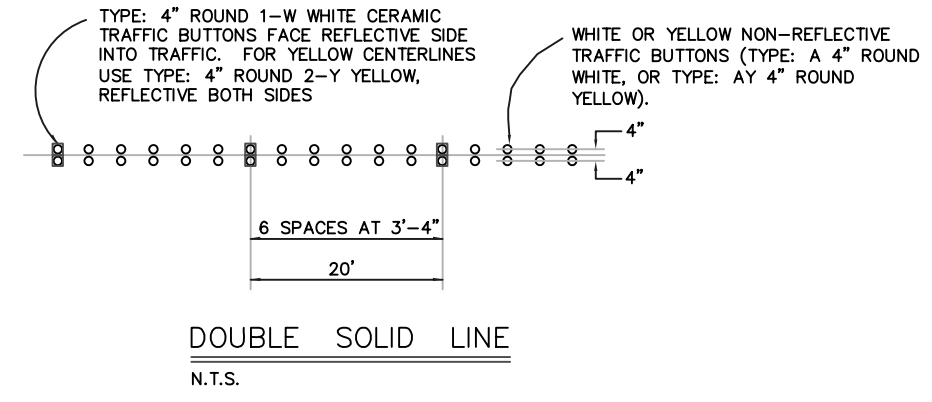
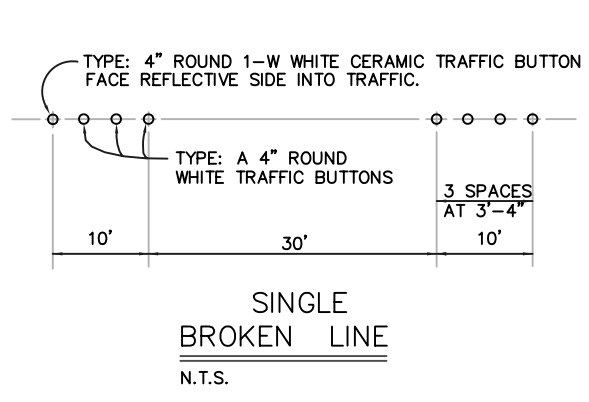
BARRICADE & SUBDRAIN DETAILS

CITY OF MANSFIELD
STANDARD CONSTRUCTION DETAILS

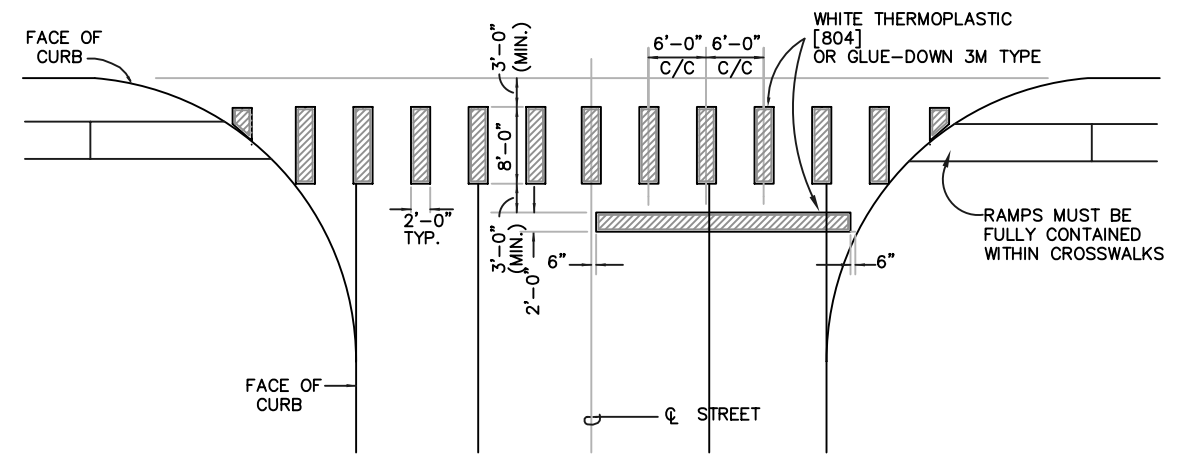
PAVING

DATE:
MAR. 2006

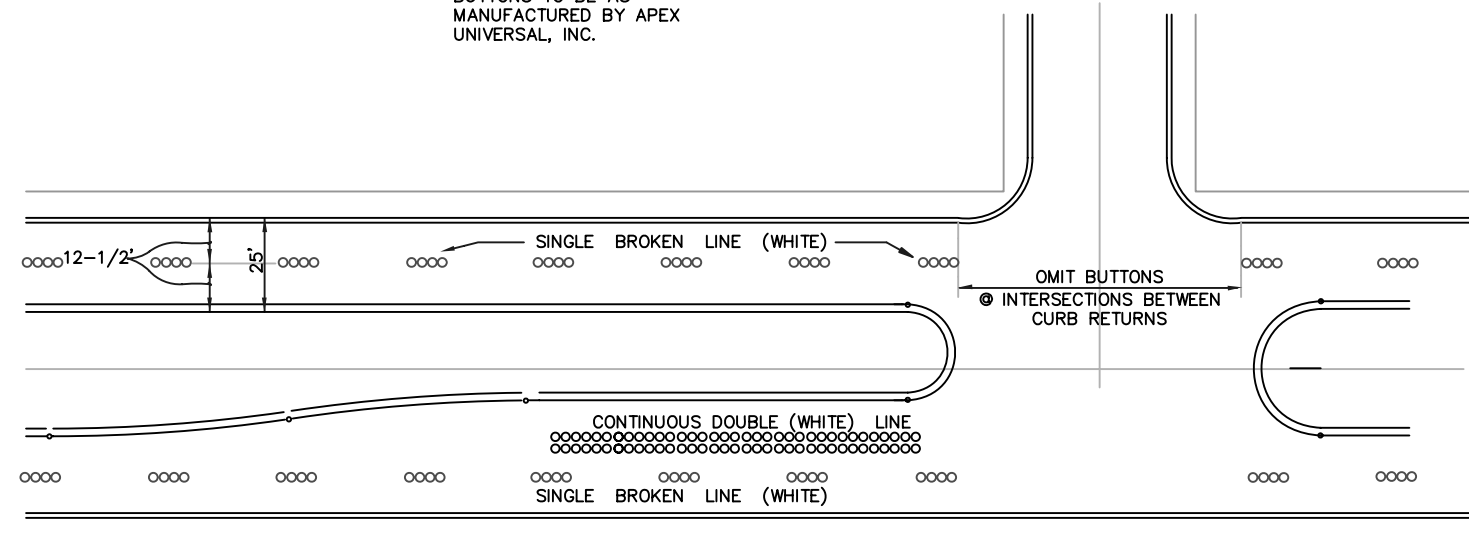
SHEET NO.
P-7



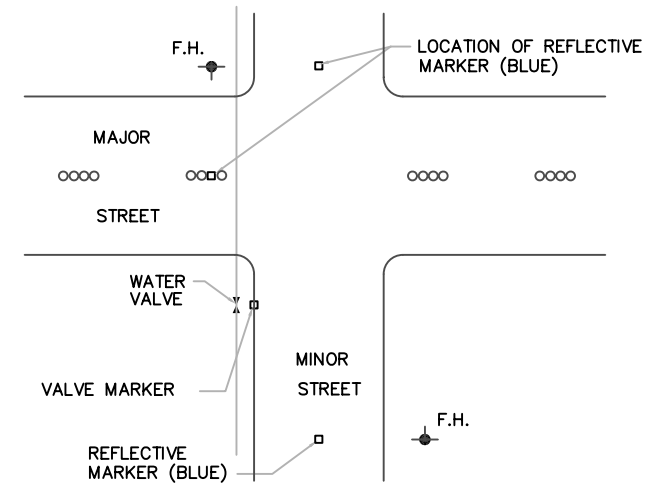
NOTE:
BUTTONS TO BE AS
MANUFACTURED BY APEX
UNIVERSAL, INC.



INTERSECTION CROSSWALK
N.T.S.

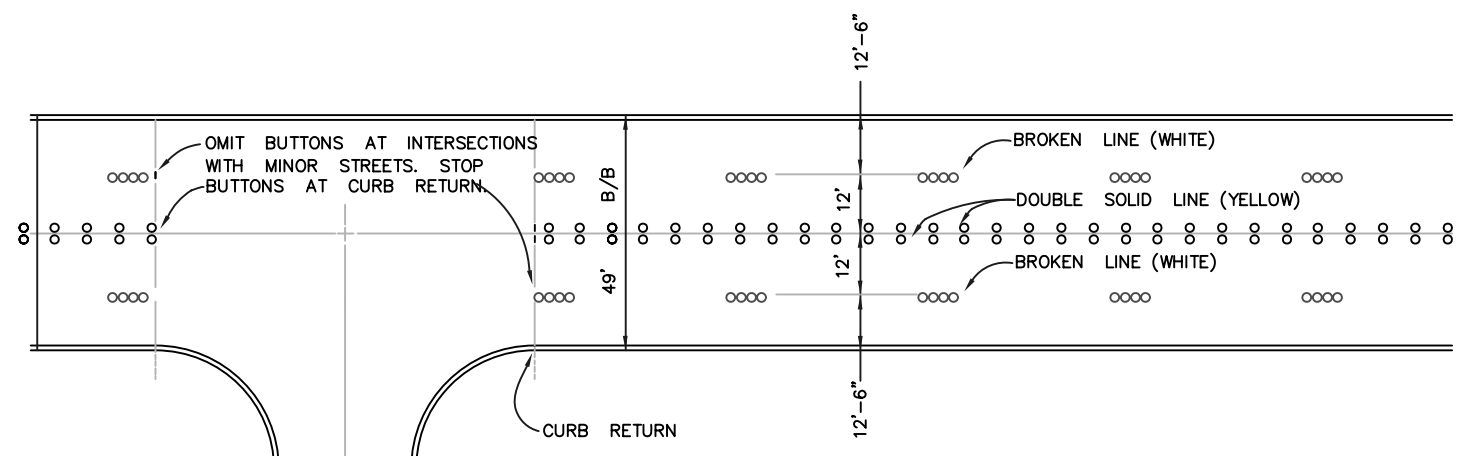


**TYPICAL BUTTON LAYOUT
FOR 4-LANE ARTERIAL SECTION**
N.T.S.



WATER APPURTENANCE MARKERS

- NOTES:**
1. EACH WATER SYSTEM VALVE LOCATED ADJACENT TO OR IN A CITY STREET SHALL RECEIVE A MARKER PLACED ON THE CURB AS CLOSE AS POSSIBLE TO THE VALVE.
 2. EACH LOCATION OF A FIRE HYDRANT SHALL RECEIVE A BLUE REFLECTORIZED MARKER LOCATED IN THE CENTER OF ANY STREET TO WHICH IT IS ADJACENT (2 FOR HYDRANTS ON STREET CORNERS).
 3. ALL BLUE FIRE HYDRANT MARKERS SHALL BE A CUBE CORNER TYPE REFLEX REFLECTOR MOLDED OF OPTIC GRADE PLASTIC, WITH A HOUSING OF HIGH IMPACT ABS PLASTIC, WITH A FILLER OF INERT THERMOSETTING RESINS. APEX UNIVERSAL, INC. TYPE: BB TWO WAY BLUE.



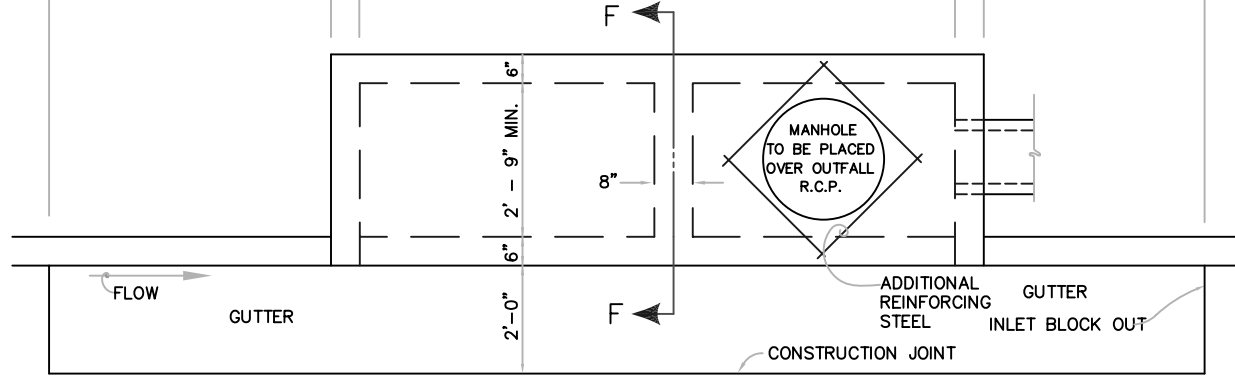
- NOTE:**
1. PAVEMENT PAINTS, MARKINGS, AND TRAFFIC BUTTONS WHERE APPROVED, TO BE IN CONFORMANCE WITH NCTCOG STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION "ITEM 804." PLACEMENT TO BE AS ILLUSTRATED IN CONSTRUCTION PLANS.
 2. DO NOT APPLY PAVEMENT MARKINGS UNTIL PAVEMENT SURFACE AND BUTTON LAYOUT HAS BEEN APPROVED BY ENGINEER.

**TYPICAL BUTTON LAYOUT
FOR 49' B/B STREET SECTION**
N.T.S.

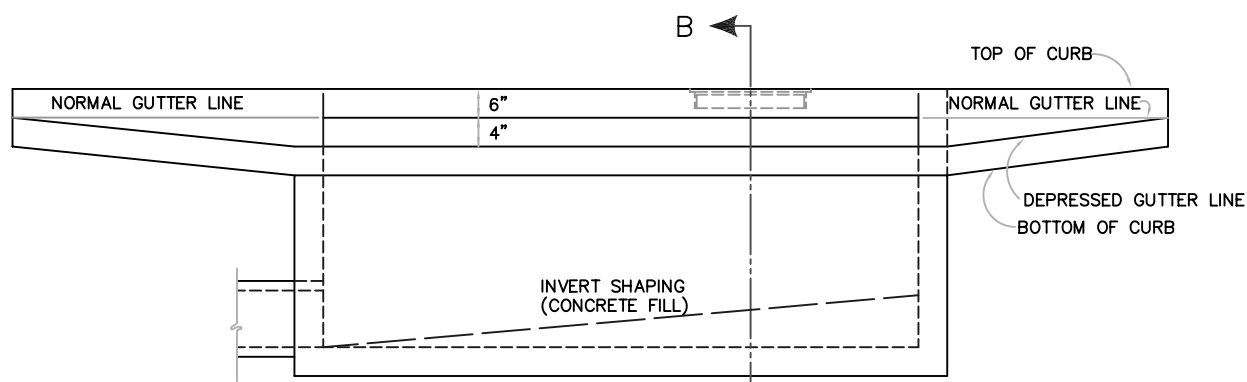
STRIPING / PAVEMENT MARKER DETAILS		
CITY OF MANSFIELD ENGINEERING DEPARTMENT		
PAVING	DATE: MAR. 2006	SHEET NO. P-8

LIMITS OF PAY FOR CURB INLET PAVEMENT QUANTITY TO BE COMPUTED AS IF NO BLOCK OUT OCCURS TO COMPENSATE FOR BLOCK OUT FORMING AND JOINT.

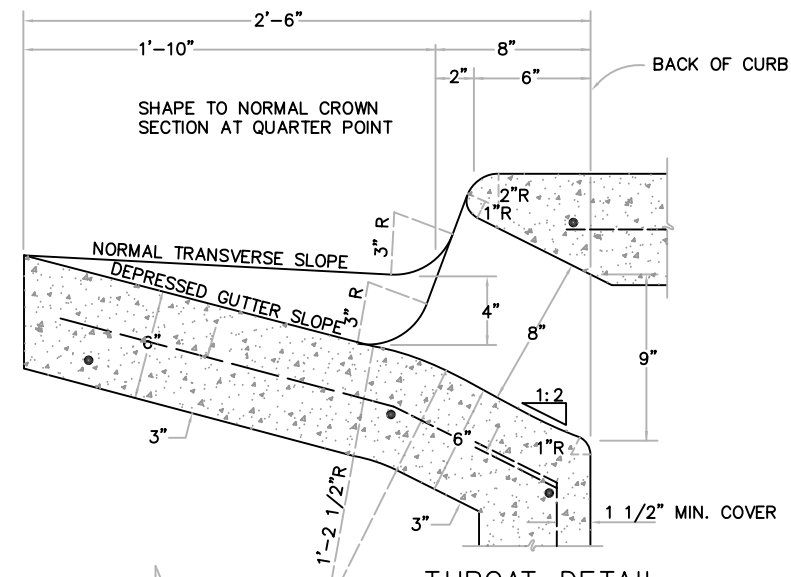
TRANSITION LENGTH: 6" 10'- 0", 15'- 0" OR 20'- 0" (SEE PLANS) 6" TRANSITION LENGTH: ON-GRADE INLET-8' UPSTREAM END LOW-POINT INLET-6'



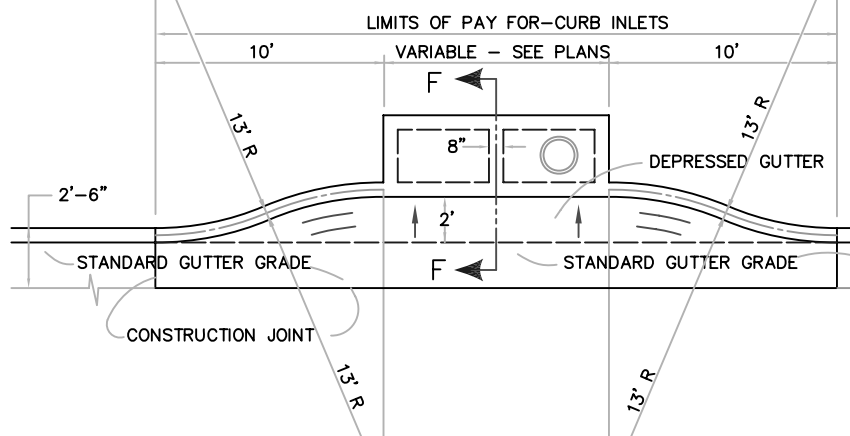
INLET PLAN



INLET ELEVATION



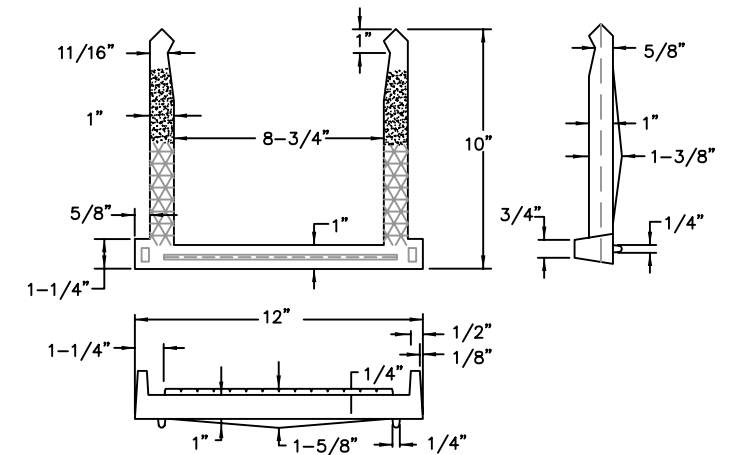
THROAT DETAIL



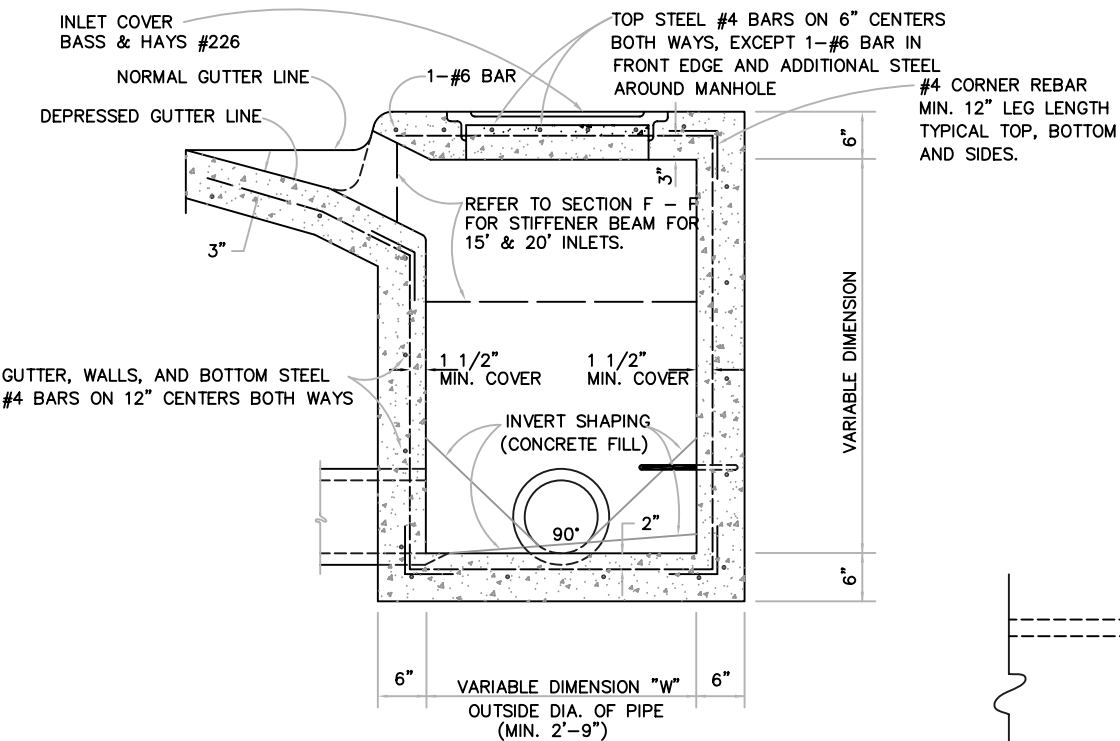
RECESSED CURB INLET PLAN

GENERAL NOTES:

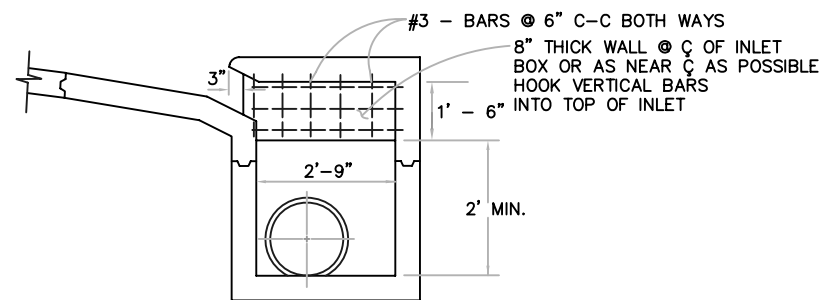
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2. ALL CONCRETE SHALL BE CLASS "C", (702.2.4.2). AGGREGATE SHALL CONSIST OF A MINIMUM OF 50% CRUSHED STONE (1" MAX). ALL CONCRETE PLACED SHALL CONTAIN SUFFICIENT AIR ENTRAINING AGENT TO YIELD 5% (± 1%) AIR CONTENT. ALL OTHER ADMIXTURES SHALL REQUIRE THE PERMISSION OF THE ENGINEERING DEPARTMENT.
3. ON CONCRETE STREETS ALL INLETS SHALL BE SEPARATED FROM THE PAVEMENT AND CURB BY BLOCKING OUT AROUND INLETS AS SHOWN.
4. ALL REINFORCING STEEL SHALL BE DEFORMED BARS (ASTM A-615 GRADE 60). REINFORCING STEEL SHALL BE PLACED WITH A MINIMUM OF 1-1/2" COVER.
5. WHERE REINFORCING BARS ARE SPLICED, A MINIMUM 30 DIAMETER LAP SHALL BE USED. MANUFACTURED BENDS OR FACTORY MADE "L" BARS SHALL BE USED IN ALL CORNERS, AND SHALL BE LONG ENOUGH TO PERMIT A MINIMUM OF A 30 DIAMETER SPLICE.
6. INLETS LARGER THAN 10' SHALL HAVE TWO (2) LIDS. ONE TO BE LOCATED OVER OUTFALL AND THE OTHER LOCATED ON THE OPPOSITE SIDE OF THE STIFFENER BEAM.
7. COVER IS A STANDARD CAST IRON LID AND RING WITH AN ATTACHED CHAIN EMBEDDED IN CONCRETE (BASS & HAYES 226).
8. PRE-CAST INLETS WILL NOT BE PERMITTED.



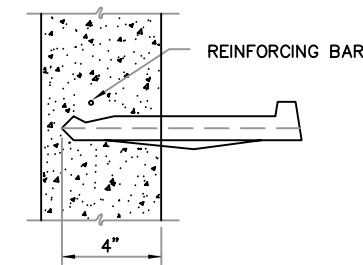
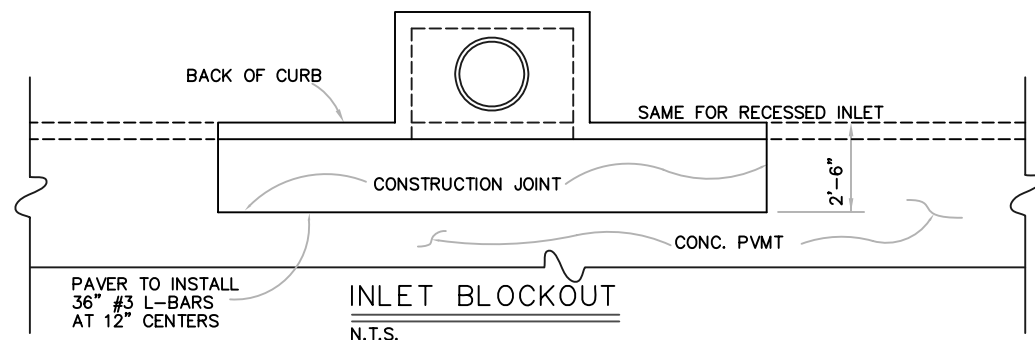
STEP DETAILS



SECTION B-B
STANDARD CURB INLET DETAIL



SECTION F-F
INLET MID BOX STIFFENER BEAM FOR 15', 20' & LARGER INLETS



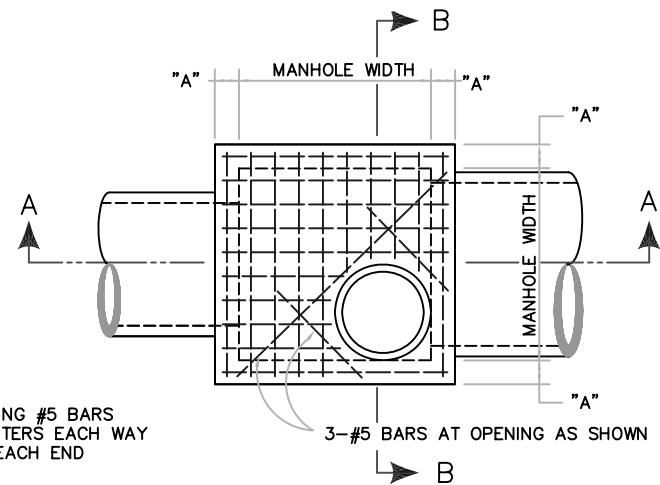
INSTALLATION

NOTE:

1. INLET AND STORM DRAIN STEPS SHALL BE AS MANUFACTURED BY M.A. INDUSTRIES, INC. OF PEACHTREE CITY, GA. OR APPROVED EQUAL. STEPS SHALL REQUIRE A STEEL REINFORCING BAR AS SHOWN IN DETAIL.
2. STEPS SHALL BE PLACED IN ALL INLETS OR STORM VAULTS WHERE THE DIMENSION FROM THE FLOW LINE TO THE TOP OF THE MANHOLE LID MEETS OR EXCEEDS 5'.
3. STEPS SHALL BE PLACED WITH A MAXIMUM VERTICAL SEPARATION OF 16".

INLET STEP DETAIL

CURB INLET DETAILS		
CITY OF MANSFIELD		
STANDARD CONSTRUCTION DETAILS		
STORM DRAIN	DATE: MAR. 2006	SHEET NO. SD-1



NOTE:
REINFORCING #5 BARS
@ 6" CENTERS EACH WAY
HOOKED EACH END

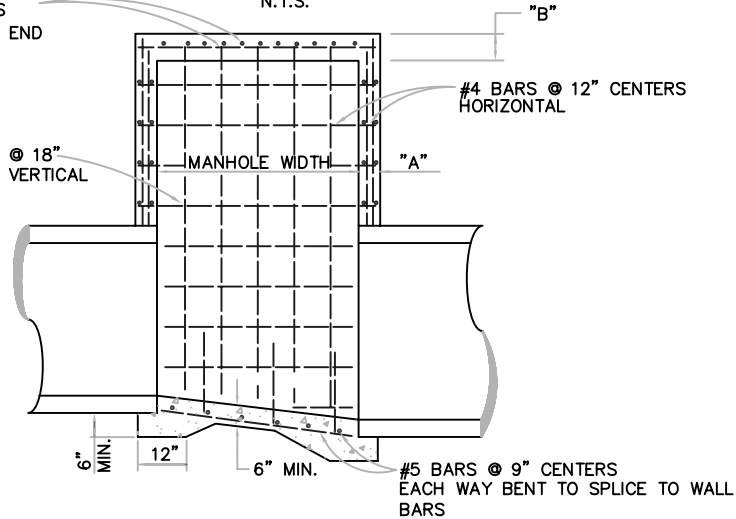
PLAN
N.T.S.

#5 BARS @ 6" CENTERS
EACH WAY HOOKED EA. END

#4 BARS @ 18"
CENTERS VERTICAL

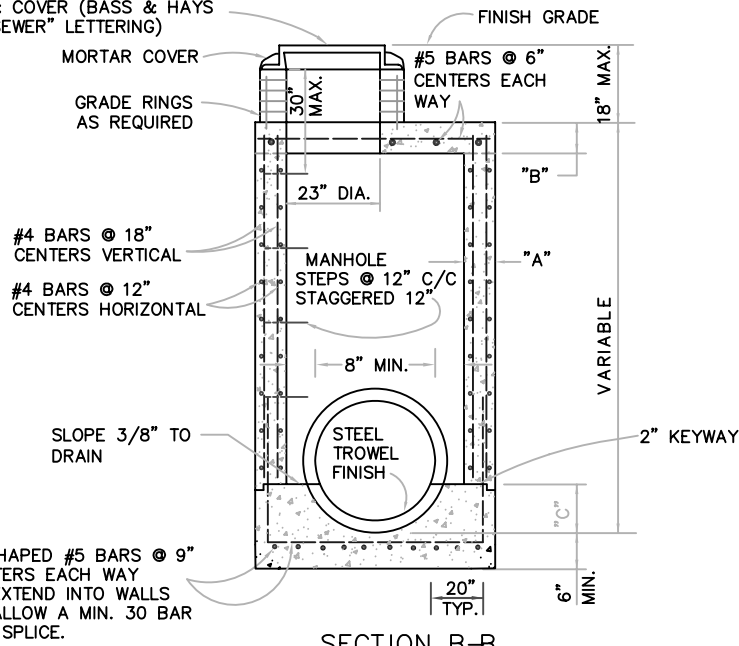
#4 BARS @ 12" CENTERS
HORIZONTAL

DIMENSIONS FOR SQUARE MANHOLES			
DIMENSION	MANHOLE WIDTH		
A	4'	5'	6'
B	8"	8"	9"
C	12"	18"	24"



SECTION A-A
N.T.S.

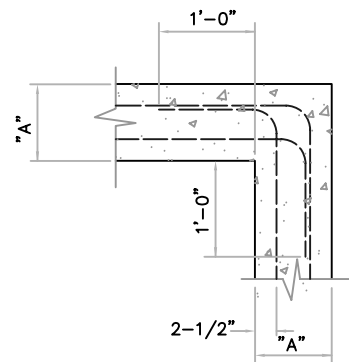
STD. MANHOLE RING & COVER (BASS & HAYS #300-24 W/"STORM SEWER" LETTERING)



SECTION B-B

STANDARD SQUARE MANHOLE
54" DIAMETER & SMALLER PIPES

N.T.S.

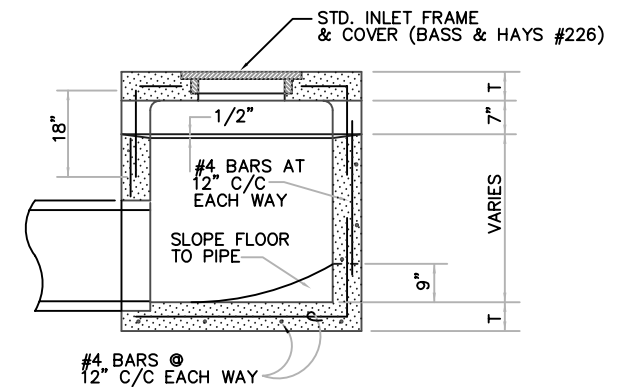


TYPICAL CORNER
DETAIL
(PLAN VIEW)

N.T.S.

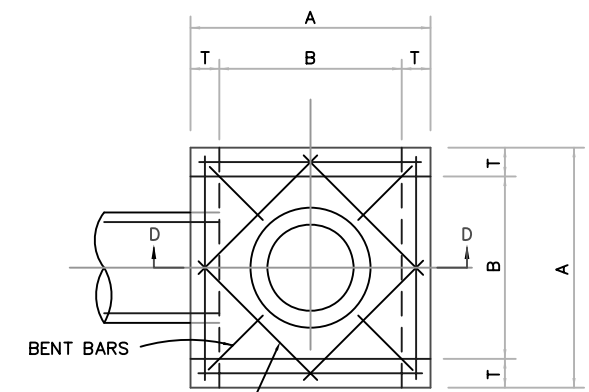
GENERAL NOTES:

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2. ALL REINFORCING STEEL SHALL BE DEFORMED BARS (ASTM A-615 GRADE 60). REINFORCING STEEL SHALL BE PLACED WITH A MINIMUM OF 1-1/2" COVER FOR #5 BARS AND SMALLER.
3. WHERE REINFORCING BARS ARE SPLICED, A MINIMUM 30 BAR DIAMETER LAP SPLICE SHALL BE USED. MANUFACTURED BENDS OR FACTORY MADE "L" BARS SHALL BE USED IN ALL CORNERS, AND SHALL BE LONG ENOUGH TO PERMIT A MINIMUM OF 30 BAR DIAMETER LAP SPLICE.
4. ALL CONCRETE SHALL BE CLASS "C", (702.2.4.2). AGGREGATE SHALL CONSIST OF A MINIMUM OF 50% CRUSHED STONE (1" MAX.). ALL CONCRETE PLACED SHALL CONTAIN SUFFICIENT AIR ENTRAINING AGENT TO YIELD 5% (± 1%) AIR CONTENT. ALL OTHER ADMIXTURES SHALL REQUIRE THE PERMISSION OF THE ENGINEERING DEPARTMENT.
5. DROP INLET COVER (BASS & HAYS 226) LID SHALL BE ATTACHED WITH A CHAIN EMBEDDED IN CONCRETE.
6. PRE-CAST INLETS OR MANHOLES WILL NOT BE PERMITTED.



SECTION D - D
N.T.S.

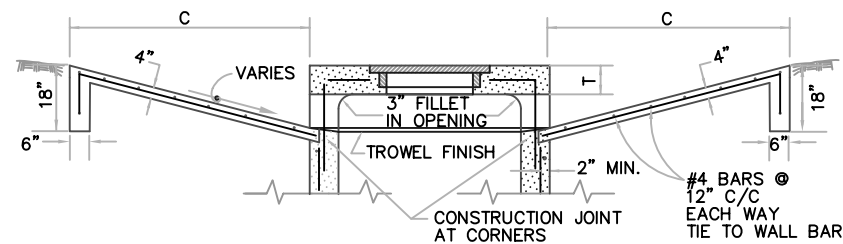
DIMENSIONS FOR DROP INLET				
INLET SIZE	A	B	C	T
2' X 2'	36"	24"	2'	6"
3' X 3'	48"	36"	3'	6"
4' X 4'	60"	48"	4'	6"



PLAN

NOTE:
ALL REINFORCING IN TOP
TO BE #5 BARS @ 6"
CENTERS

DROP INLET
N.T.S.

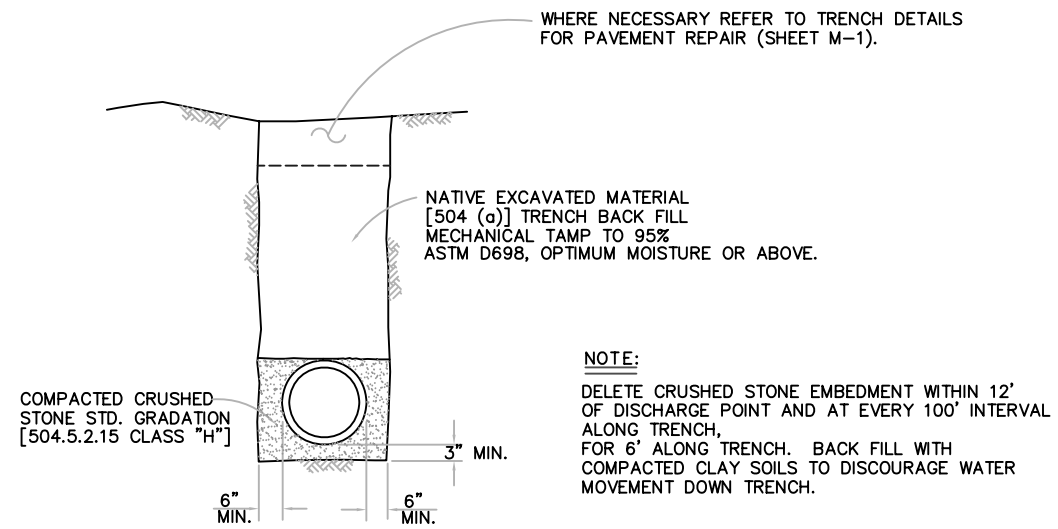


DROP INLET APRON

N.T.S.

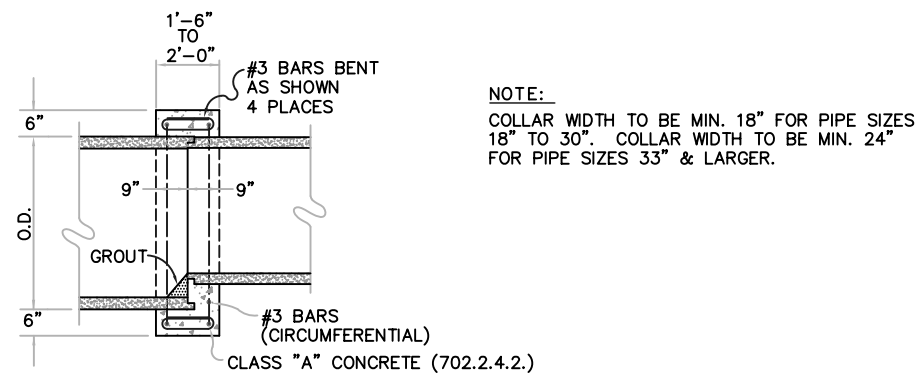
* CHAMFER ALL EXPOSED EDGES 3/4"

MANHOLE AND DROP INLET DETAILS		
CITY OF MANSFIELD STANDARD CONSTRUCTION DETAILS		
STORM DRAIN	DATE: MAR. 2006	SHEET NO. SD-2



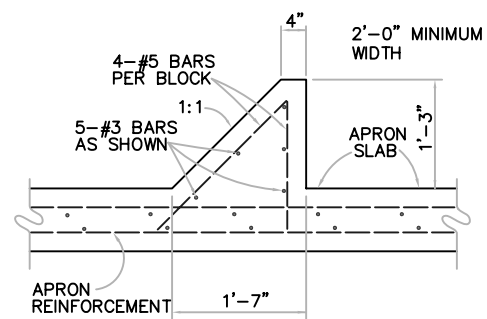
STORM DRAIN PIPE EMBEDMENT DETAIL

N.T.S.



CONCRETE COLLAR DETAIL

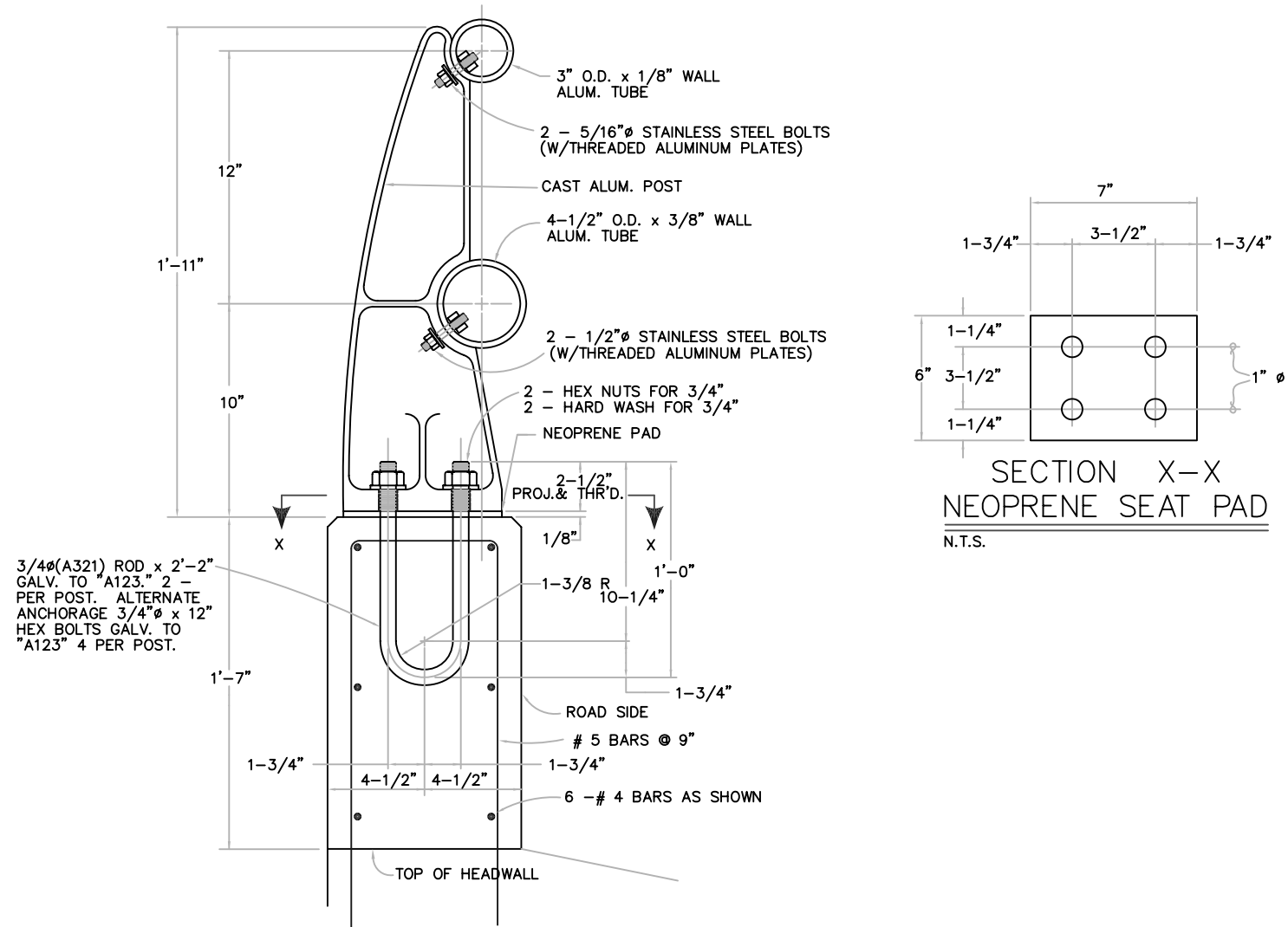
N.T.S.



BAFFLE DETAIL AT CULVERT OUTLET

N.T.S.

TRENCH, COLLAR & MISC. DETAILS		
CITY OF MANSFIELD		
STANDARD CONSTRUCTION DETAILS		
STORM DRAIN	DATE: MAR. 2006	SHEET NO. SD-3



CULVERT RAIL DETAIL
N.T.S.

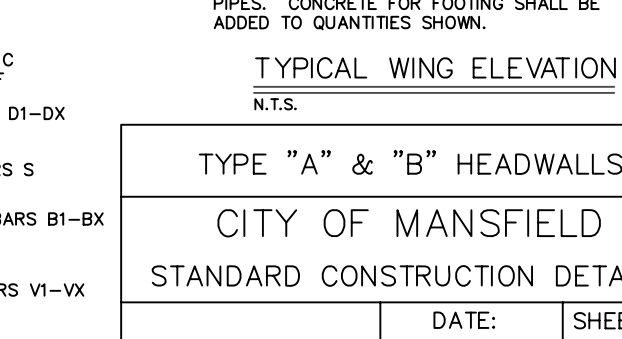
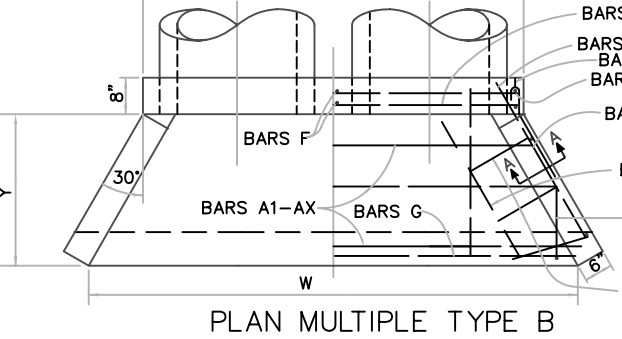
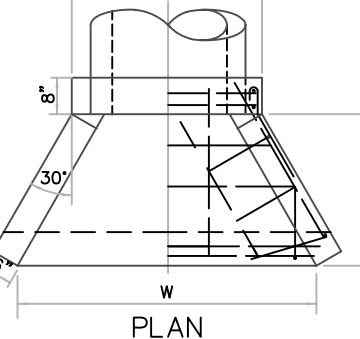
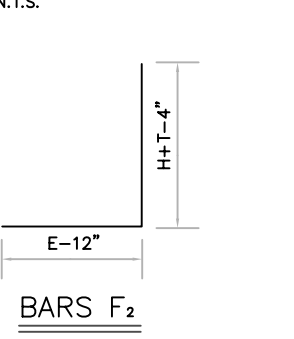
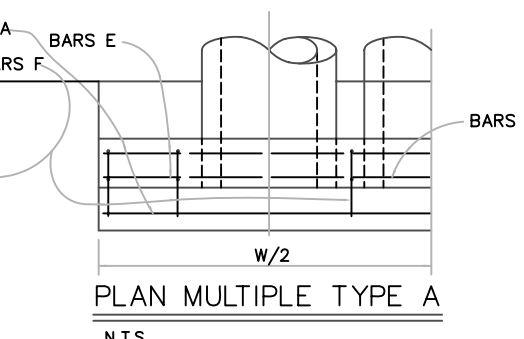
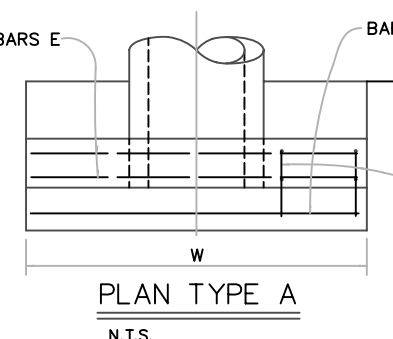
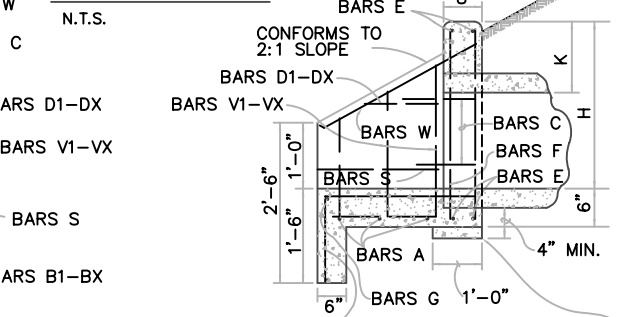
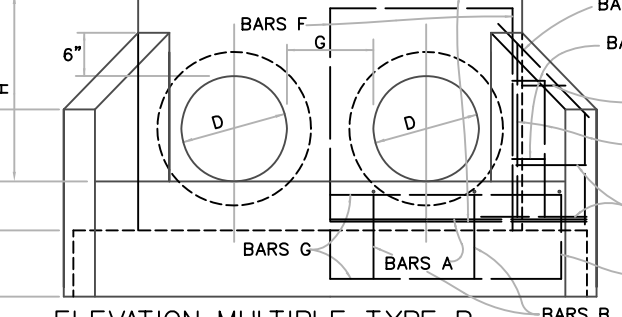
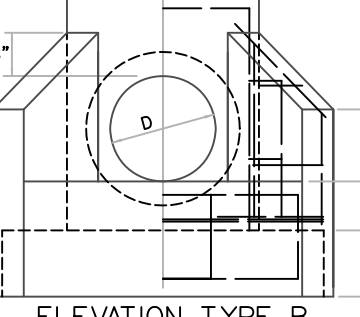
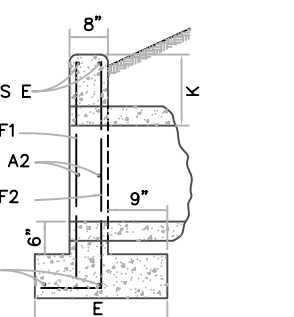
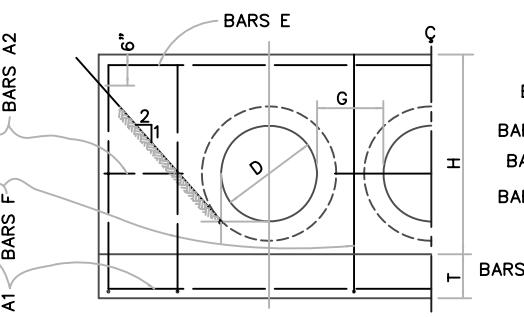
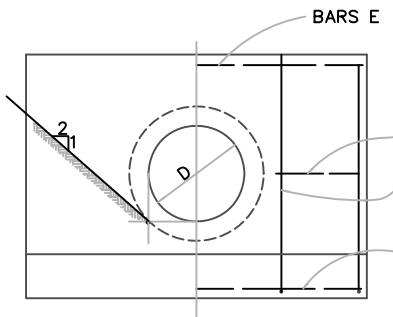
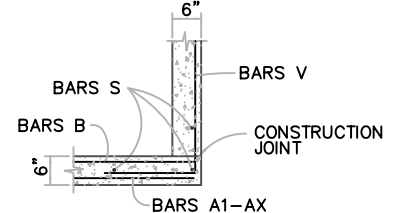
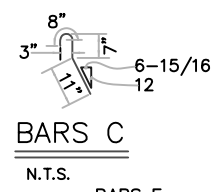
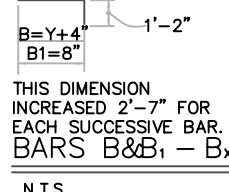
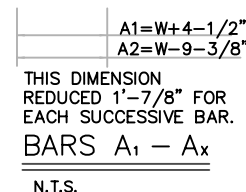
NOTE: MAX. POST
SPACING 8'-4"

CULVERT RAIL DETAILS		
CITY OF MANSFIELD STANDARD CONSTRUCTION DETAILS		
STORM DRAIN	DATE: MAR. 2006	SHEET NO. SD-4

NO. OF PIPES D.I.A.M. IN PIPES		TABLE OF DIMENSIONS AND QUANTITIES FOR TWO TYPE A HEADWALLS																				TOTAL QUANTITIES STEEL LBS CONC CY		NO. OF PIPES D.I.A.M. IN PIPES		TABLE OF DIMENSIONS AND QUANTITIES FOR TWO TYPE B HEADWALLS																				TOTAL QUANTITIES STEEL LBS CONC CY																																																																														
		TABLE OF DIMENSIONS										REINFORCING STEEL AND QUANTITIES FOR TWO HEADWALLS														TABLE OF DIMENSIONS										REINFORCING STEEL AND QUANTITIES FOR TWO HEADWALLS																																																																																								
		G	K	T	E	H	W	Lgth	Wt	No	#	BARS A1 #3 @ 18"±	BARS A2 #3 @ 18"±	BARS E #4 ~ #5	BARS F1 #4 @ 12"±	BARS F2 #4 @ 12"±	Lgth	Wt	No	#	G					K	X	H	Y	W	Lgth	Wt	No	#	BARS A1 - AX #4 @ 12"±	BARS B #3 @ 18"±	BARS B1 - BX #3 @ 18"±	C=2'-0" #4 @ 12"±	BARS D1 - DX #3 @ 12"±	BARS E #4 ~ #5	BARS F	BARS G #4 ~ #5	BARS S 12 ~ #4	BARS V1 - VX #4 @ 12"±	BARS W #4 ~ #5			Lgth	Wt	No	#																																																																									
1	12"	10"	12"	9"	1'-9"	2'-6"	7'-0"	8'-8"	10	8	2'-6"	8	6'-8"	28	12	#4	2'-11"	23	12	#4	3'-8"	29	98	1.48	1	12"	10"	12"	9"	1'-9"	2'-6"	7'-0"	8'-8"	10	8	2'-6"	8	6'-8"	28	12	#4	2'-11"	23	12	#4	3'-8"	29	98	1.48	1	12"	10"	12"	9"	1'-9"	2'-6"	7'-0"	8'-8"	10	8	2'-6"	8	6'-8"	28	12	#4	2'-11"	23	12	#4	3'-8"	29	98	1.48	1	12"	10"	12"	9"	1'-9"	2'-6"	7'-0"	8'-8"	10	8	2'-6"	8	6'-8"	28	12	#4	2'-11"	23	12	#4	3'-8"	29	98	1.48	1	12"	10"	12"	9"	1'-9"	2'-6"	7'-0"	8'-8"	10	8	2'-6"	8	6'-8"	28	12	#4	2'-11"	23	12	#4	3'-8"	29	98	1.48

GENERAL NOTES:

- ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4".
- REINFORCING STEEL SHALL BE PLACED WITH THE CENTER OF THE OUTSIDE LAYER OF BARS 2" FROM THE SURFACE OF THE CONCRETE. TOTAL QUANTITIES INCLUDE ONE 30 DIAMETER LAP FOR ALL BARS OVER 60'-0" IN LENGTH.
- SEE SHEET SD-6, NOTE 1 FOR CONCRETE REQUIREMENTS.
- PRE-CAST HEADWALLS WILL NOT BE ALLOWED FOR PIPE SIZES LARGER THAN 30".



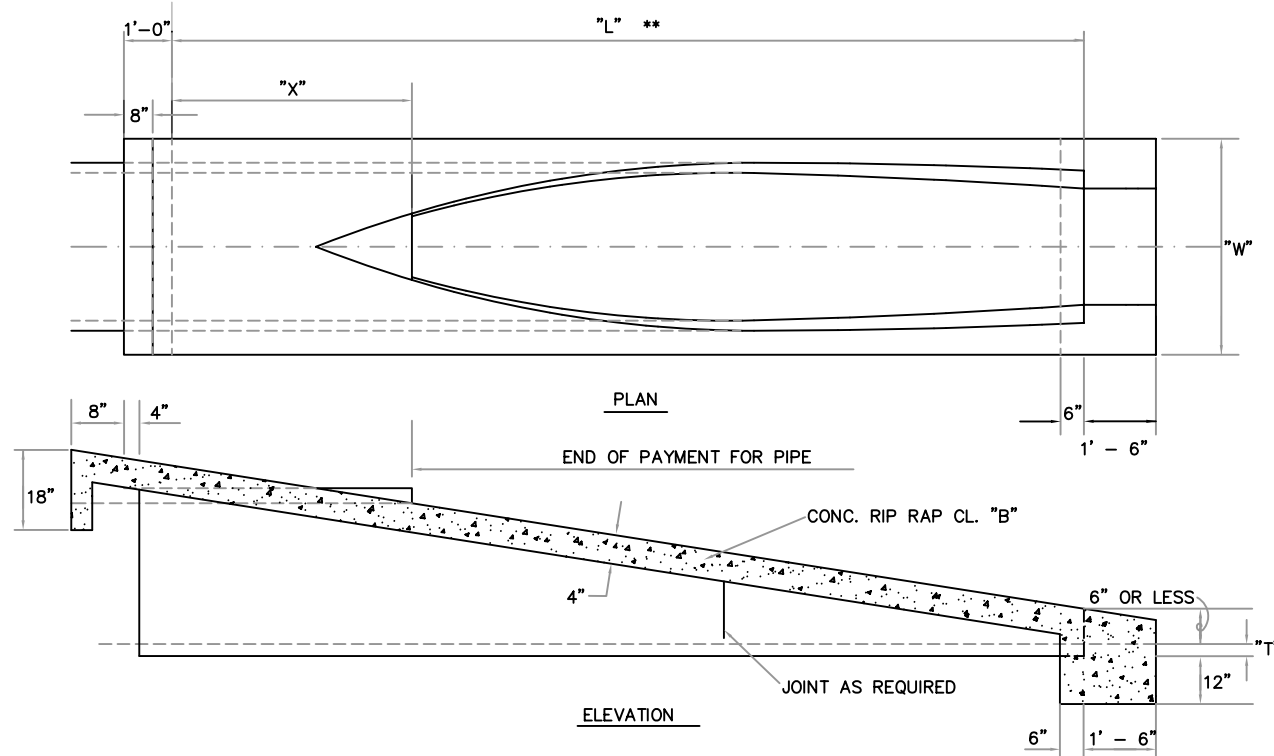
PROVIDE A 12" FOOTING AS SHOWN WHERE REQUIRED TO MAINTAIN 4" MIN. COVER FOR PIPES. CONCRETE FOR FOOTING SHALL BE ADDED TO QUANTITIES SHOWN.

* CONCRETE QUANTITIES INCREASE SLIGHTLY FOR METAL PIPE INSTALLATIONS.

GENERAL NOTES:

1. ALL CONCRETE SHALL BE CLASS "C" (702.2.4.2) CONTAINING A MINIMUM OF 5 1/2 SACKS OF TYPE 1 CEMENT PER YARD. AGGREGATE SHALL CONSIST OF A MINIMUM OF 50% CRUSHED STONE (1" MAX.). ALL CONCRETE PLACED SHALL CONTAIN SUFFICIENT AIR ENTRAINING AGENT TO YIELD 5% (±1%) AIR CONTENT. ALL OTHER ADMIXTURES SHALL REQUIRE THE PERMISSION OF THE ENGINEERING DEPARTMENT.

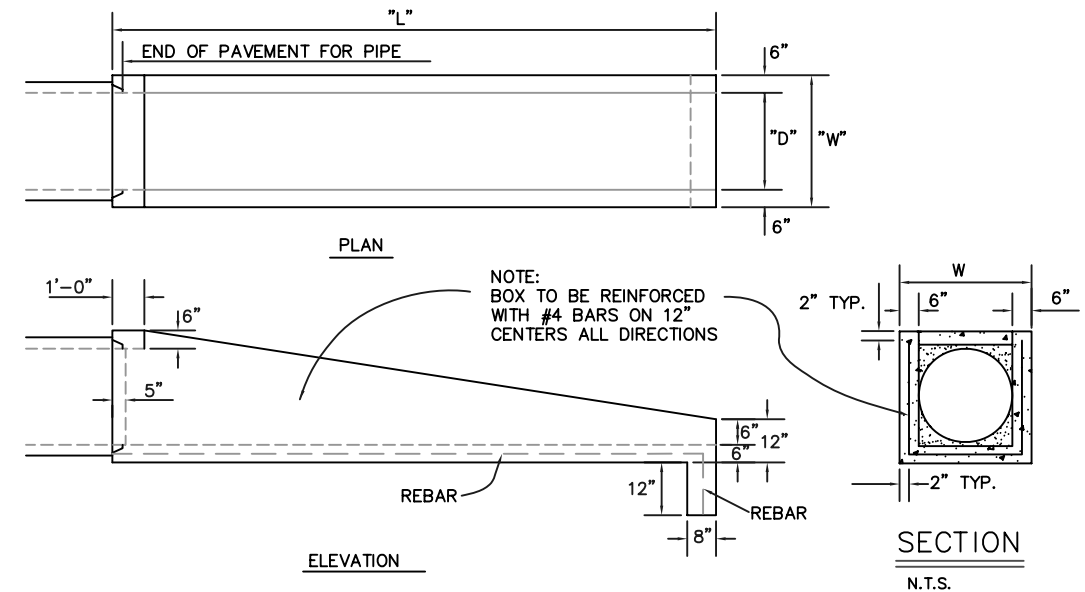
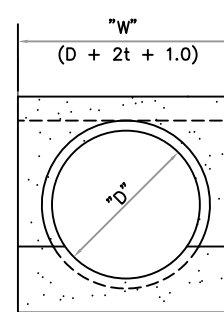
** BASED ON 6" DROP AT END OF PIPE.



SLOPED CONCRETE PIPE

N.T.S.
OPTION ONE

"D"	SLOPE	"T" *	"W" (MIN.)	"L"	"X"
18"	3:1	2'-1/4"	2' 10-1/2"	5' 3-3/4"	1' - 9"
18"	4:1	2'-1/4"	2' 10-1/2"	7' - 9"	3' - 0"
18"	6:1	2'-1/4"	2' 10-1/2"	10' 1-1/2"	3' - 0"
21"	3:1	2'-1/2"	3' - 2"	5' - 9"	1' 4-1/2"
21"	4:1	2'-1/2"	3' - 2"	8' - 4"	2' - 6"
21"	6:1	2'-1/2"	3' - 2"	11' - 0"	2' - 3"
24"	3:1	3"	3' - 6"	7' - 6"	3' - 0"
24"	4:1	3"	3' - 6"	8' - 0"	2' - 0"
24"	6:1	3"	3' - 6"	12' - 0"	3' - 0"
27"	3:1	3'-1/4"	3' 9-1/2"	7' 10-1/2"	2' 7-1/2"
27"	4:1	3'-1/4"	3' 9-1/2"	10' - 0"	3' - 0"
27"	6:1	3'-1/4"	3' 9-1/2"	15' - 0"	4' - 6"
30"	3:1	3'-1/2"	4' - 1"	8' - 3"	2' - 3"
30"	4:1	3'-1/2"	4' - 1"	10' - 6"	2' - 6"
30"	6:1	3'-1/2"	4' - 1"	15' - 9"	3' - 9"

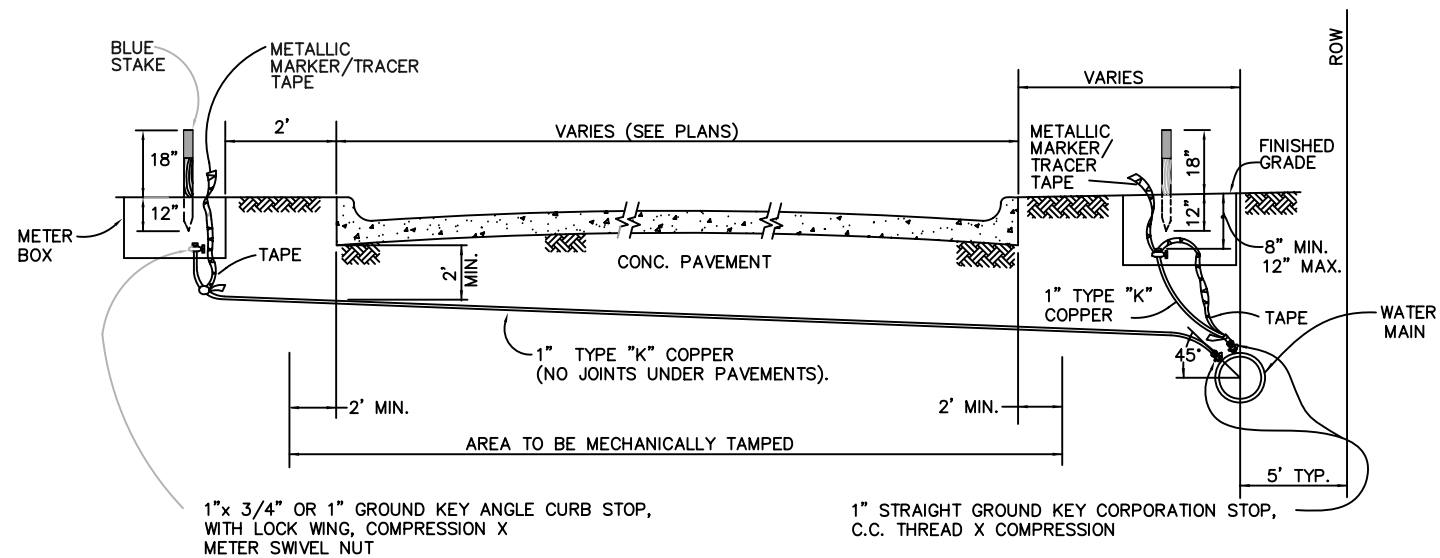


SLOPED CONCRETE BOX

N.T.S.
OPTION TWO

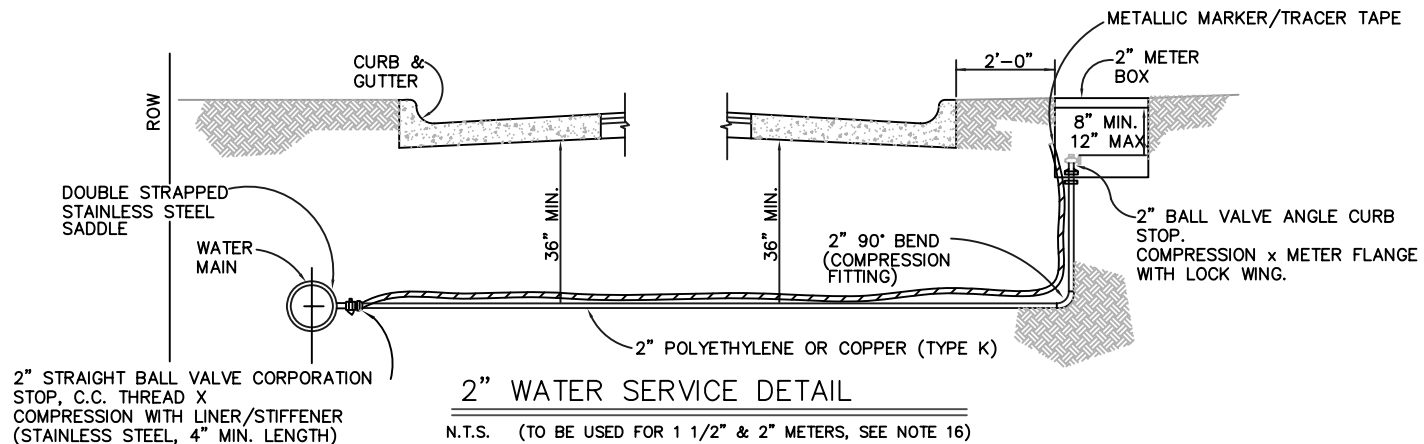
"D"	SLOPE	"W"	"L"
18"	3:1	2'-6"	4'6-3/4"
18"	4:1	2'-6"	5'-9"
18"	6:1	2'-6"	8'1-1/2"
21"	3:1	2'-9"	5'4-1/2"
21"	4:1	2'-9"	6'-10"
21"	6:1	2'-9"	9'-9"
24"	3:1	3'-0"	6'-3"
24"	4:1	3'-0"	8'-0"
24"	6:1	3'-0"	11'-6"
27"	3:1	3'-3"	7'0-3/4"
27"	4:1	3'-3"	9'-1"
27"	6:1	3'-3"	13'1-1/2"
30"	3:1	3'-6"	7'10-1/2"
30"	4:1	3'-6"	10'-2"
30"	6:1	3'-6"	14'-9"

TYPE "P" HEADWALLS		
CITY OF MANSFIELD		
STANDARD CONSTRUCTION DETAILS		
STORM DRAIN	DATE: MAR. 2006	SHEET NO. SD-6



1" WATER SERVICE DETAIL

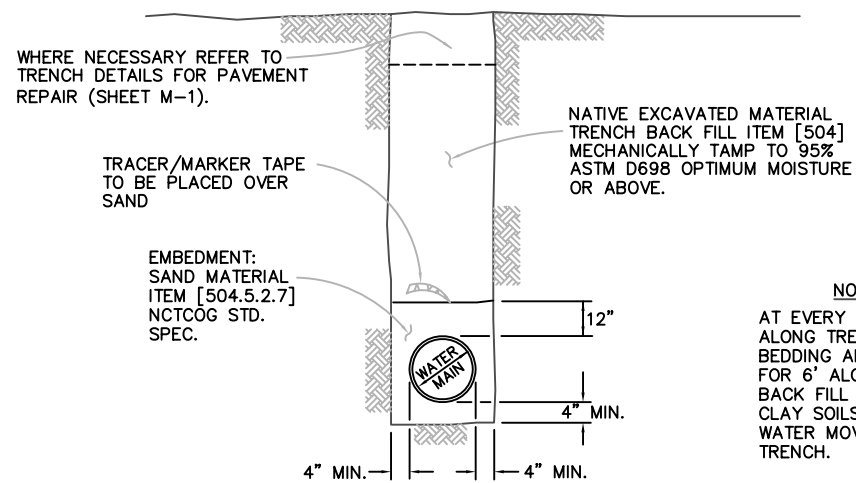
N.T.S. (TO BE USED FOR 3/4" & 1" METER, SEE NOTE 15)



2" WATER SERVICE DETAIL

N.T.S. (TO BE USED FOR 1 1/2" & 2" METERS, SEE NOTE 16)

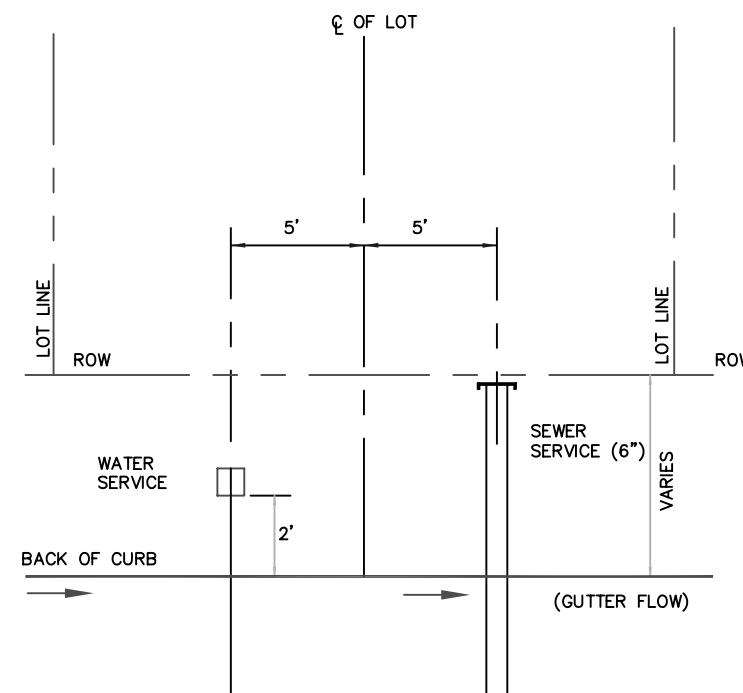
5' TYP.



WATER MAIN PIPE TYPICAL EMBEDMENT DETAIL

N.T.S.

NOTE:
AT EVERY 100' INTERVAL ALONG TRENCH, DELETE BEDDING AND EMBEDMENT FOR 6' ALONG TRENCH. BACK FILL WITH COMPACTED CLAY SOILS TO DISCOURAGE WATER MOVEMENT DOWN TRENCH.



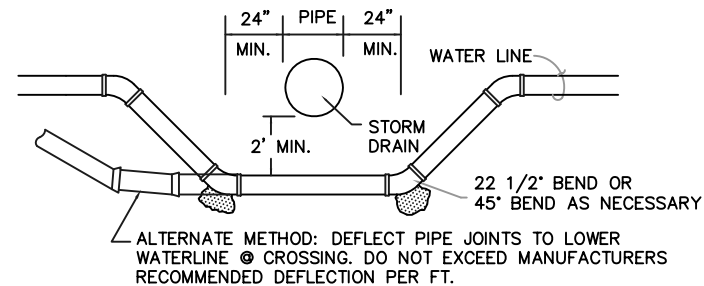
SERVICE LOCATION DETAIL

N.T.S.

GENERAL NOTES:

1. ALL CONSTRUCTION MATERIALS, METHODS, AND PLACEMENTS NOT DETAILED BELOW SHALL MEET OR EXCEED THE STANDARD SPECIFICATIONS OF THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS, OCTOBER 2004 EDITION, UNLESS SUPERSEDED BY CITY OF MANSFIELD STANDARD SPECIFICATIONS OR MATERIAL TESTING POLICIES.
2. ALL WATER MAINS TO BE P.V.C. AWWA C-900 OR C-909, CLASS 150, DR-18 INSTALLED W/METALLIC MARKER TAPE LABELED "WATERLINE BELOW".
3. BEVELED END OF PIPE WILL BE REMOVED WHEN USED IN MJ FITTING.
4. ALL FITTINGS TO BE MJ UNLESS OTHERWISE NOTED. ALL VERTICAL BENDS TO BE RESTRAINED W/RETAINER GLANDS. HORIZONTAL BENDS OR FITTINGS TO BE RESTRAINED AS NEEDED PER ENGINEER/INSPECTOR.
5. ALL 10" AND SMALLER WATER MAINS WILL BE HELD TO A MINIMUM COVER OF 42" UNLESS OTHERWISE BE SET BY THE ENGINEERING DEPARTMENT. 12" MAINS AND LARGER SHALL FOLLOW PLAN GRADE & PROFILE OF APPROVED CONSTRUCTION PLAN.
6. SERVICE LOCATION SHALL BE STAKED BY SURVEYOR PRIOR TO THE INSTALLATION OF ANY WATER SERVICES AND OR METER BOXES.
7. STORAGE: P.V.C. WATER PIPE IS ALLOWED TO BE STORED A MAXIMUM OF SIX (6) MONTHS WITHOUT COVER. THEREAFTER ALL PIPES SHOULD BE COVERED OR KEPT AWAY FROM SUN LIGHT AND PROTECTED FROM OTHER ELEMENTS.
8. ALL IRON FITTINGS, INCLUDING FIRE HYDRANTS AND VALVES, SHALL BE POLY WRAPPED.
9. EPOXY COATED TAPPING SADDLES SHALL BE USED. 1" SADDLES WILL HAVE SINGLE STAINLESS STEEL STRAP AND 2" WILL HAVE DOUBLE STAINLESS STEEL STRAP. GASKET ON SADDLE TO BE FLAT, NO O-RINGS WILL BE PERMITTED. O.D. OF SADDLE SHALL NOT BE LARGER THAN O.D. OF PIPE.
10. ALL TAPS LARGER THAN 2" WILL BE MADE USING TAPPING SLEEVES, NOT SADDLES.
11. TAPS WILL BE A MINIMUM OF 2' APART WITH TAPS NO CLOSER THAN 1' TO END OF PIPE. CUTTER FOR TAPS TO BE DOUBLE SLOTTED TYPE.
12. IT IS THE RESPONSIBILITY OF THE DEVELOPER TO FURNISH AND INSTALL METER BOXES AS APPROVED BY THE ENGINEERING DEPARTMENT.
13. METER BOXES WILL NOT BE PERMITTED IN DRIVEWAYS OR SIDEWALKS EXCEPT FOR COMMERCIAL BUILDING METERS AS APPROVED BY ENGINEERING DEPARTMENT. WHEN METER IS ALLOWED IN CONCRETE A TRAFFIC RATED BOX SHALL BE USED AND BOLLARDS TO BE PLACED AROUND METER FOR PROTECTION WHERE DIRECTED BY ENGINEER.
14. METER BOXES SHALL HAVE A 2' MIN. SPACING FROM CURBS, DRIVEWAYS, MAIL BOXES, ETC.
15. ALL 3/4" WATER SERVICES SHALL BE MADE BY USING 1" CORPORATION STOP, 1" SADDLE, 1" COPPER, AND 1"X 3/4" ANGLE CURB STOP.
16. 1 1/2" WATER SERVICES SHALL BE MADE BY USING ALL 2" PARTS. THE 1 1/2" METER WILL BE SET ON A 2" ANGLE CURB STOP.
17. ALL TAPPING VALVES SHALL BE BLOCKED PRIOR TO MOUNTING TAPPING MACHINE.
18. SIZE ON SIZE TAPS SHALL NOT BE PERMITTED ON AC PIPE.
19. SEE SHEET MS-1 AND MS-2 FOR APPROVED PARTS LIST.
20. ALL WATER SERVICES SHALL HAVE NO JOINTS OR SPLICES UNDER PAVEMENT.

WATER SERVICE, GENERAL NOTES, & TRENCH DETAILS		
CITY OF MANSFIELD		
STANDARD CONSTRUCTION DETAILS		
WATER	DATE: MAR. 2006	SHEET NO. W-1

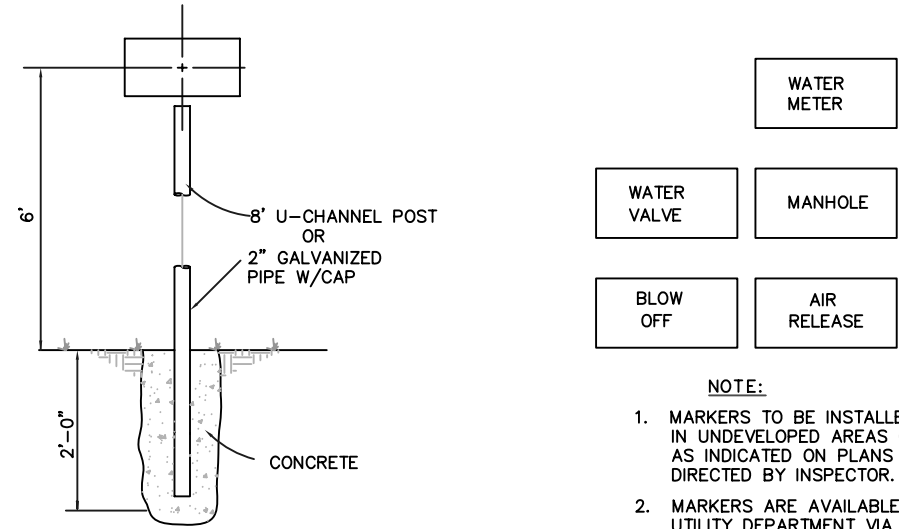


WATER LINES LOWERING

N.T.S.

NOTES:

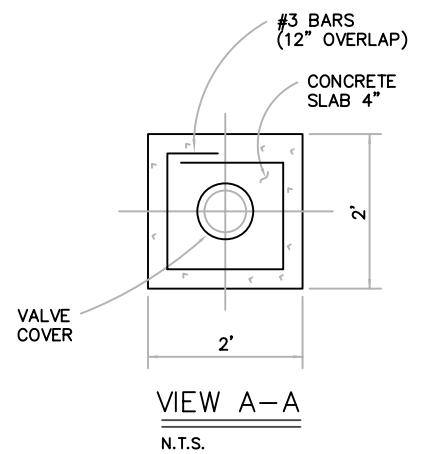
1. REFER TO CONSTRUCTION PLANS FOR TOP OF WATER LINE ELEVATION AT CROSSING.
2. REFER TO CONSTRUCTION PLANS FOR CROSSING DETAILS FOR 12" AND LARGER PIPES.
3. ALL JOINTS TO BE RESTRAINED WITH RETAINER GLANDS.



MARKER INSTALLATION DETAIL

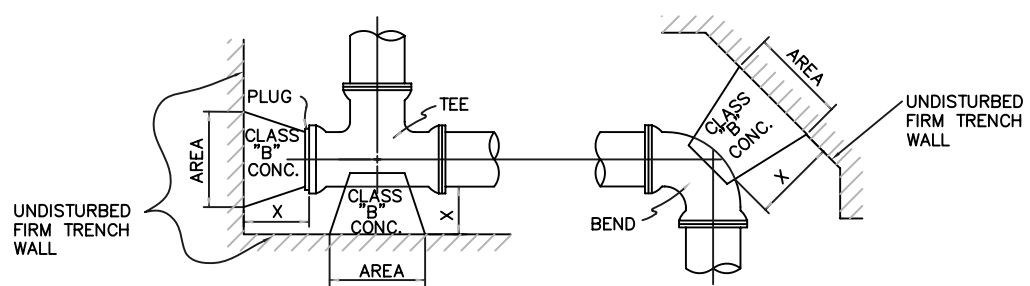
N.T.S.

- NOTE:**
1. MARKERS TO BE INSTALLED IN UNDEVELOPED AREAS OR AS INDICATED ON PLANS OR AS DIRECTED BY INSPECTOR.
 2. MARKERS ARE AVAILABLE FROM UTILITY DEPARTMENT VIA INSPECTOR.



VIEW A-A

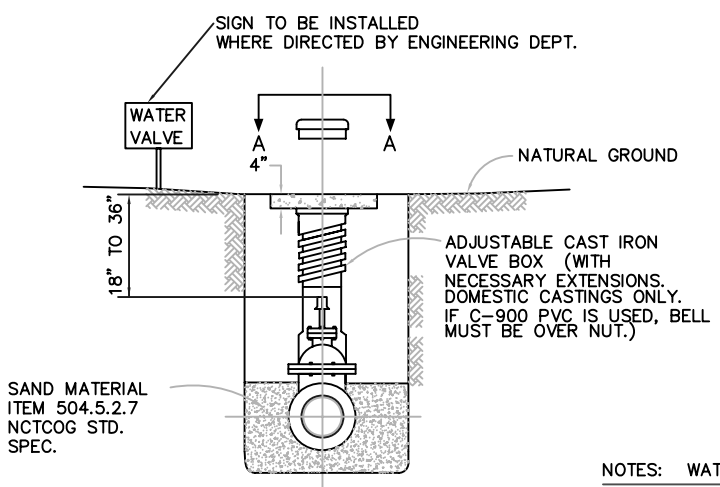
N.T.S.



MINIMUM REQUIRED BEARING AREA IN SQUARE FEET					
PIPE SIZE	PLUGS & TEES	90° BENDS	45° BENDS	22 1/2° BENDS	X
4" & 6"	2.2	3.0	1.7	0.9	TO BE A MINIMUM OF 18"
8"	3.8	5.4	2.9	1.5	
10"	5.9	8.4	4.6	2.3	
12"	8.5	12.0	6.5	3.4	

NOTES:

1. THRUST BLOCKS SHALL BE PLACED OR FORMED IN SUCH POSITION THAT ALL BOLTS REMAIN ACCESSIBLE.
2. ALL BLOCKING SHALL BE PLACED AGAINST UNDISTURBED FIRM TRENCH WALL.
3. BLOCKING AREAS SHOWN ABOVE ARE BASED ON 150 PSI PIPE PRESSURE AND MINIMUM SOIL BEARING OF 2000#/S.F. ALL FITTINGS TO BE MJ UNLESS OTHERWISE NOTED. ALL VERTICAL BENDS TO BE RESTRAINED W/RETAINER GLANDS. HORIZONTAL FITTINGS TO BE RESTRAINED AS NEEDED PER ENGINEER OR INSPECTOR.



TYPICAL VALVE SETTING AND BOX 4" TO 12" GATE VALVE

N.T.S.

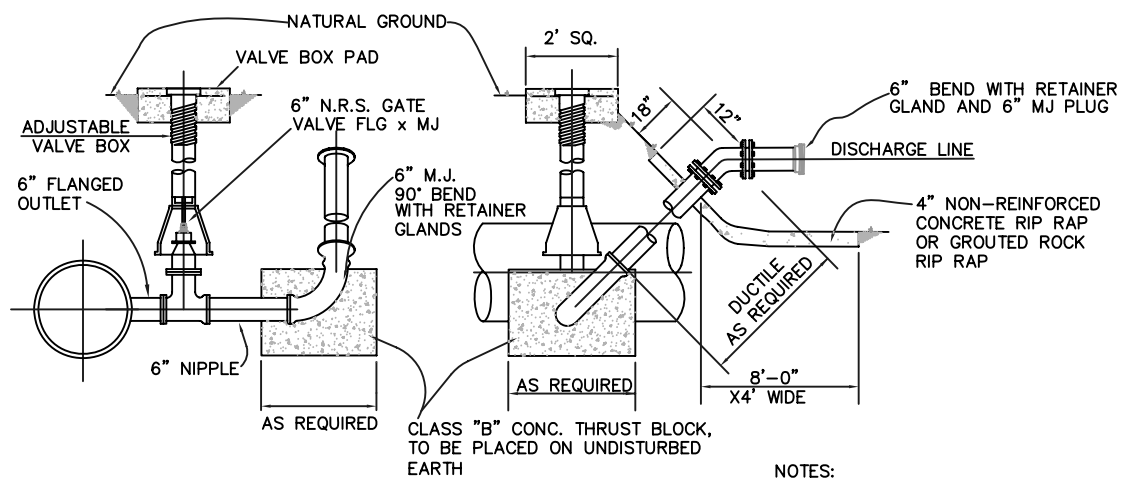
NOTES: WATER VALVE

1. ALL VALVES TO BE RESILIENT SEAT GATE VALVES WITH NON-RISING STEMS, COUNTER-CLOCKWISE OPENING.
2. VALVE STEM EXTENSIONS WITH ROCK GUARDS AND LOCK CLIPS SHALL BE INSTALLED WHERE NECESSARY TO PLACE OPERATING NUT NOT MORE THAN 36" BELOW FINISHED GRADE.

DIMENSIONS OF CONCRETE FOR THRUST BLOCKS AT FITTINGS

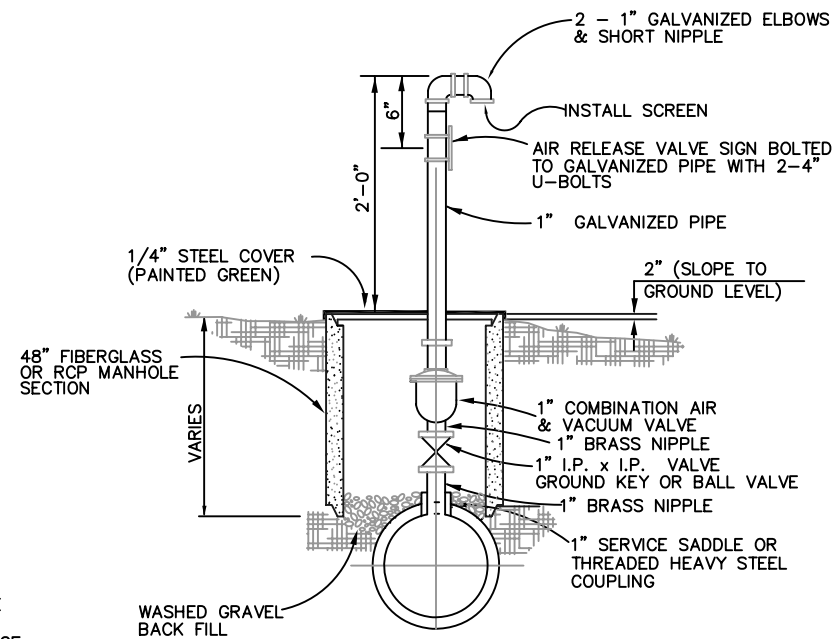
N.T.S.

GATE VALVE, BLOCKING, MARKER, & LOWERING DETAILS		
CITY OF MANSFIELD		
STANDARD CONSTRUCTION DETAILS		
WATER	DATE: MAR. 2006	SHEET NO. W-2

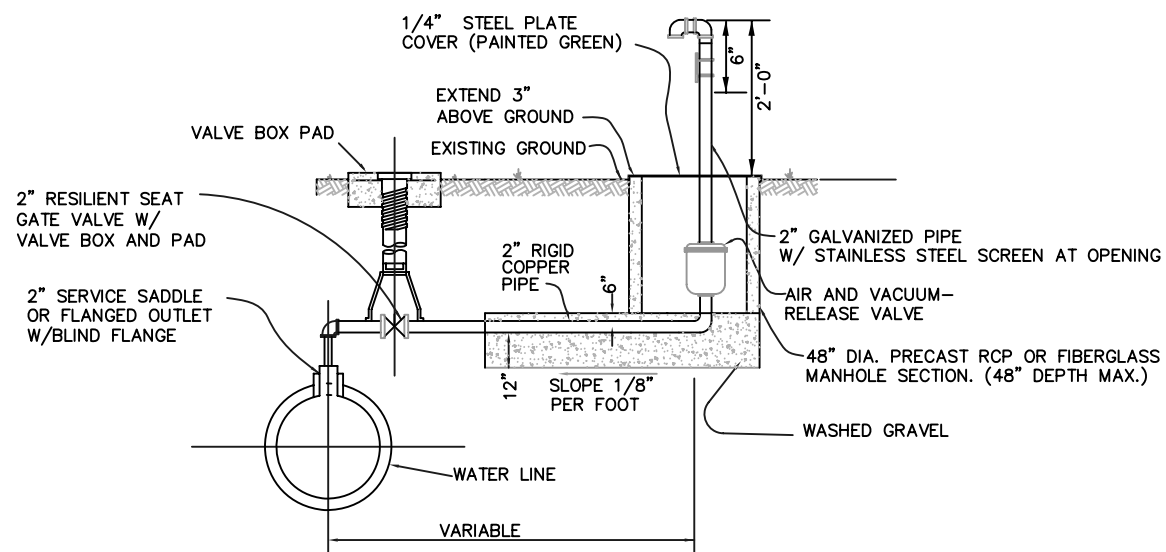
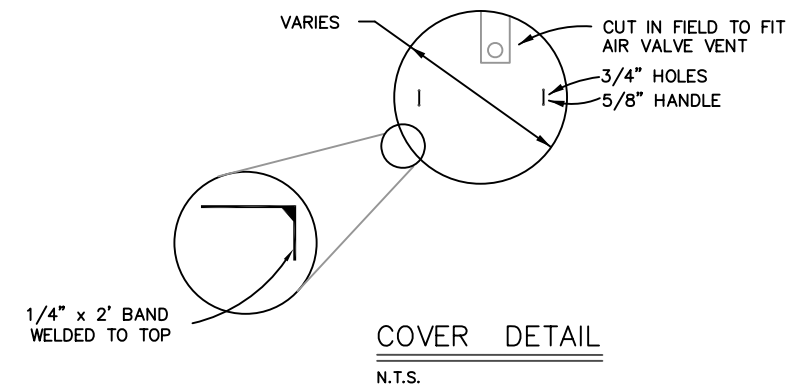


BLOW OFF VALVE DETAIL
N.T.S.

- NOTES:**
1. MUST BE DISCHARGED INTO STORM SEWER, BRIDGE OR CULVERT.
 2. USE APPROPRIATE BEND TO MAKE DISCHARGE END HORIZONTAL.
 3. ALL FITTINGS SHALL BE RETAINED & DISCHARGE END SHALL BE CLOSED W/MJ PLUG.

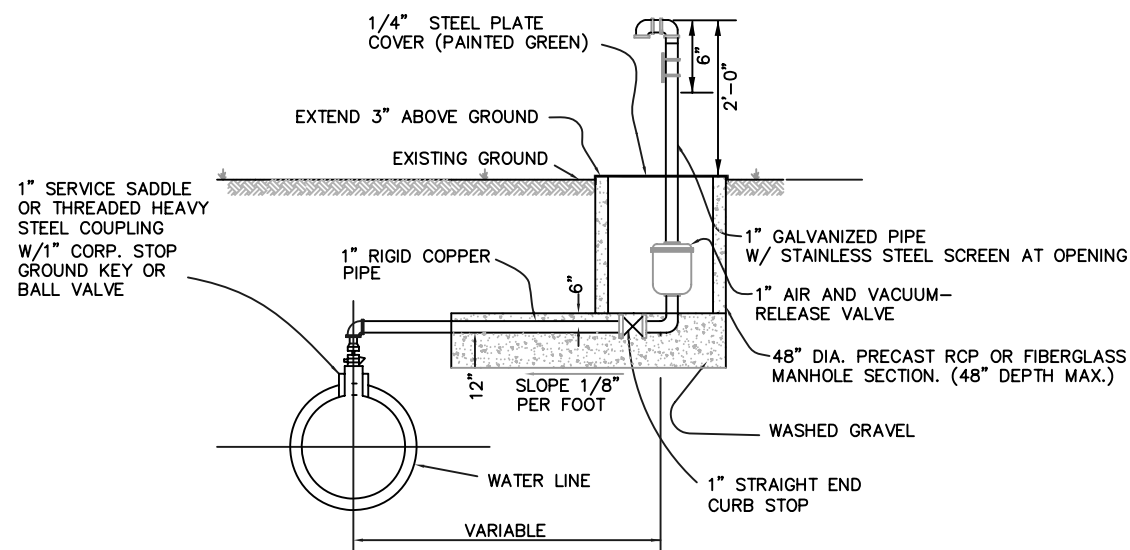


1" AIR AND VACUUM RELEASE VALVE INSTALLATION
N.T.S.



- NOTES:**
1. COMBINATION AIR AND VACUUM-AIR RELEASE VALVE APCO OR CAL-VAL OR AWWA APPROVED EQUAL.
 2. USE OF OFFSET OR NON-OFFSET TO BE DETERMINED BY ENGINEER PER FIELD CONDITION.

2" & LARGER OFFSET AIR & VACUUM RELEASE VALVE INSTALLATION
N.T.S.

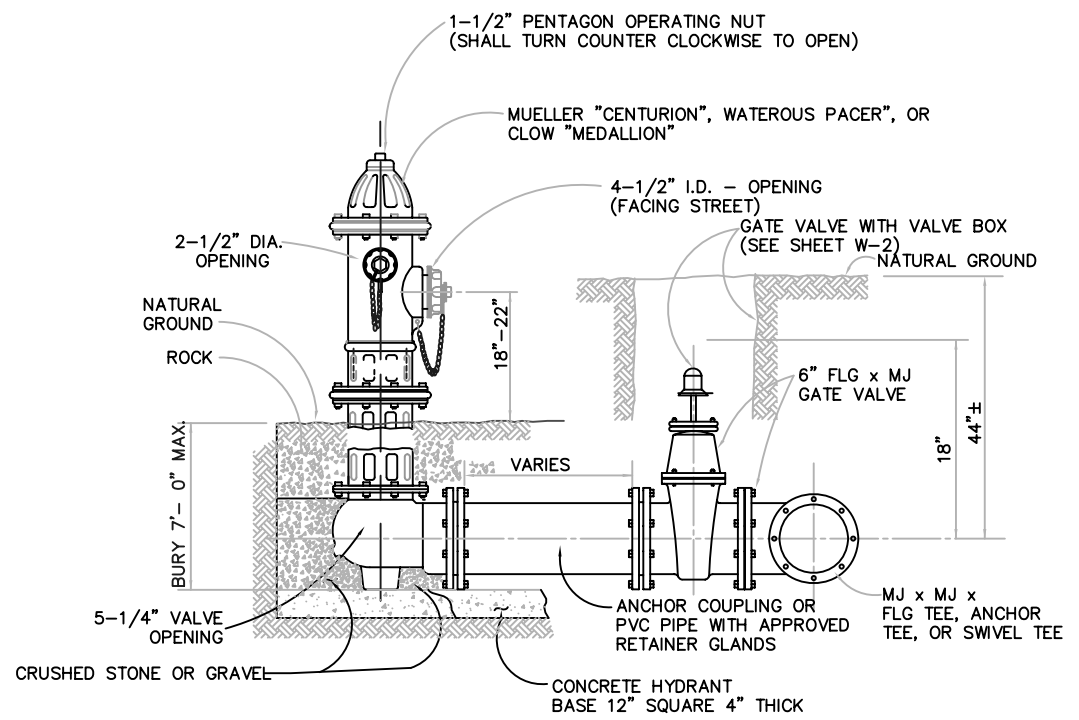


- NOTES:**
1. COMBINATION AIR AND VACUUM-AIR RELEASE VALVE APCO OR CAL-VAL OR AWWA APPROVED EQUAL.
 2. USE OF OFFSET OR NON-OFFSET TO BE DETERMINED BY ENGINEER PER FIELD CONDITION.

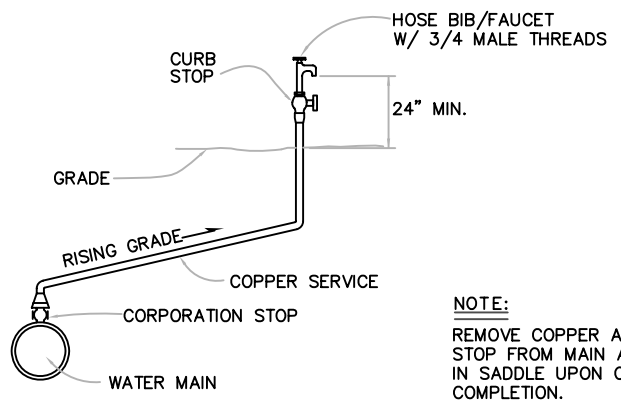
1" OFFSET AIR AND VACUUM RELEASE VALVE INSTALLATION
N.T.S.

BLOW OFF &
AIR RELEASE VALVE DETAILS
CITY OF MANSFIELD
STANDARD CONSTRUCTION DETAILS

WATER	DATE:	SHEET NO.
	MAR. 2006	W-3



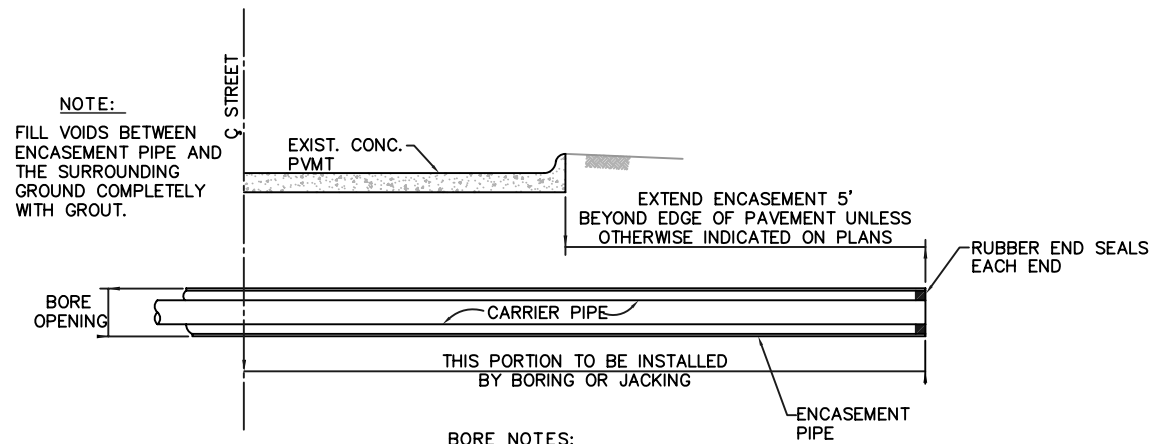
STANDARD FIRE HYDRANT DETAIL
N.T.S.



TEMPORARY FLUSH VALVE/SAMPLE POINT
N.T.S.

GENERAL NOTES:

1. CENTER OF F.H. BARREL SHALL BE NOT LESS THAN 2.5' OR MORE THAN 3.5' FROM BACK OF CURB OR EDGE OF PAVEMENT, UNLESS OTHERWISE APPROVED BY THE ENGINEERING DEPARTMENT.
2. ON PRIVATE CONTRACTS, THE DEVELOPER'S ENGINEER WILL STAKE F.H. HORIZONTAL LOCATION AND FLANGE ELEVATION.
3. FIRE HYDRANTS SHALL BE INSTALLED PRIMED ONLY, PAINTED AFTER INSTALLATION.
4. FIRE HYDRANTS SHALL BE COATED WITH HYDRANT HYDE, FLYNT, OR TENEMEC BRAND PAINTS. THE COLOR SHALL BE ALUMINUM.
5. HYDRANT LEADS OR FIRE LINES IN EXCESS OF 200' REQUIRE DOUBLE-CHECK ASSEMBLY AT MAIN (SEE SHEET W-6).
6. ALL HYDRANT EXTENSIONS SHALL HAVE BREAKAWAY FLANGE AND STEM COUPLING.
7. BLOCKING OF FIRE HYDRANT SHALL BE REQUIRED FOR EXTENSIONS ACROSS STREETS FROM MAINS OF LEADS LONGER THAN ONE JOINT OF PIPE.
8. LOWER BARREL ON FIRE HYDRANT SHALL NOT EXCEED 7'-0". IF NECESSARY, RETAINED BENDS MAY BE USED TO ACHIEVE GRADE NEEDED WITHOUT EXCEEDING 7'-0" LOWER BARREL HEIGHT. ALL PIPING TO BE DUCTILE IRON.



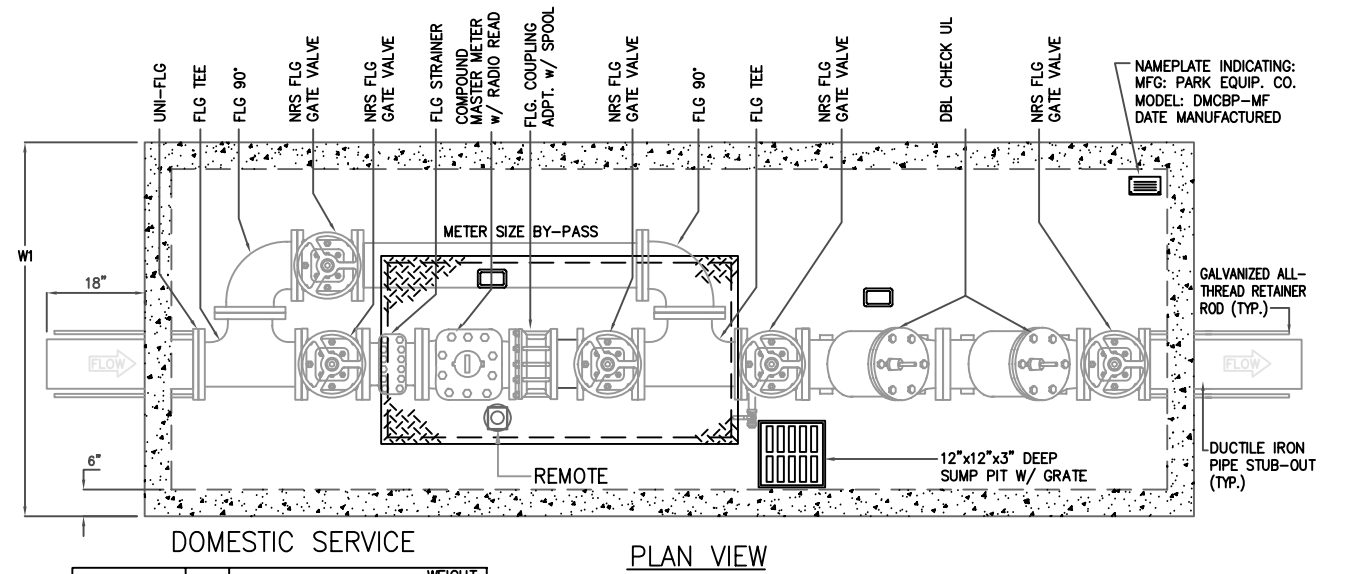
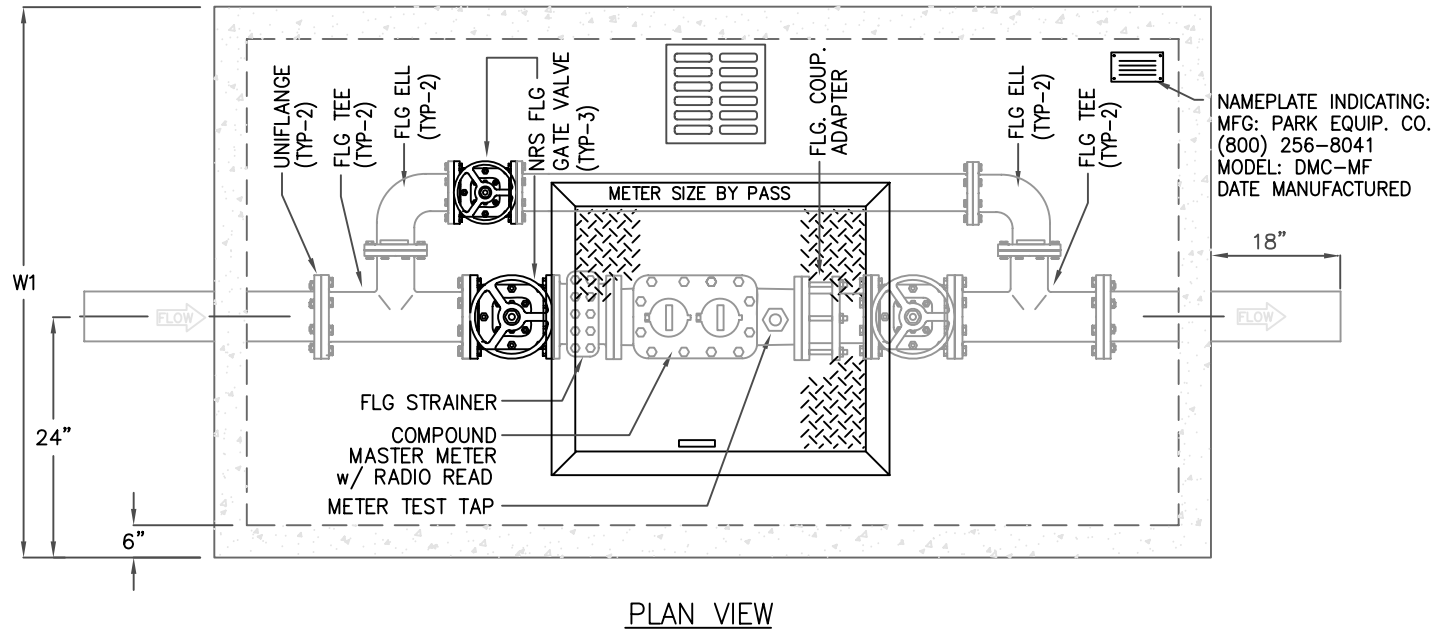
- BORE NOTES:**
1. ALL BORES SHALL BE CASED.
 2. CASING PIPE SHALL BE COATED INSIDE AND OUTSIDE WITH BITUMINOUS COATING.
 3. VOIDS OUTSIDE OF CASING PIPES SHALL BE GROUT FILLED.
 4. SEE SHEET MS-2 FOR APPROVED SPACERS.
 5. SPACERS TO BE INSTALLED PER MANUFACTURER'S SPECIFICATION.

BORE DETAIL
N.T.S.

FIRE HYDRANT, TEMPORARY FLUSH VALVE, & BORE DETAILS		
CITY OF MANSFIELD		
STANDARD CONSTRUCTION DETAILS		
WATER	DATE: MAR. 2006	SHEET NO. W-4

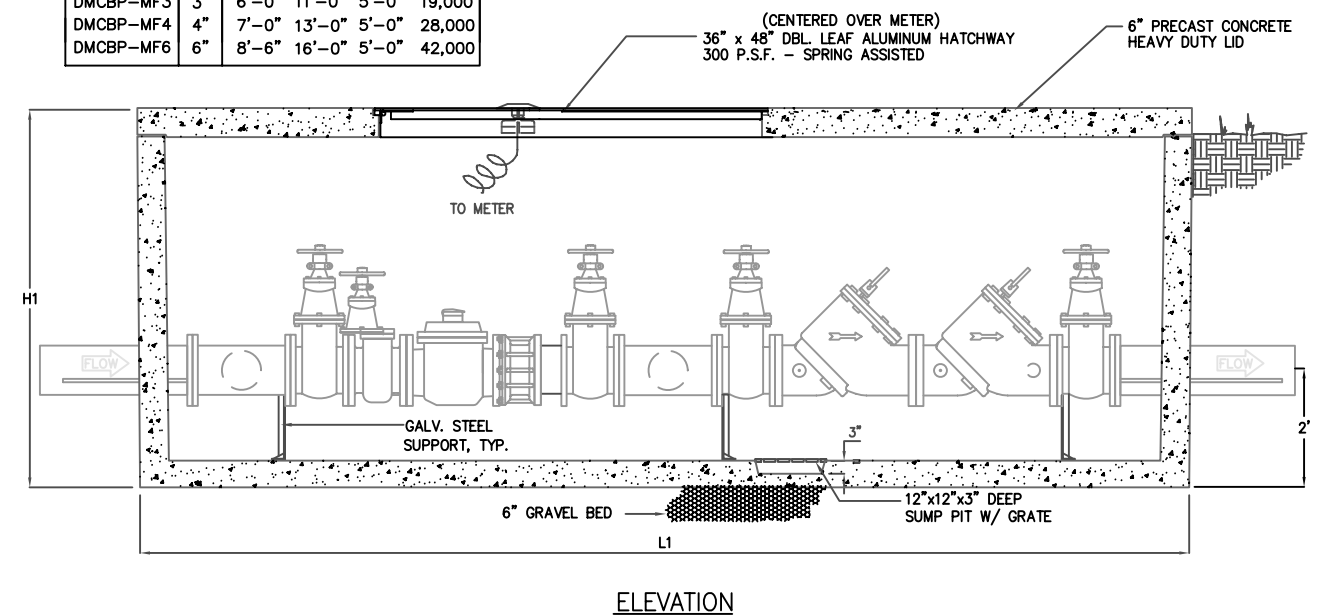
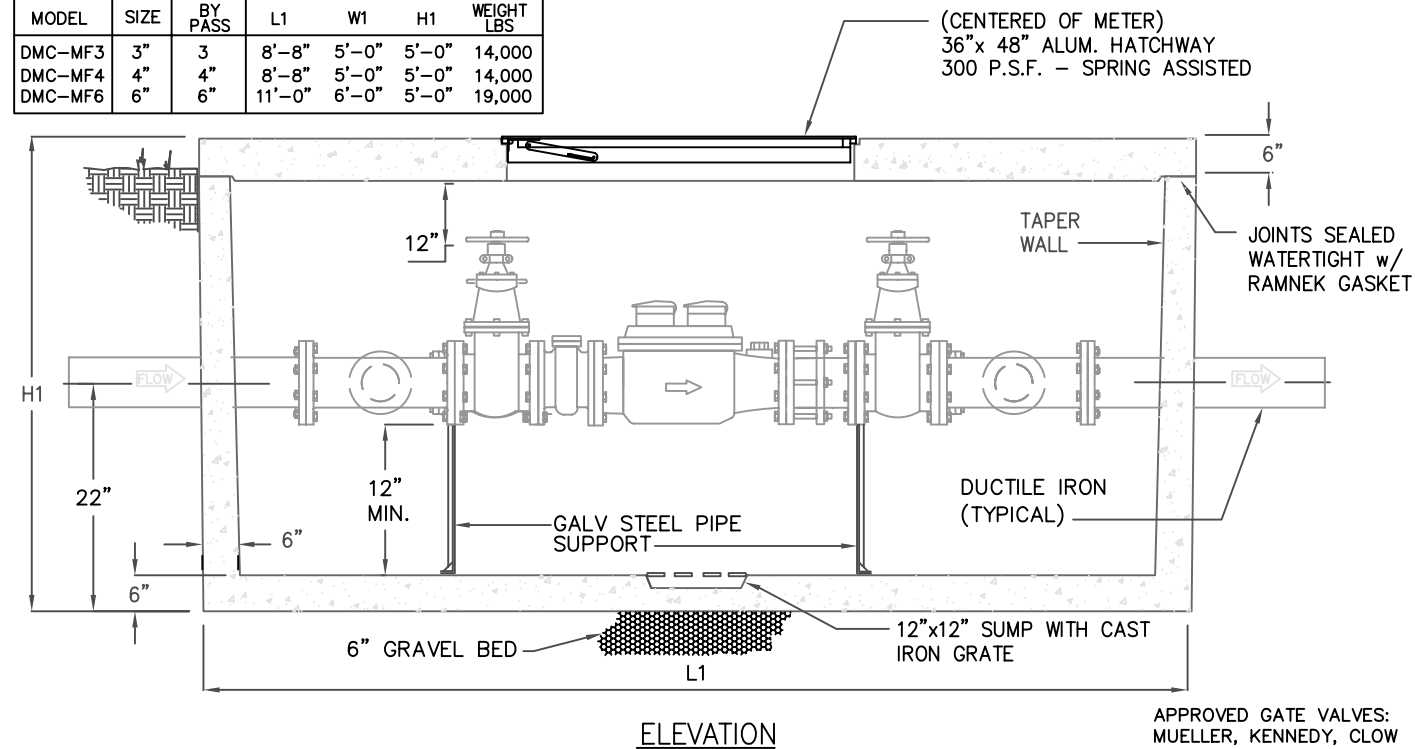
GENERAL NOTES:

1. ALL VAULTS W/METER AND OR BACK FLOW PREVENTERS SHALL BE PRECAST AND DELIVERED WITH ALL INTERNAL PIPING AND PARTS COMPLETE.
2. ALL PIPES MUST BE DUCTILE IRON & ALL FITTINGS MUST BE FLANGED IN VAULT.
3. CONCRETE SHALL BE CLASS "F" WITH DESIGN STRENGTH OF 4200 PSI @ 28 DAYS (708.2.4.2). UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH.
4. GRADE 60 REINFORCED, STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.
5. 1/4" ALUMINUM DIAMOND PLATE COVER WITH EXTRUDED ALUMINUM FRAME. HATCH TO BE FURNISHED WITH 316 STAINLESS STEEL SNAP LOCK & STAINLESS HINGES TO BE CENTERED OVER METER.
6. BACKFLOW ASSEMBLY SHALL BE FACTORY ASSEMBLED IN VAULT & HYDROSTATICALLY TESTED PRIOR TO DELIVERY.
7. MODEL NUMBERS ARE FOR PARK EQUIPMENT COMPANY, MODELS ARE DMCBP-MF OR DMC-MF. UNITS BY OTHER MANUFACTURERS MUST BE SUBMITTED TO BE APPROVED AS EQUALS.



DIMENSIONS						
MODEL	SIZE	BY PASS	L1	W1	H1	WEIGHT LBS
DMC-MF3	3"	3"	8'-8"	5'-0"	5'-0"	14,000
DMC-MF4	4"	4"	8'-8"	5'-0"	5'-0"	14,000
DMC-MF6	6"	6"	11'-0"	6'-0"	5'-0"	19,000

MODEL	SIZE	W1	L1	H1	WEIGHT LBS
DMCBP-MF3	3"	6'-0"	11'-0"	5'-0"	19,000
DMCBP-MF4	4"	7'-0"	13'-0"	5'-0"	28,000
DMCBP-MF6	6"	8'-6"	16'-0"	5'-0"	42,000



3", 4", & 6" DOMESTIC METER

3" & LARGER DOMESTIC METER AND DOUBLE-CHECK ASSEMBLY

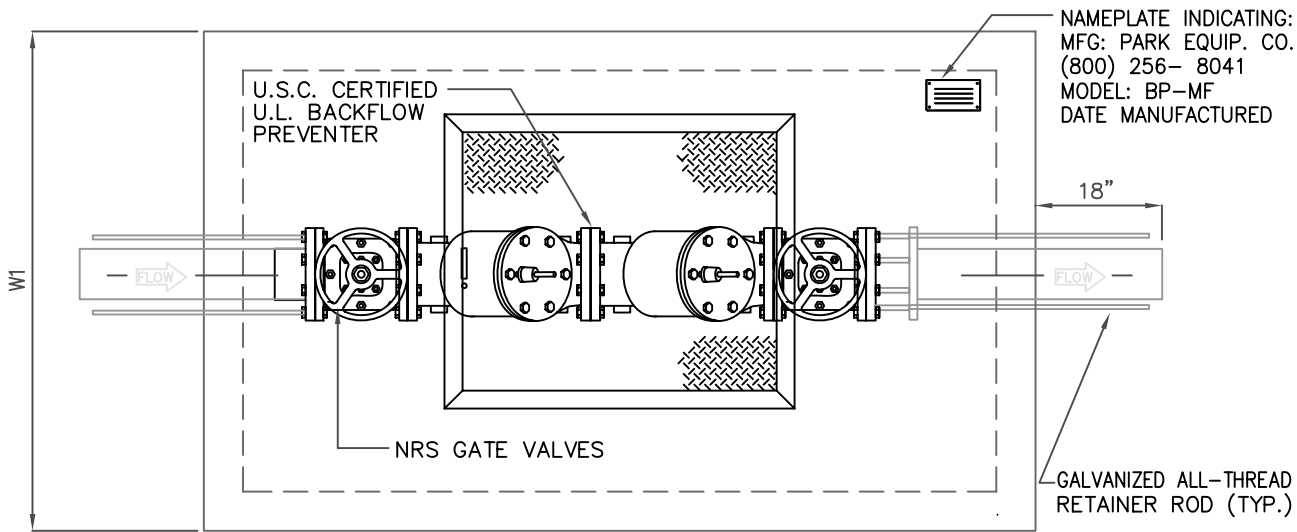
3" & LARGER WATER SERVICE DETAILS

**CITY OF MANSFIELD
STANDARD CONSTRUCTION DETAILS**

SERVICE	DATE: MAR. 2006	SHEET NO. W-5
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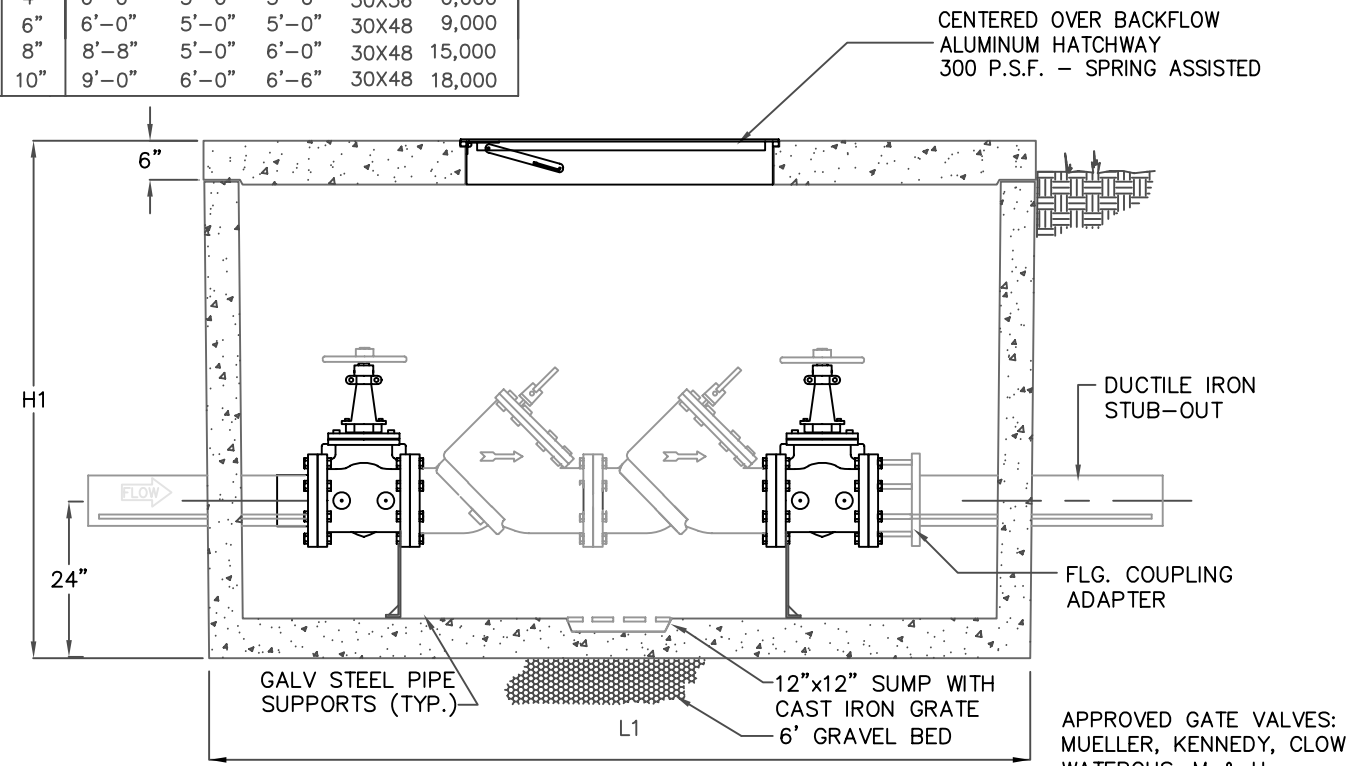
GENERAL NOTES:

1. ALL BACKFLOW PREVENTER VAULTS SHALL BE PRECAST AND DELIVERED WITH ALL INTERNAL PIPING AND PARTS COMPLETE.
2. ALL PIPE MUST BE DUCTILE IRON & ALL FITTINGS MUST BE FLANGED IN VAULT.
3. CONCRETE SHALL BE CLASS "F" WITH DESIGN STRENGTH OF 4200 PSI @ 28 DAYS (702.2.4.2). UNIT IS OF MONOLITHIC CONSTRUCTION AT FLOOR AND FIRST STAGE OF WALL WITH SECTIONAL RISER TO REQUIRED DEPTH.
4. GRADE 60 REINFORCED, STEEL REBAR CONFORMING TO ASTM A615 ON REQUIRED CENTERS OR EQUAL.
5. 1/4" ALUMINUM DIAMOND PLATE COVER WITH EXTRUDED ALUMINUM FRAME. HATCH TO BE FURNISHED WITH 316 STAINLESS STEEL SNAP LOCK & STAINLESS HINGES.
6. BACKFLOW ASSEMBLY SHALL BE FACTORY ASSEMBLED IN VAULT & HYDROSTATICALLY TESTED PRIOR TO DELIVERY.
7. MODEL NUMBERS ARE FOR PARK EQUIPMENT COMPANY, MODELS ARE DMCBP-MF (FIRE SERVICE) OR BP-M (DOMESTIC). UNITS BY OTHER MANUFACTURERS MUST BE SUBMITTED TO BE APPROVED AS EQUALS.



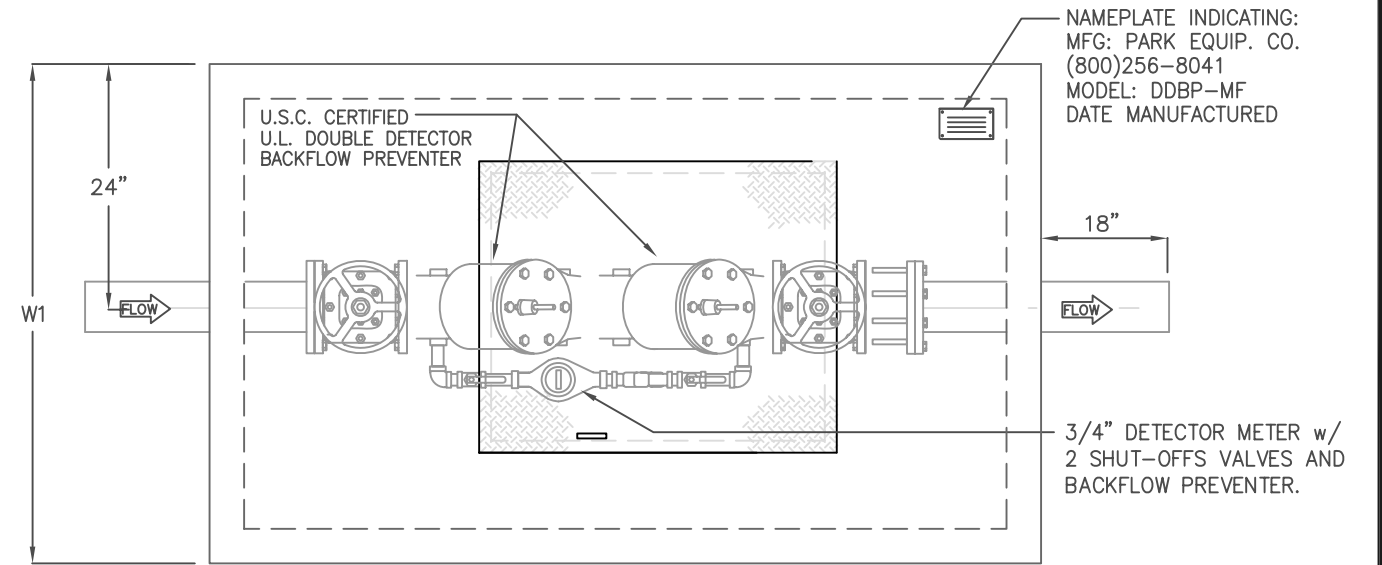
MODEL	SIZE	L1	W1	H1	ALUM. HATCH	WEIGHT LBS
BP-MF3	3"	6'-0"	3'-6"	5'-0"	30X36	6,000
BP-MF4	4"	6'-0"	3'-6"	5'-0"	30X36	6,000
BP-MF6	6"	6'-0"	5'-0"	5'-0"	30X48	9,000
BP-MF8	8"	8'-8"	5'-0"	6'-0"	30X48	15,000
BP-MF10	10"	9'-0"	6'-0"	6'-6"	30X48	18,000

PLAN VIEW



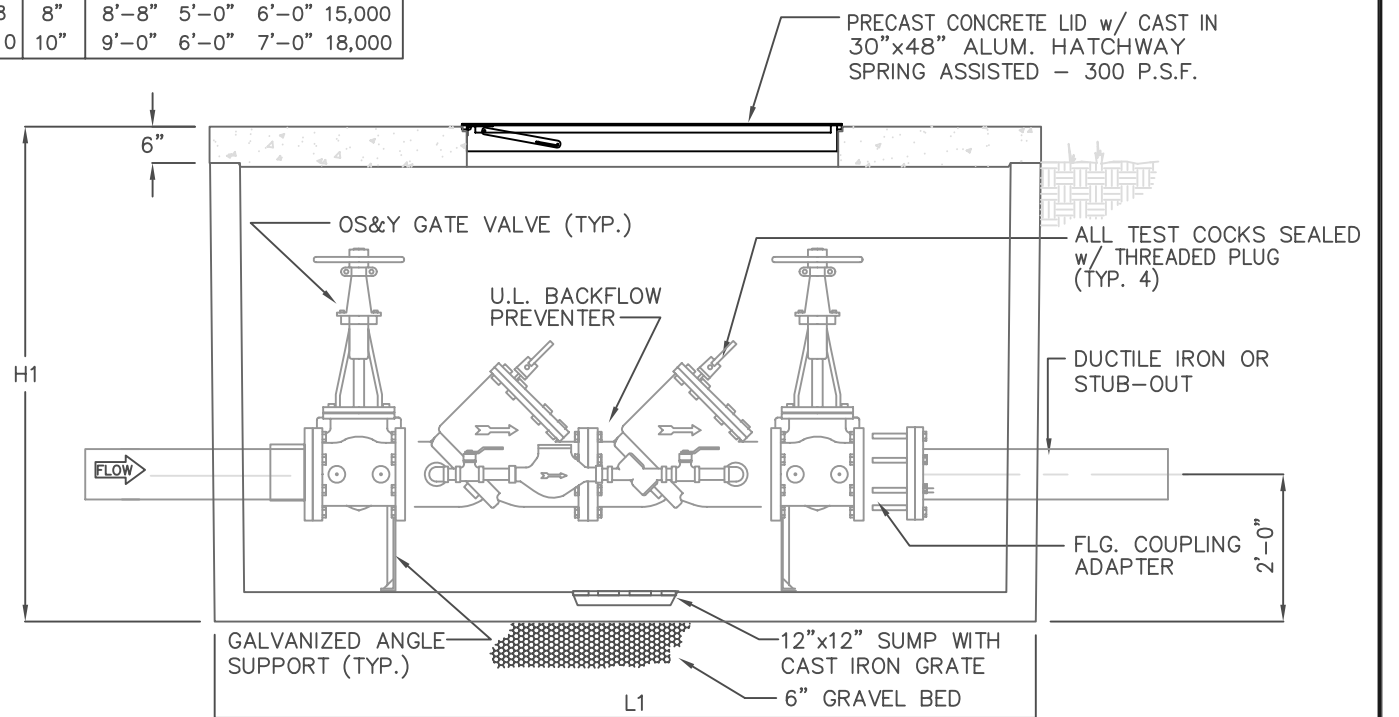
ELEVATION

DOMESTIC DOUBLE-CHECK ASSEMBLY



PLAN VIEW

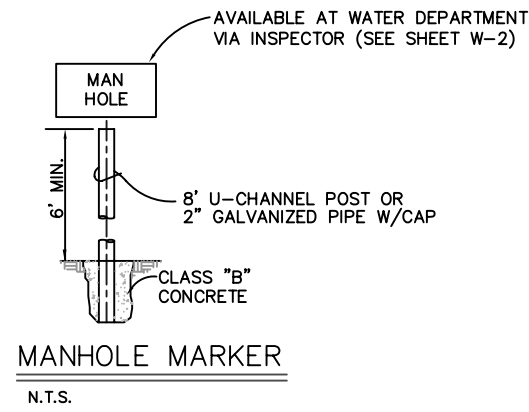
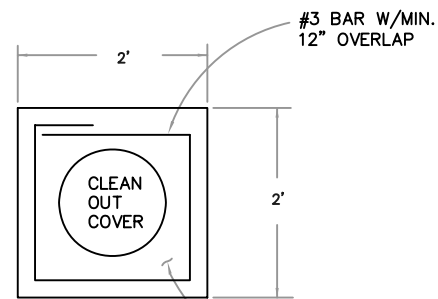
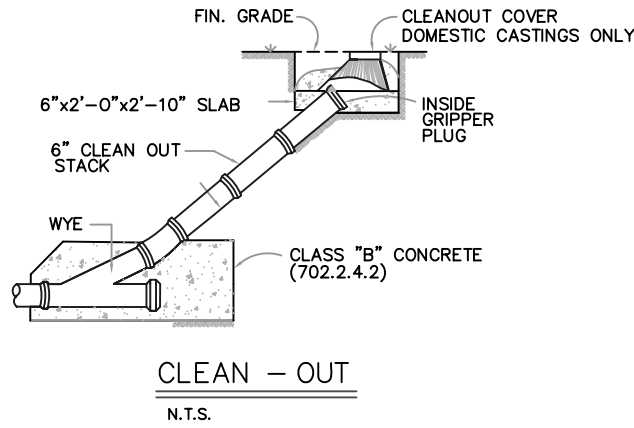
MODEL	SIZE	L1	W1	H1	WEIGHT LBS
DDBP-MF4	4"	6'-0"	5'-0"	6'-0"	9,000
DDBP-MF6	6"	6'-0"	5'-0"	6'-0"	9,200
DDBP-MF8	8"	8'-8"	5'-0"	6'-0"	15,000
DDBP-MF10	10"	9'-0"	6'-0"	7'-0"	18,000



ELEVATION

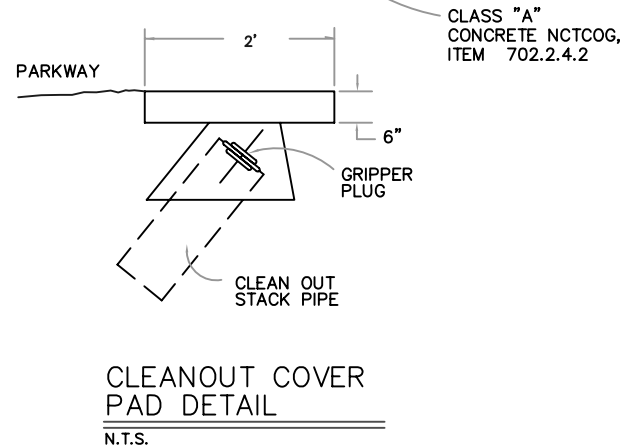
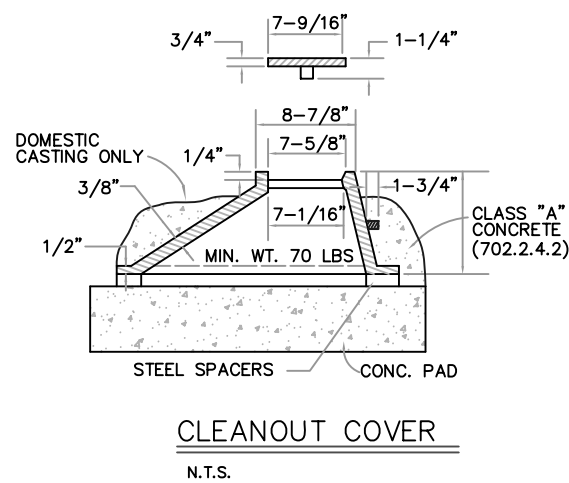
FIRE SERVICE DETECTOR DOUBLE-CHECK ASSEMBLY

3" & LARGER BACKFLOW PREVENTION DEVICE DETAILS		
CITY OF MANSFIELD		
STANDARD CONSTRUCTION DETAILS		
WATER	DATE: MAR. 2006	SHEET NO. W-6

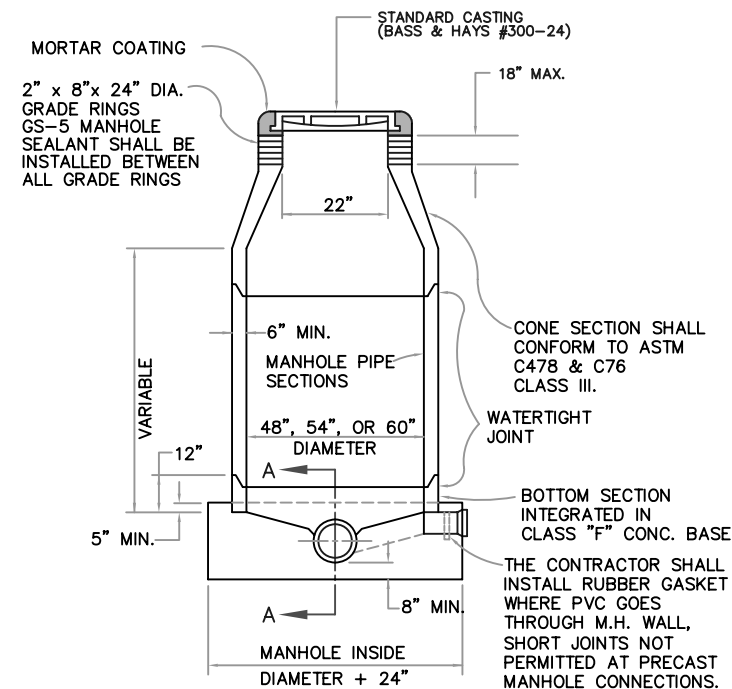
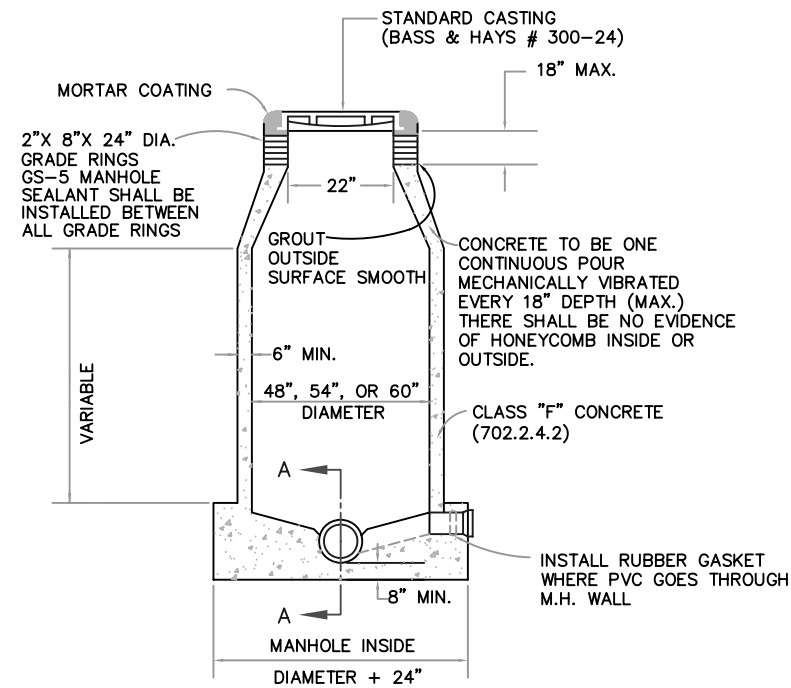
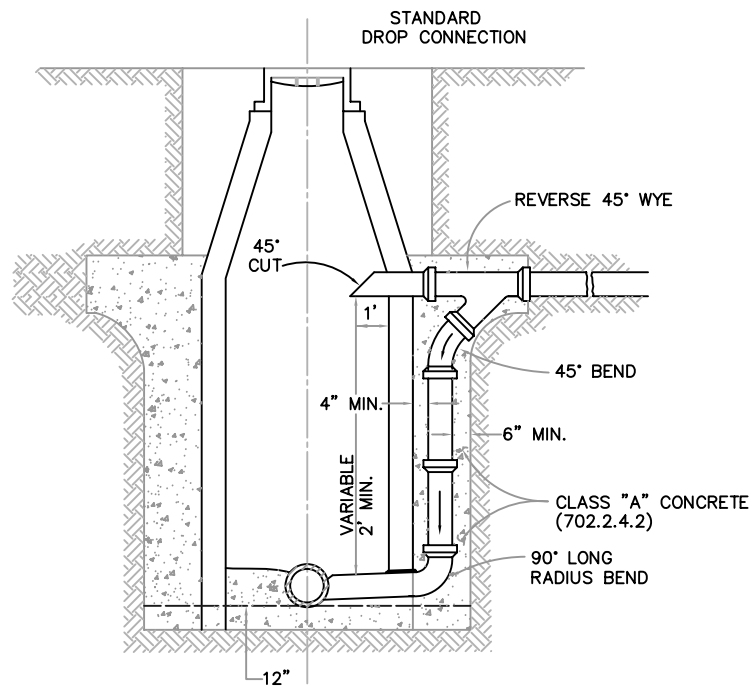
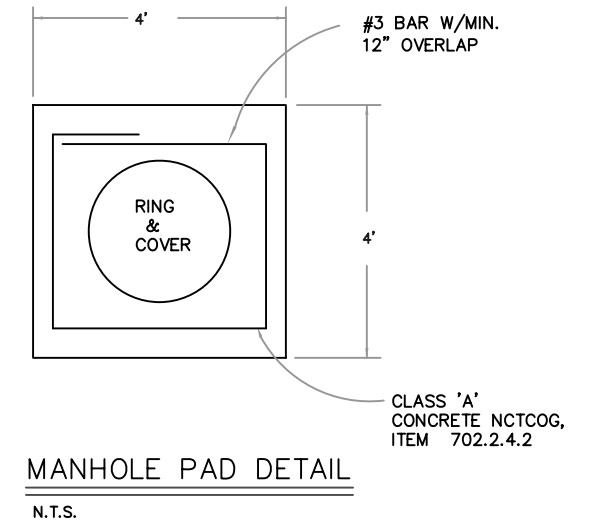
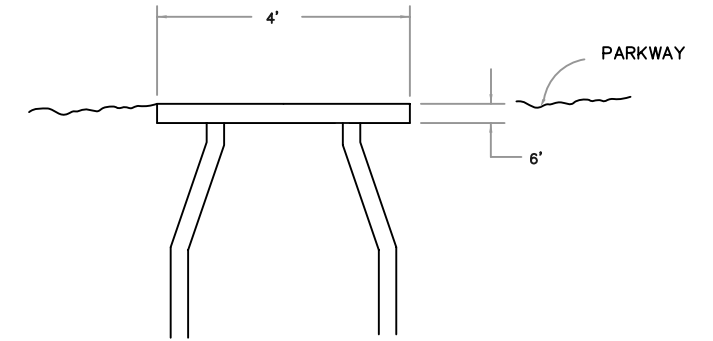
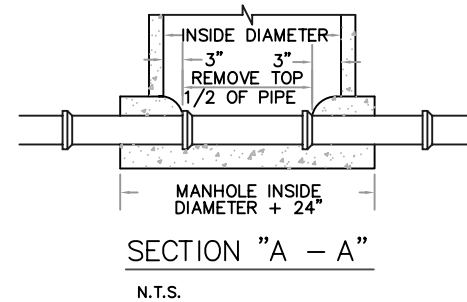


GENERAL NOTES:

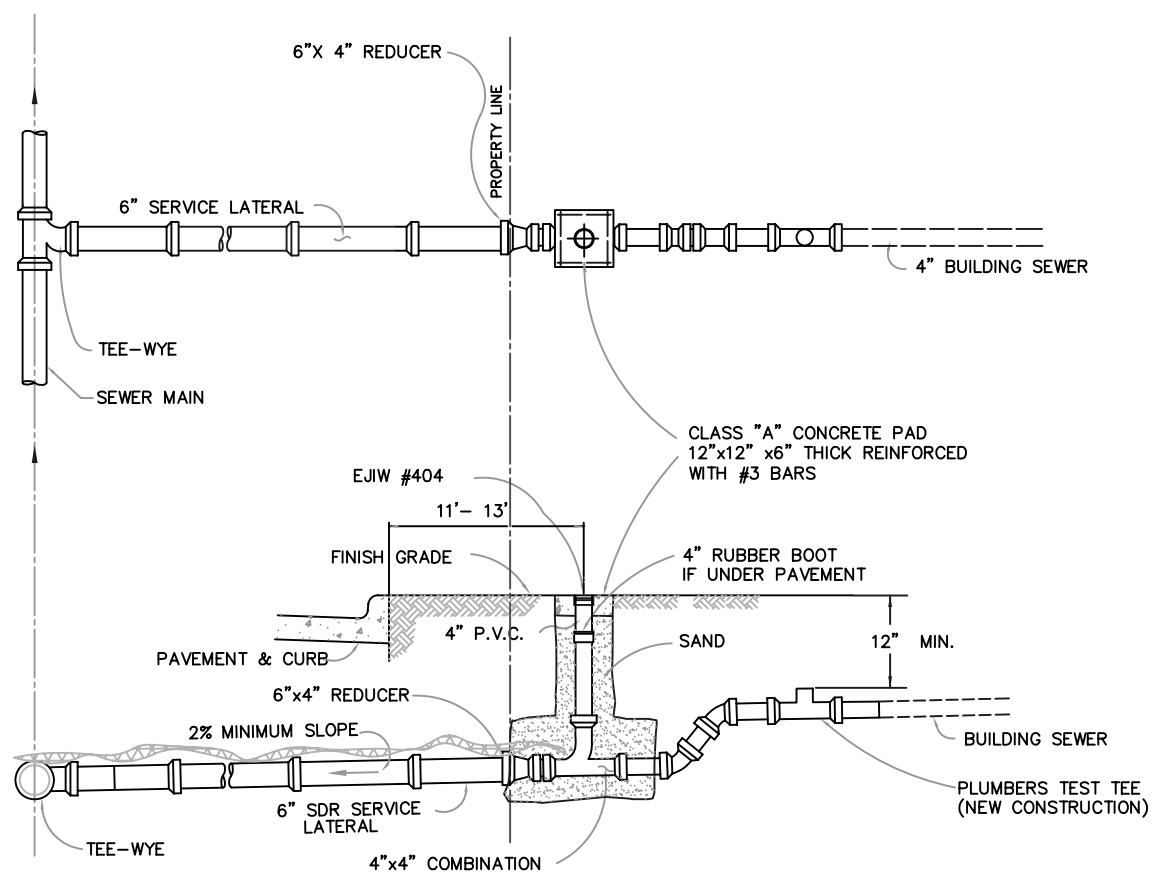
1. ALL CONSTRUCTION MATERIALS, METHODS AND PLACEMENT NOT DETAILED BELOW SHALL MEET OR EXCEED THE STANDARD SPECIFICATIONS OF THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS, OCTOBER 2004 EDITION UNLESS SUPERSEDED BY CITY OF MANSFIELD STANDARD SPECIFICATIONS OR MATERIAL TESTING POLICIES.
2. 300# RING AND COVER SHALL BE USED FOR ALL APPLICATIONS. DOMESTIC CASTING ONLY. (BASS & HAYS #300-24).
3. MANHOLE MARKERS SHALL BE INSTALLED IN ALL UNDEVELOPED AREAS.
4. MANHOLES IN DEVELOPED AREAS THAT ARE NOT IN PAVEMENT SHALL HAVE A 4'x4'x6" CONCRETE PAD.
5. MANHOLES SHALL BE PLACED MONOLITHICALLY W/STREET. IF A BLOCK OUT IS NEEDED INSPECTOR WILL PRE-APPROVE SIZE & SHAPE OF BLOCK OUT.
6. INVERTS FOR CAST-IN-PLACE MANHOLES SHALL BE MADE BY PLACING PIPE CONTINUOUSLY THROUGH MANHOLES AND CUTTING OUT THE TOP OF THE PIPE. A MINIMAL AMOUNT OF CONCRETE INVERT BETWEEN PIPE ENDS WILL BE PERMITTED.
7. CONCRETE FOR MANHOLES TO BE CLASS "F" PER NCTCOG SPECIFICATIONS 702.2.4.2. ALL CONCRETE SHALL CONTAIN SUFFICIENT AIR ENTRAINING AGENT TO YIELD 5% (± 1%) AIR CONTENT.



NOTE:
THIS DETAIL FOR CLEAN OUTS NOT IN PAVEMENT.



MANHOLE & CLEANOUT DETAILS		
CITY OF MANSFIELD STANDARD CONSTRUCTION DETAILS		
SANITARY SEWER	DATE: MAR. 2006	SHEET NO. SS-1

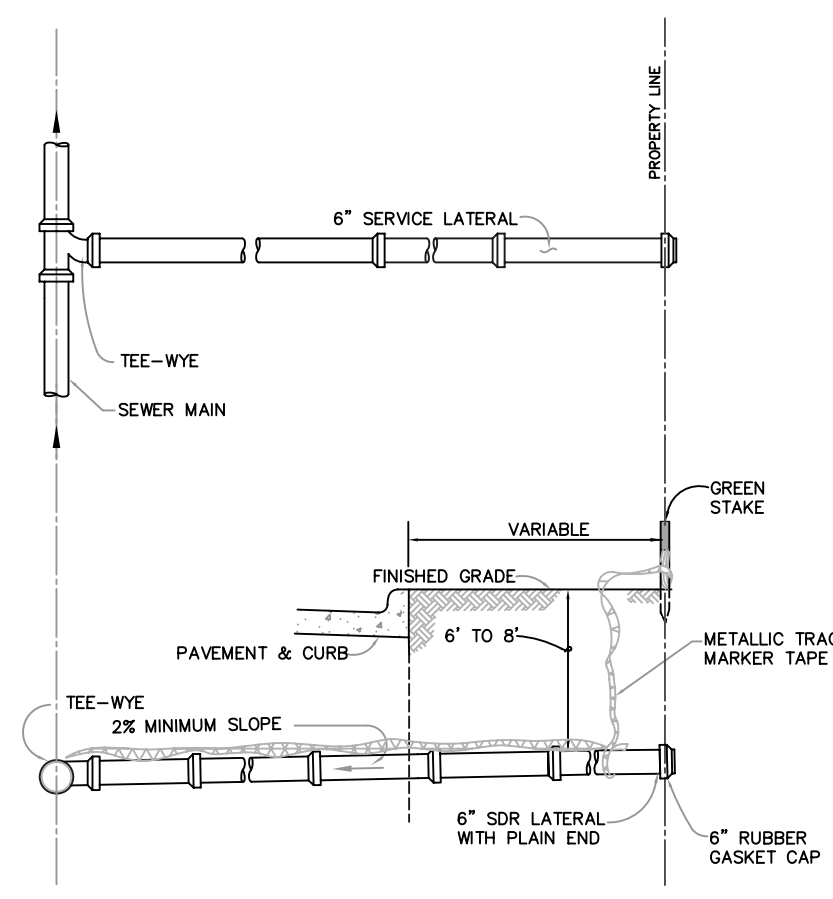


NOTES:

1. ALL PRIVATE FITTINGS MUST BE UPSTREAM OF 4"x4" COMBINATION, NO CONNECTION OR FITTINGS PERMITTED ON THE VERTICAL STACK.
2. FOR CLEANOUTS IN PAVEMENT, DRIVEWAYS, OR SIDEWALKS USE EJIW #404 CAST IRON CLEANOUT CAP. ALL OTHERS USE NDS #404 PLASTIC CLEANOUT CAP.

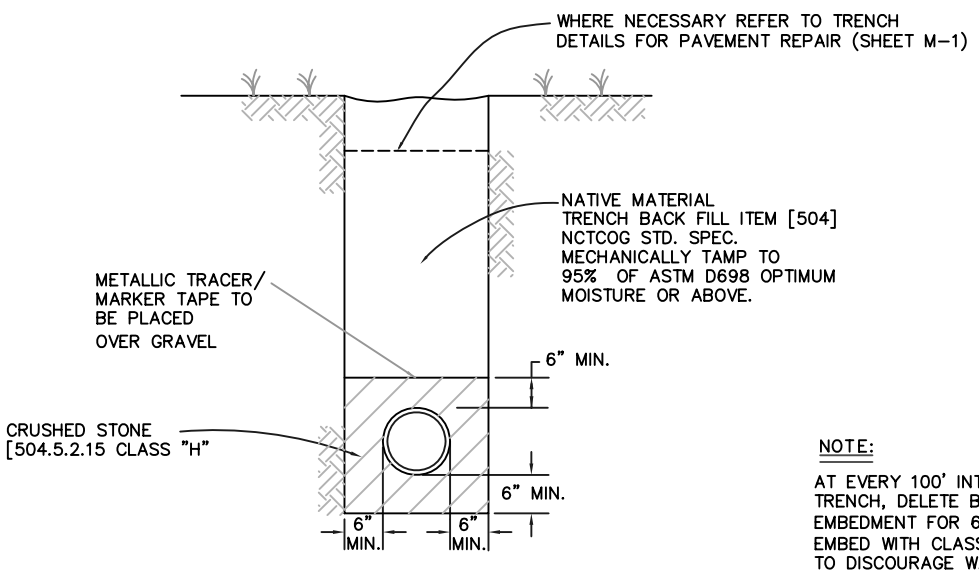
**STANDARD SEWER SERVICE CONNECTION
W/VERTICAL INSPECTION/CLEAN- OUT PORT**

N.T.S. (PLUMBER CONNECTION OR CIP RECONSTRUCTION)



**STANDARD SEWER SERVICE
FOR NEW CONSTRUCTION**

N.T.S.



SANITARY SEWER TYPICAL EMBEDMENT

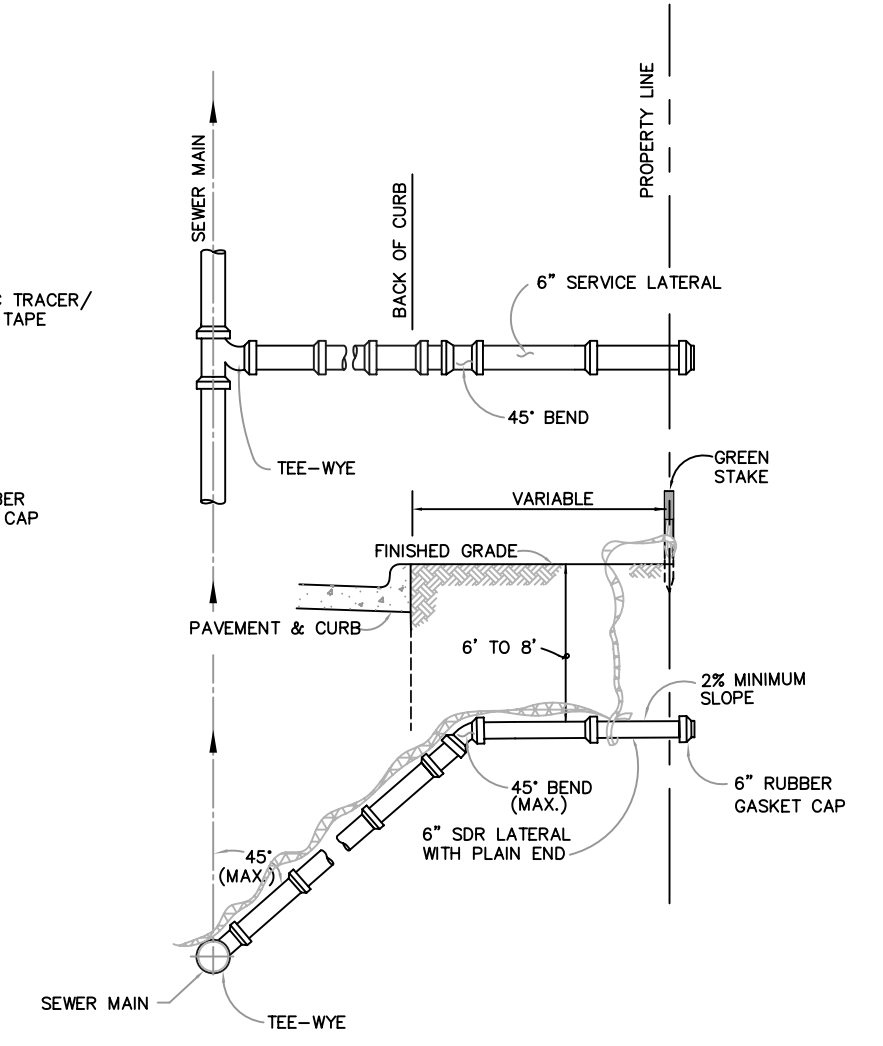
N.T.S.

NOTE:

AT EVERY 100' INTERVAL ALONG TRENCH, DELETE BEDDING AND EMBEDMENT FOR 6' ALONG TRENCH. EMBED WITH CLASS "B" CONCRETE TO DISCOURAGE WATER MOVEMENT DOWN TRENCH.

GENERAL NOTES:

1. ALL CONSTRUCTION MATERIALS, METHODS AND PLACEMENT NOT DETAILED BELOW SHALL MEET OR EXCEED THE STANDARD SPECIFICATIONS OF THE NORTH CENTRAL TEXAS COUNCIL OF GOVERNMENTS, OCTOBER 2004 EDITION UNLESS SUPERSEDED BY CITY OF MANSFIELD STANDARD SPECIFICATIONS OR MATERIAL TESTING POLICIES.
2. WHERE COVER IS LESS THAN 3.5 FEET, SANITARY SEWER MAINS AND LATERALS SHALL BE CONCRETE ENCASED OR CAPPED (SEE SHEET M-1).
3. METALLIC TRACER/MARKER TAPE, GREEN IN COLOR AND MARKED "SANITARY SEWER", TO BE PLACED ALONG MAIN LINES & SERVICES ON TOP OF CRUSHED STONE EMBEDMENT.
4. SEE SHEET W-1 FOR SERVICE LOCATION.
5. SEE SHEET MS-2 FOR APPROVED MATERIAL LIST.



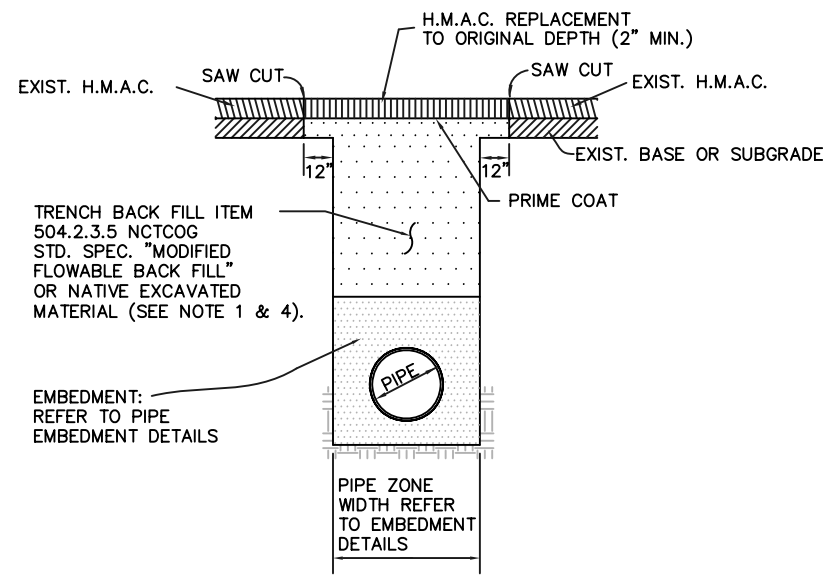
**STANDARD DEEP SERVICE DETAIL
FOR NEW CONSTRUCTION**

N.T.S.

NOTES:

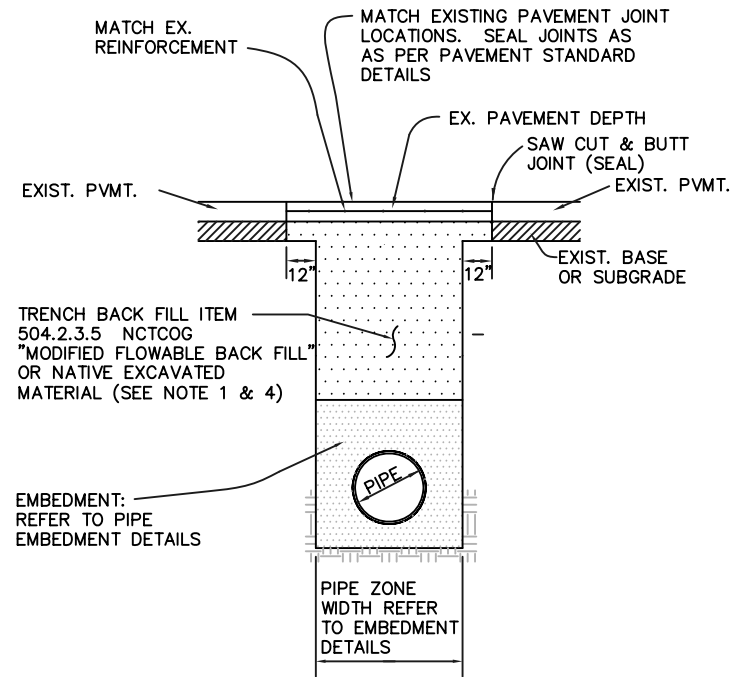
1. ROTATE TEE-WYE TO 45° MAX.
2. ONLY ONE 45° BEND WILL BE USED, 45° BEND MUST BE PLACED OUTSIDE OF PAVEMENT WHERE POSSIBLE.

SERVICE & TRENCH DETAILS		
CITY OF MANSFIELD		
STANDARD CONSTRUCTION DETAILS		
SANITARY SEWER	DATE: MAR. 2006	SHEET NO. SS-2



TYPICAL SECTION
ASPHALT PAVEMENT REPAIR

N.T.S.



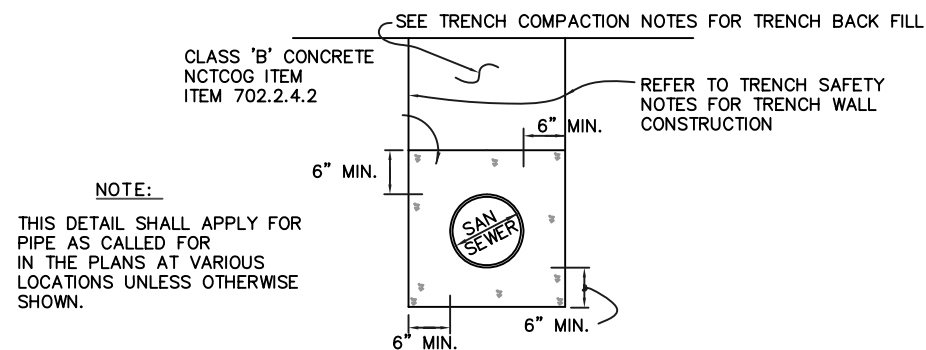
TYPICAL SECTION
CONCRETE PAVEMENT REPAIR

N.T.S.

GENERAL NOTES:

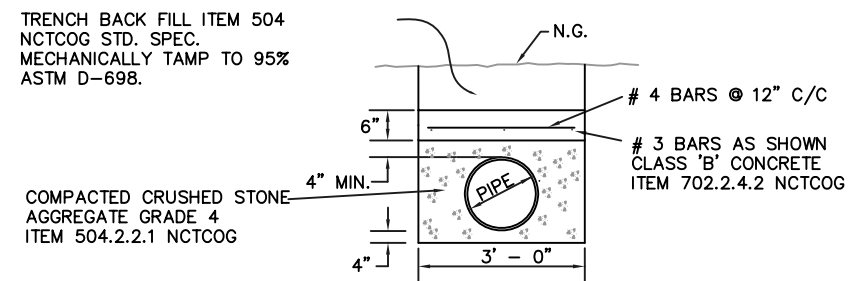
1. TRENCH BACK FILL: ITEM 504 NCTCOG STANDARD SPECIFICATIONS. MECHANICALLY TAMP WITH NATIVE MATERIAL EXCAVATED FROM TRENCHES UNLESS OTHERWISE DIRECTED ON PLANS. MECHANICALLY TAMP IN MAXIMUM 12" LOOSE, 6" COMPACTED LAYERS TO 95% ASTM D-698. BRING MOISTURE CONTENT TO OPTIMUM OR ABOVE PRIOR TO COMPACTION. BACK FILL FOR OPEN CUTS IN EXISTING IMPROVED PAVED ROADWAYS SHALL BE MODIFIED FLOWABLE BACK FILL PER NCTCOG SPEC 504.2.3.5 AT ENGINEER OR INSPECTOR'S DIRECTION.
2. CONCRETE PAVEMENT REPLACEMENT SHALL BE IN A MINIMUM OF ONE HALF PANEL INCREMENTS.
3. REFER TO CITY OF MANSFIELD MATERIAL TESTING POLICIES FOR BACK FILL TESTING PROCEDURES.
4. TRENCH SAFETY: THE CONTRACTOR SHALL PROVIDE A TRENCH SAFETY PLAN WHICH SPECIFICALLY ADDRESSES AND IDENTIFIES THE TRENCHES TO BE MADE ON THIS PROJECT AND PROVIDES THE TRENCHING DETAILS TO PROVIDE A SAFE WORK PLACE IN ACCORDANCE WITH STATE LAW AND OSHA REGULATIONS. THE TRENCH SAFETY PLAN SHALL BEAR THE SEAL AND SIGNATURE OF A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE OF TEXAS WITH EXPERIENCE IN PREPARATION OF TRENCH SAFETY SYSTEMS. THE PLAN SHALL INCLUDE ALL SOILS INVESTIGATION AND TEST DATA USED BY THE ENGINEER IN DEVELOPING THIS PLAN. THE CONTRACTOR SHALL CONDUCT HIS TRENCHING OPERATIONS IN ACCORDANCE WITH THIS PLAN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAILY INSPECTION AND ENFORCEMENT OF SUCH PLAN.

TRENCH REPAIR AT PAVEMENT DETAILS



CONCRETE ENCASEMENT

N.T.S.



PIPE CONCRETE CAP DETAIL

N.T.S.

TRENCH DETAILS		
CITY OF MANSFIELD		
STANDARD CONSTRUCTION DETAILS		
MISCELLANEOUS	DATE: MAR. 2006	SHEET NO. M-1

ITEM	MATERIAL	SPECIFICATION	MIN. PRESS. CLASS	SIZE RANGE	MANUFACTURER/ MODEL	NOTES					
WATER											
Water Pipe	PVC	AWWA C-900	DR-18	4" - 12"							
	PVC	AWWA C-905	DR-18	14" - 48"							
	PVC (MO)	AWWA C-909	150 PSI	6" - 12"		Use D.I. O.D.					
	Ductile Iron	AWWA C-150/151	250 PSI	16" - 36"		Pressure Class to be project specific					
Service Saddles	Ductile Iron Body, Stainless Straps			1"	Romac 101N Ford 101 BS JCM 405 Smith Blair 315	Epoxy Coated (AWWA C-550), Stainless Straps Flat Gasket - No O-rings, Controlled OD					
				2"	Romac 202N Ford 202 BS JCM 406 Smith Blair 317	Double Strap					
				Gate Valves	Cast Iron	AWWA C-509	4" - 12"	M&H/Kennedy/Clow Mueller 2360 American Flow Control 2500	Non Rising Stem (NRS), Epoxy Coated (AWWA C-550) Open counter-clock-wise		
								Ductile Iron	AWWA C-515	4" - 12"	M&H/Kennedy/Clow Mueller 2361 American Flow Control 2500
					Butterfly Valves	AWWA C-504	Project Specific				16" +
								Tapping Sleeves	Stainless Steel Body, Steel Flange		
Ductile Iron				Mueller H-615							
				Hydrants	Cast & Ductile Iron	AWWA C-503	5-1/4"				Waterous Pacer Clow Medallion Mueller Super Centurian
Hydrant Paint	Aluminum										
				Meter Box	Plastic			3/4" & 1"	NDS 1200-OLSB	In Grass	
3/4" & 1"	DFW Plastics/Alliance 1200 OLSB	In Grass									
3/4" & 1"	EJIW BCF 1118-12	In Sidewalk									
1-1/2" & 2"	EJIW BCF 1527	All Locations									
Retainer Glands	Ductile Iron				EBAA Iron Megalug Romac Roma Grip Sigma One Lock Star Grip	EBAA uses special gasket					
					Corp. Stops	Brass			1"	Ford F1000-4G Comp. Mueller H-15008	Male CC Thread x Comp.
									2"	Ford FB 1000-7G Mueller H-15013	
									Angle Curb Stops	Brass	
1" x 3/4"	Ford KV43-444WG Mueller H-14258										
1"	Ford FV43-777WG -or- BFA43-777WG Mueller H-14277 -or- B-24276	Comp. x Meter Flange (Ground Key -or- Ball Valve)									
2"											
Pipe Fittings	Cast Iron	AWWA C-110		16" +		Domestic & Foreign					
	Ductile Iron	AWWA C-153		4" - 36"		Domestic & Foreign					
Misc. Castings	Cast Iron			24" - 36" / 36" - 48"	Tyler 6850 Series	Valve Boxes - 2 Piece Screw Type (Domestic Only)					

MATERIAL SPECIFICATIONS		
CITY OF MANSFIELD		
STANDARD CONSTRUCTION DETAILS		
MATERIALS	DATE: MAR. 2006	SHEET NO. MS-1

ITEM	MATERIAL	SPECIFICATION	MIN. PRESS. CLASS	SIZE RANGE	MANUFACTURER/ MODEL	NOTES
SANITARY SEWER						
Sewer Pipe	PVC	ASTM D-3034	SDR-35	6" - 15"		SDR-26 for Deep Cover (Greater than 20', Project Specific)
	PVC	ASTM F-679		18" +		
	PVC Open Profile	ASTM F-794		15" +		
	PVC Dual Wall Corrugated Profile	ASTM F 794, F 949		15" +		
Force Main Sewer Pipe	White PVC	AWWA C-900	DR-18	4" - 12"		
	White PVC	AWWA C-905	DR-18	14" - 48"		
Sewer Fittings	PVC	ASTM D-3034	SDR-35	6" - 24"	Plastic Trends - G-series Multi-Fitting - Trench Tough Plus	SDR-26 for Deep Cover (Greater than 20', Project Specific)
End of Line Clean-out	Cast Iron				Bass & Hayes 339	
Service Clean-out Caps	Plastic (In Grass), Cast Iron (In Concrete)			4"	NDS 404; EJIW 404	
SS MH Ring & Cover	Cast Iron				Bass & Hayes #300-24	Domestic Only
	Cast Iron				East Jordan Iron Works #2023	
MISCELANEOUS						
Casing Spacers	Plastic			6" - 12"	Raci F/G	
	Plastic			14" - 20"	Raci M/N	
	Plastic			24" - 30"	Raci E/H	
	Plastic or Stainless Steel			6" - 12"	PSI Ranger Midi or Model SG	
	Plastic or Stainless Steel			14" - 30"	PSI Ranger Maxi or Model SG	
STORM SEWER						
Storm Drain Pipe	Reinforced Concrete		Class III	18" +		All Public Installations
Inlet Ring & Cover	Cast Iron				Bass & Hayes #226	Domestic Only
Storm MH Ring & Cover	Cast Iron				Bass & Hayes #300-24	Domestic Only (with "Storm Sewer" lettering)
	Cast Iron				East Jordan Iron Works #2023	

MATERIAL SPECIFICATIONS		
CITY OF MANSFIELD STANDARD CONSTRUCTION DETAILS		
MATERIALS	DATE: MAR. 2006	SHEET NO. MS-2