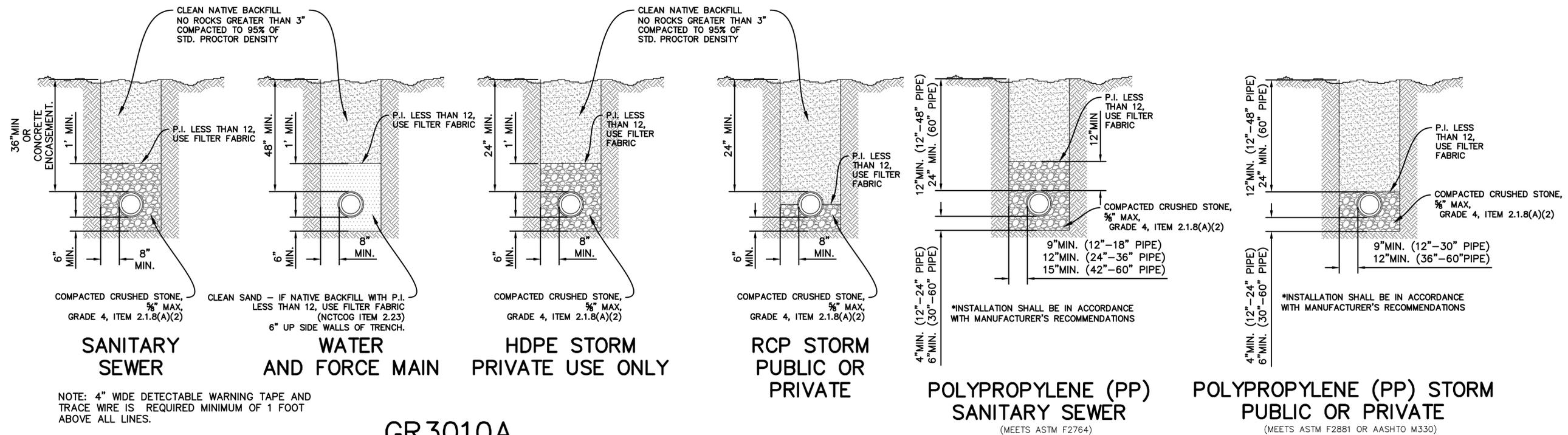


NOTE:
 GRAPHICS SHALL BE EXTERIOR GRADE
 ENAMEL, BLUE LETTERS ON WHITE
 BACKGROUND.

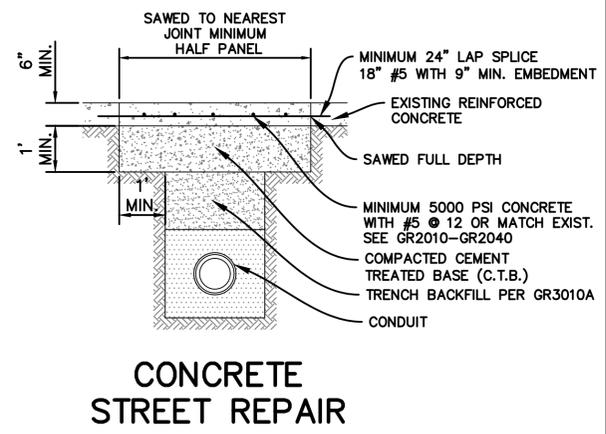
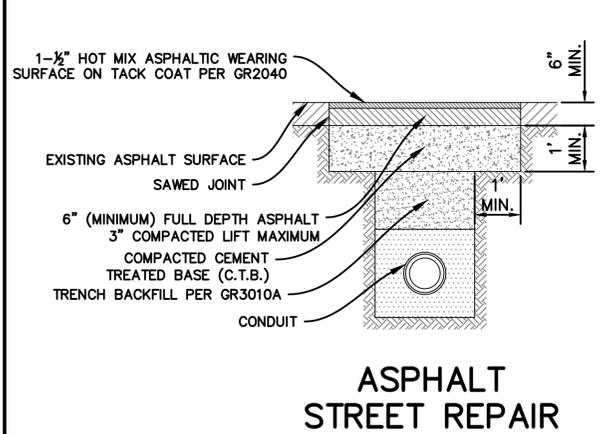
ALL LETTERS SHALL BE HELVETICA.
 GRAPEVINE LOGO APPROX. 12" DIA.

PLAN REVISIONS		
No.	Description	Date
CAPITAL IMPROVEMENT PROJECT CONSTRUCTION SIGN		
GRAPEVINE, TEXAS		
 City of Grapevine Public Works Department P.O. BOX 76099 PH 817-410-3155		
CHECKED:	SCALE:	DATE:
NTS	5-21-2025	
PROJECT No.	SHEET	OF

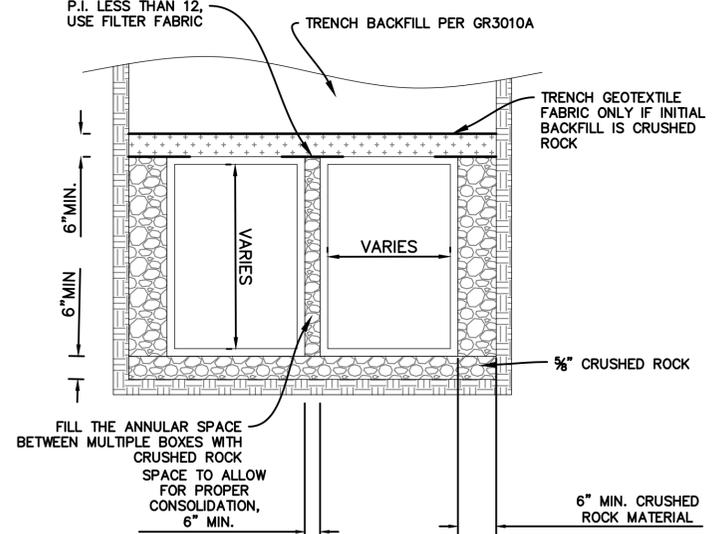
CONSTRUCTION SIGN



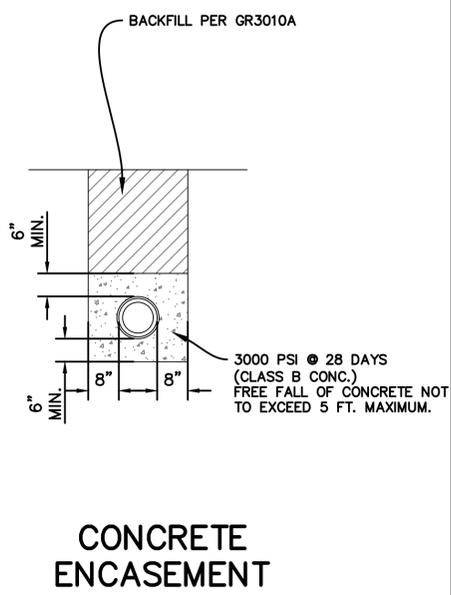
GR3010A



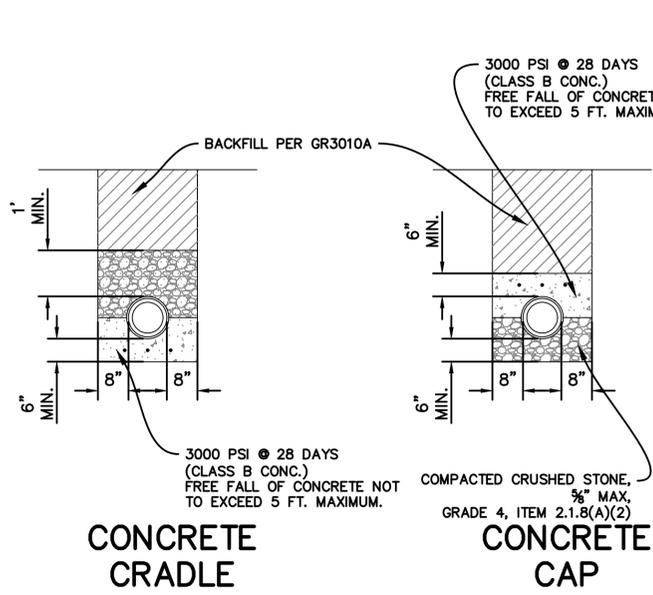
GR3070



GR3010A



GR3060



GR3010

WATER SANITARY AND STORM EMBEDMENT DETAILS

GRAPEVINE, TEXAS

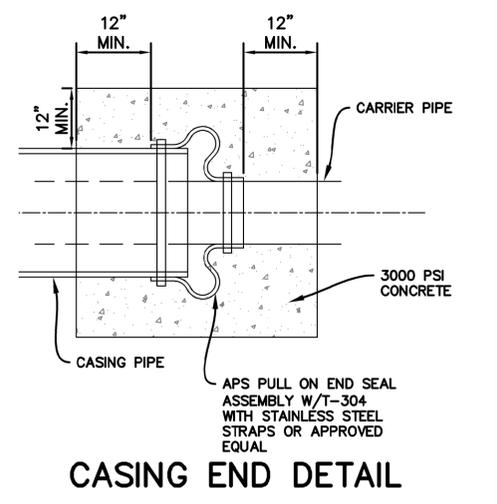
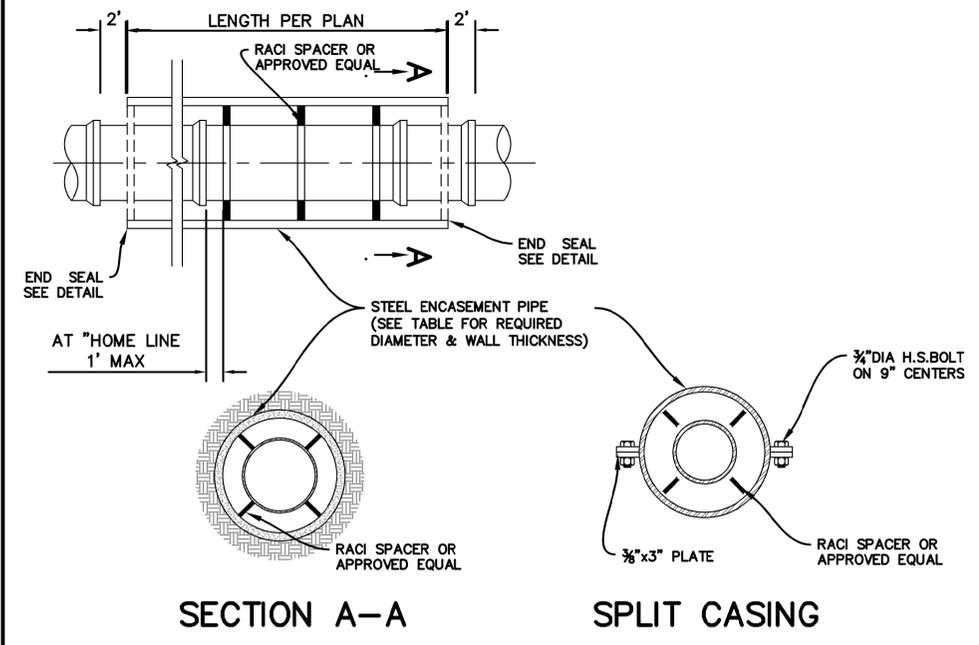
City of Grapevine Public Works Department

P.O. BOX 76099 PH 817-410-3155

CHECKED: NTS SCALE: DATE: PROJECT No. SHEET

1-10-2020 OF

EMBEDMENT DETAILS



CARRIER PIPE SIZE (IN)	STEEL ENCASUREMENT O.D. (IN)	STEEL ENCASUREMENT WALL THICKNESS (IN)
6	14	1/4
8	18	1/4
12	21	1/4
15	24	3/8
18	27	3/8
21	30	3/8
24	36	3/8
27	39	1/2

* CHECK AVAILABILITY

ENCASEMENT PIPE DETAIL GR3065

NOTE:
 1. FOR ALL CARRIER PIPES OVER 27", THE STEEL ENCASEMENT PIPE SHALL BE 12" LARGER THAN THE CARRIER PIPE AND THE STEEL ENCASEMENT WALL THICKNESS SHALL BE 1/2".
 2. ALL PIPE SHALL BE LAID TO GRADE AS SHOWN ON THE PLANS.
 3. SPLIT CASING SHALL ONLY BE USED WITH DIRECTOR OF PUBLIC WORKS APPROVAL.

WATER SANITARY AND STORM ENCASEMENT PIPE DETAILS

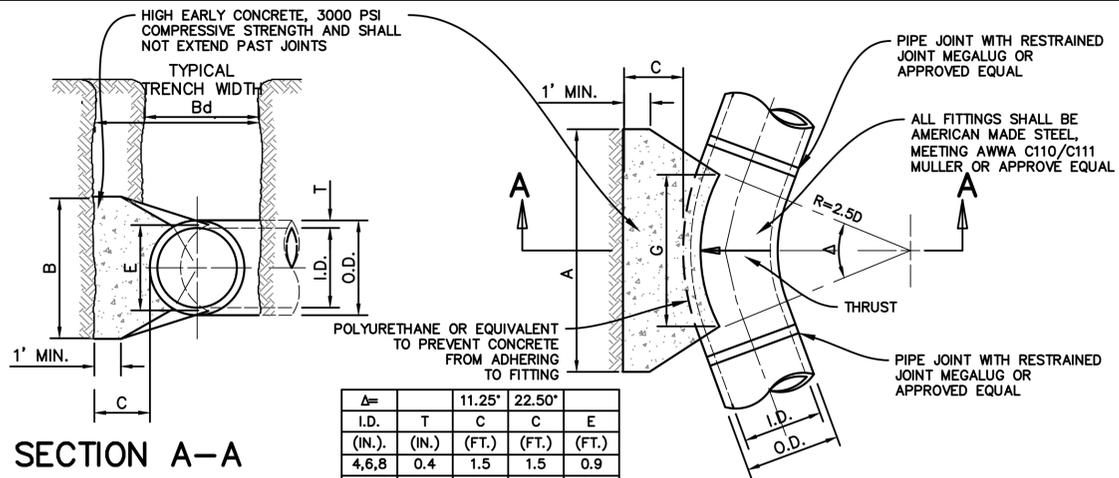
GRAPEVINE, TEXAS

City of Grapevine
Public Works Department

P.O. BOX 76099 PH 817-410-3155

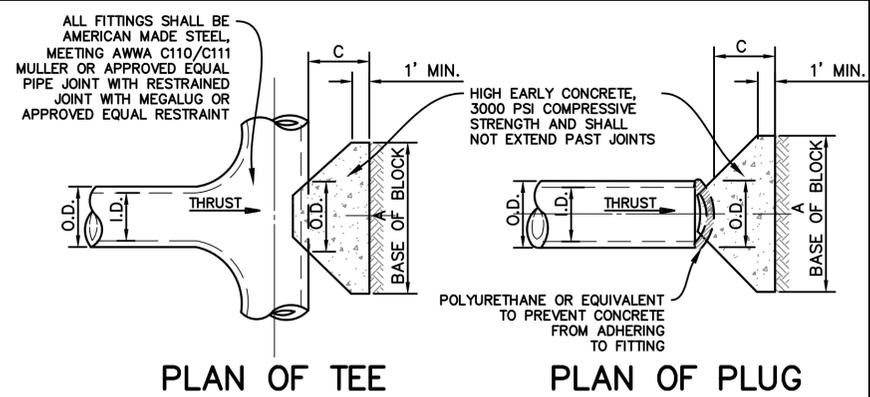
CHECKED: NTS SCALE: DATE: 11-5-18 PROJECT No. SHEET OF

ENCASEMENT PIPE DETAIL



Δ	11.25°	22.50°	
I.D. (IN.)	T (IN.)	C (FT.)	E (FT.)
4,6,8	0.4	1.5	0.9
10,12	0.5	1.5	1.2
16,18	0.6	1.5	1.6
20	0.7	1.5	1.8
24	0.9	1.5	2.1

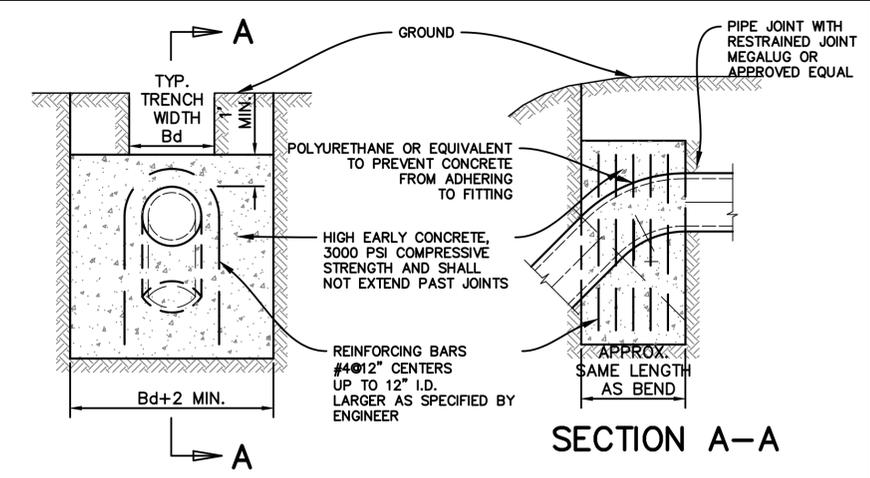
SECTION A-A



PLAN OF TEE

PLAN OF PLUG

TEE AND PLUG		EARTH		ROCK		
I.D. (IN.)	THRUST (TONS)	C (FT.)	A (FT.)	VOL. (C.Y.)	A (FT.)	VOL. (C.Y.)
4,6,8	5.1	1.5	2.5	0.3	2.0	0.2
10,12	11.3	1.5	3.5	0.6	2.5	0.3
16,18	25.5	2.0	5.5	1.6	4.0	0.9
20	31.5	2.0	6.0	1.9	4.0	0.9
24	45.2	2.5	7.0	3.1	5.0	1.7



SECTION A-A

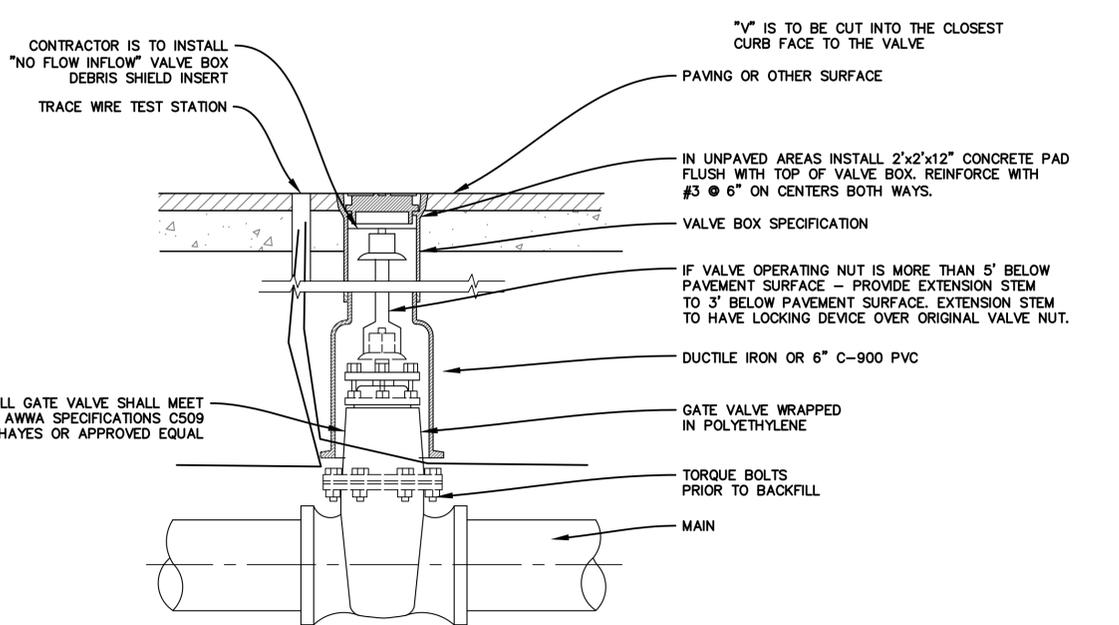
I.D. (IN.)	11.25°		22.50°		45°		90°		I.D. (IN.)
	THRUST (TONS)	VOL. (C.Y.)							
4,6,8	1.0	0.5	2.0	1.0	3.6	1.8	5.0	2.50	4,6,8
10,12	2.2	1.1	4.3	2.20	8.0	4.00	11.3	5.70	10,12
16,18	5.0	2.5	9.7	4.90	18.0	9.00	25.5	12.7	16,18
20	6.1	3.1	12.0	6.00	22.2	11.1	31.4	15.7	20
24	8.2	4.4	17.3	8.70	32.0	16.0	45.2	22.6	24

GR4020 HORIZONTAL TEE&PLUG THRUST BLOCK GR4030 VERTICAL BEND THRUST BLOCK

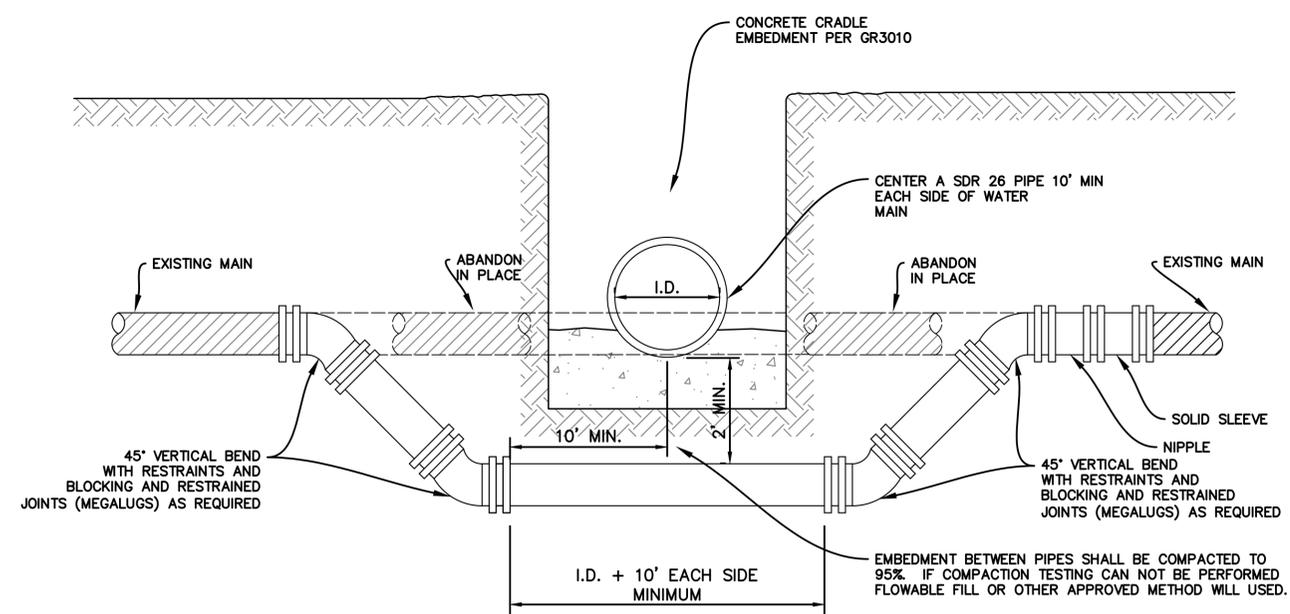
Δ = 11.25°									Δ = 22.50°								
EARTH			ROCK			EARTH			ROCK			EARTH			ROCK		
I.D. (IN.)	G (FT.)	THRUST (TONS)	A (FT.)	B (FT.)	VOL. (C.Y.)	A (FT.)	B (FT.)	VOL. (C.Y.)	I.D. (IN.)	G (FT.)	THRUST (TONS)	A (FT.)	B (FT.)	VOL. (C.Y.)	A (FT.)	B (FT.)	VOL. (C.Y.)
4,6,8	0.4	1.0	1.0	1.5	0.1	1.0	1.0	0.1	4,6,8	0.8	2.0	1.5	1.5	0.1	1.0	1.0	0.1
10,12	0.6	2.2	1.5	1.5	0.1	1.0	1.5	0.1	10,12	1.1	4.4	2.0	2.5	0.3	1.5	1.5	0.1
16,18	0.8	5.0	2.0	2.5	0.3	1.5	2.0	0.2	16,18	1.6	9.9	3.0	3.5	0.6	2.0	2.5	0.3
20	0.9	6.2	2.0	3.5	0.4	1.5	3.0	0.3	20	1.8	12.3	3.5	3.5	0.7	2.0	3.0	0.4
24	1.1	8.9	3.0	3.5	0.5	1.5	3.0	0.3	24	2.2	17.7	4.0	4.5	1.0	3.0	3.5	0.5

Δ = 45°									Δ = 90°								
EARTH			ROCK			EARTH			ROCK			EARTH			ROCK		
I.D. (IN.)	G (FT.)	THRUST (TONS)	A (FT.)	B (FT.)	VOL. (C.Y.)	A (FT.)	B (FT.)	VOL. (C.Y.)	I.D. (IN.)	G (FT.)	THRUST (TONS)	A (FT.)	B (FT.)	VOL. (C.Y.)	A (FT.)	B (FT.)	VOL. (C.Y.)
4,6,8	1.5	3.9	2.0	2.0	0.2	1.5	1.5	0.1	4,6,8	2.7	7.1	5.0	1.5	0.4	2.0	2.0	0.2
10,12	2.2	8.7	3.5	2.5	0.5	2.0	2.5	0.3	10,12	4.0	16.0	6.5	2.5	1.0	3.5	2.5	0.5
16,18	3.2	19.5	4.5	4.5	1.2	3.0	3.5	0.6	16,18	6.0	36.0	9.0	4.0	2.4	4.5	4.0	1.0
20	3.6	24.1	5.5	4.5	1.5	3.5	3.5	0.7	20	6.6	44.4	10.0	4.5	3.1	6.0	4.0	1.5
24	4.3	34.6	8.0	4.5	2.3	4.5	4.0	1.1	24	7.9	64.0	14.5	4.5	5.0	8.0	4.0	2.1

GR4010 HORIZONTAL BEND THRUST BLOCK BASED ON SOIL BEARING OF 1000 LBS/SF SOIL AND 2000 LBS/SF ROCK



GR4050 2"-12" GATE VALVE, BOX AND VALVE EXTENSION



NOTE: INSTALLATION SHALL MEET ALL TOEQ REQUIREMENTS FOR SEPARATION.

GR42000 WATERMAIN LOWERING DETAIL

**WATER DETAILS
THRUST BLOCKING**

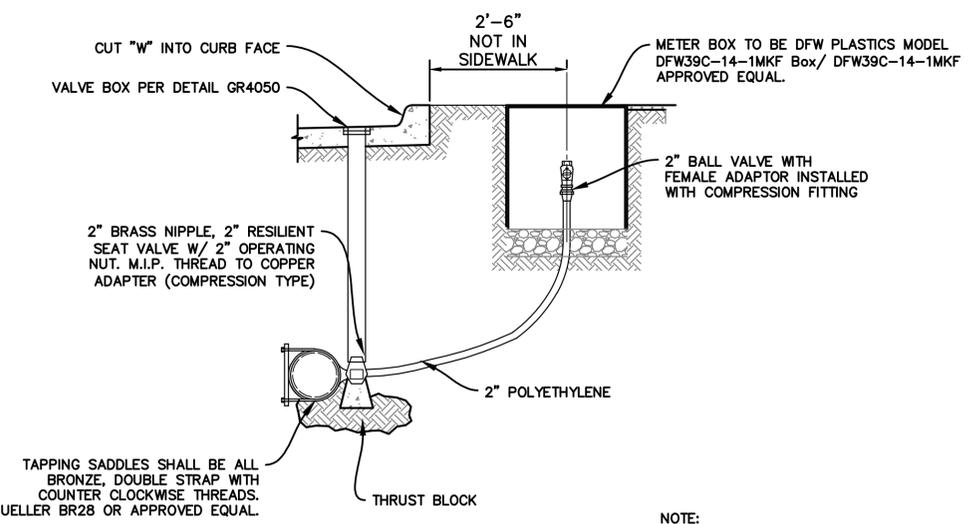
GRAPEVINE, TEXAS

City of Grapevine
Public Works Department

P.O. BOX 76099 PH 817-410-3155

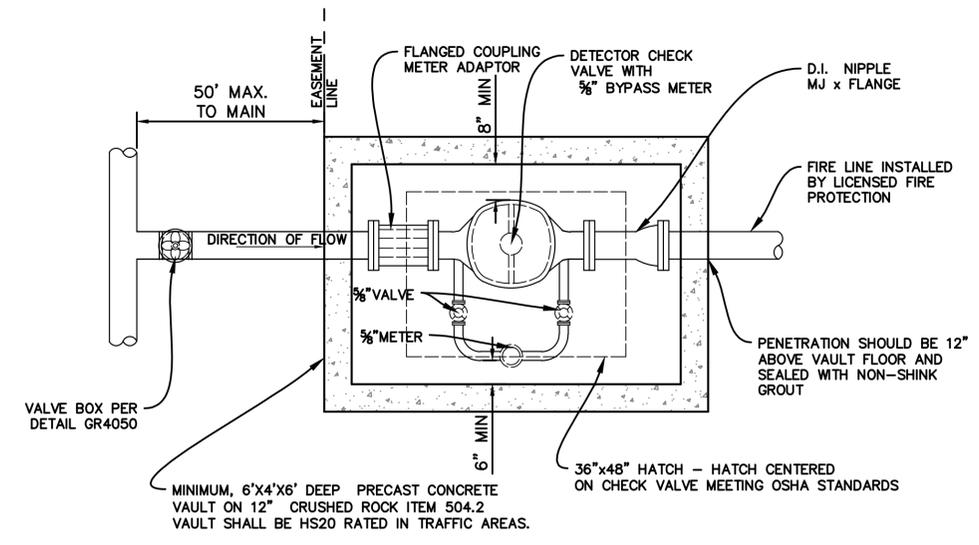
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THRUST BLOCKS

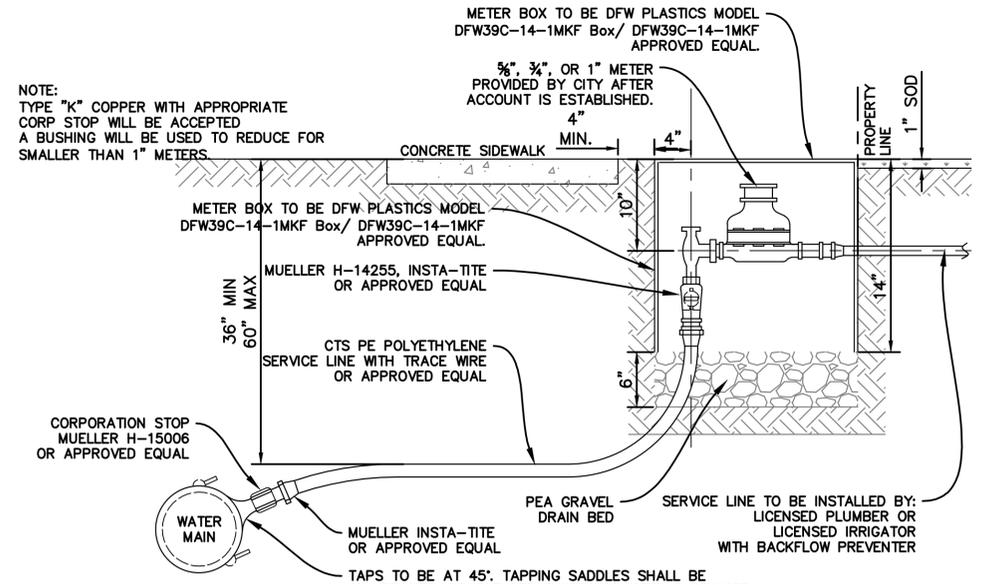


GR4110 FLUSH POINT INSTALLATION

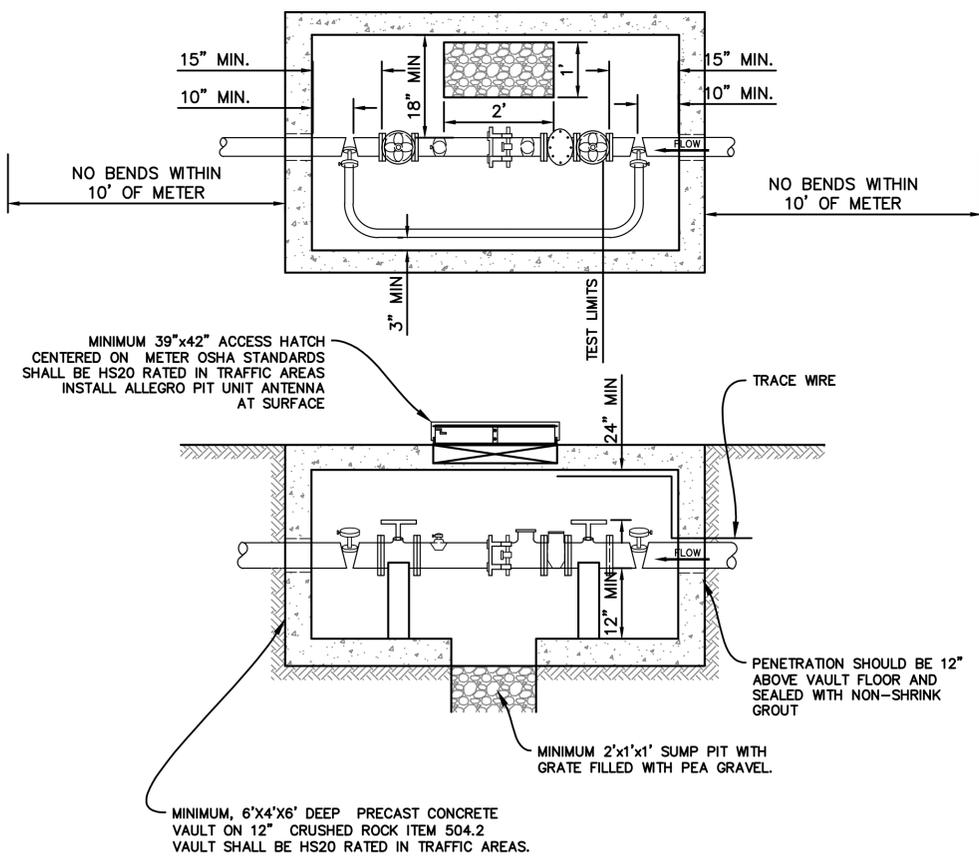
NOTE: IF POSSIBLE A FIRE HYDRANT SHOULD BE INSTALLED AS CLOSE AS POSSIBLE RATHER THAN INSTALL FLUSH POINT OR AIR/VAC



GR4160 DETECTOR CHECK BACKFLOW PREVENTER



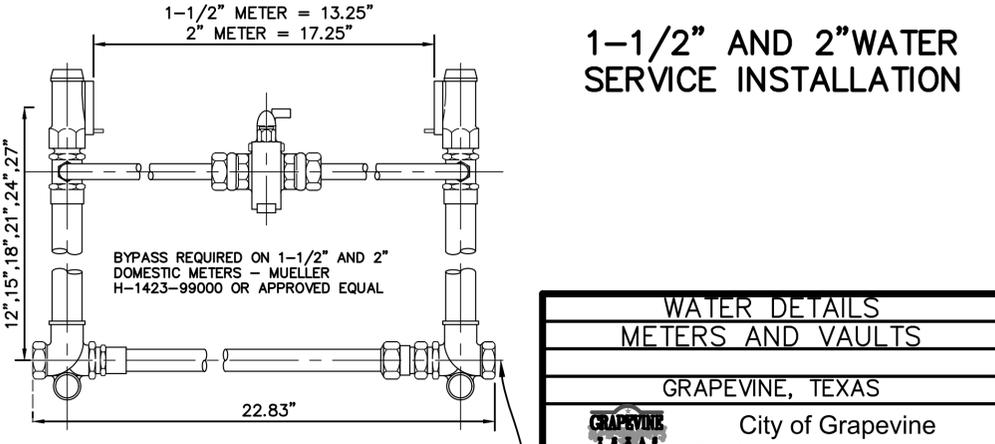
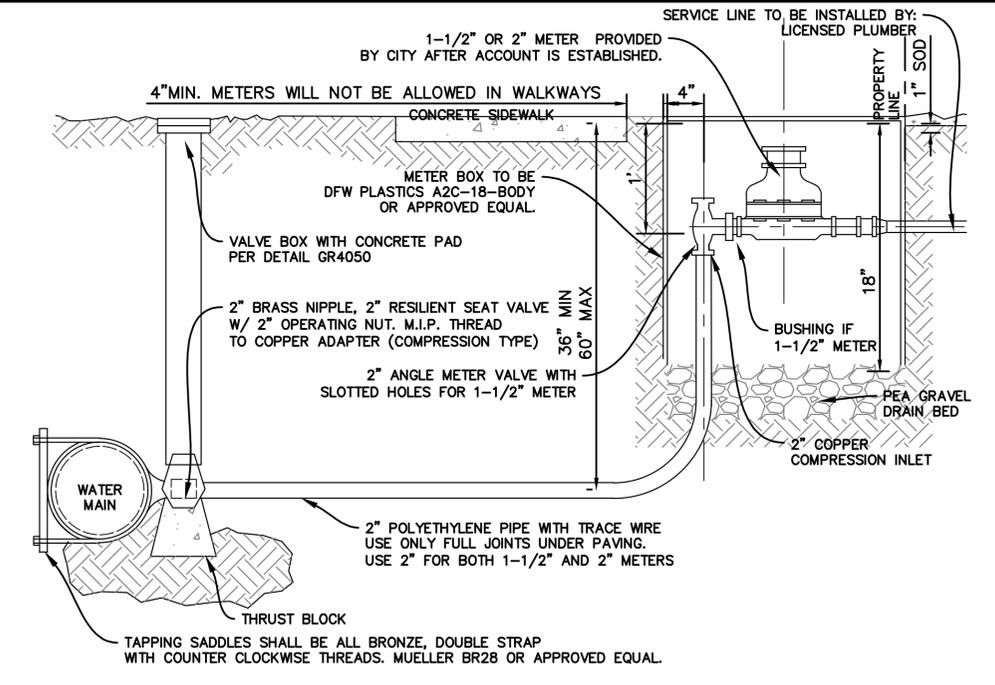
GR4130 1" AND SMALLER WATER SERVICE INSTALLATION



NOTE: METER WILL BE MASTER METER OCTAVE WITH ALLEGRO PIT UNIT, PROGRAMED WITH CITY OF GRAPEVINE FREQUENCIES. STAINLESS STEEL BOLTS AND COVER OR APPROVED EQUAL. METER AND DEVICES SHALL BE INSTALLED PER WATER DEPARTMENT STANDARD. ALLEGRO PIT UNIT ANTENNA SHALL BE INSTALLED IN THE LID.

CONTRACTOR SHALL OPEN CONTACT UTILITY BILLING DEPARTMENT AND ESTABLISH ACCOUNT WHEN METER IS INSTALLED. PHOTO OF INITIAL METER READING SHALL BE PROVIDED TO INSPECTOR. PUBLIC WORKS INSPECTOR MAY LOCK METER UNTIL ACCOUNT INFORMATION IS CONFIRMED.

GR4150 3" AND LARGER WATER SERVICE INSTALLATION



GR4140 1-1/2" AND 2" WATER SERVICE INSTALLATION

WATER DETAILS
METERS AND VAULTS

GRAPEVINE, TEXAS

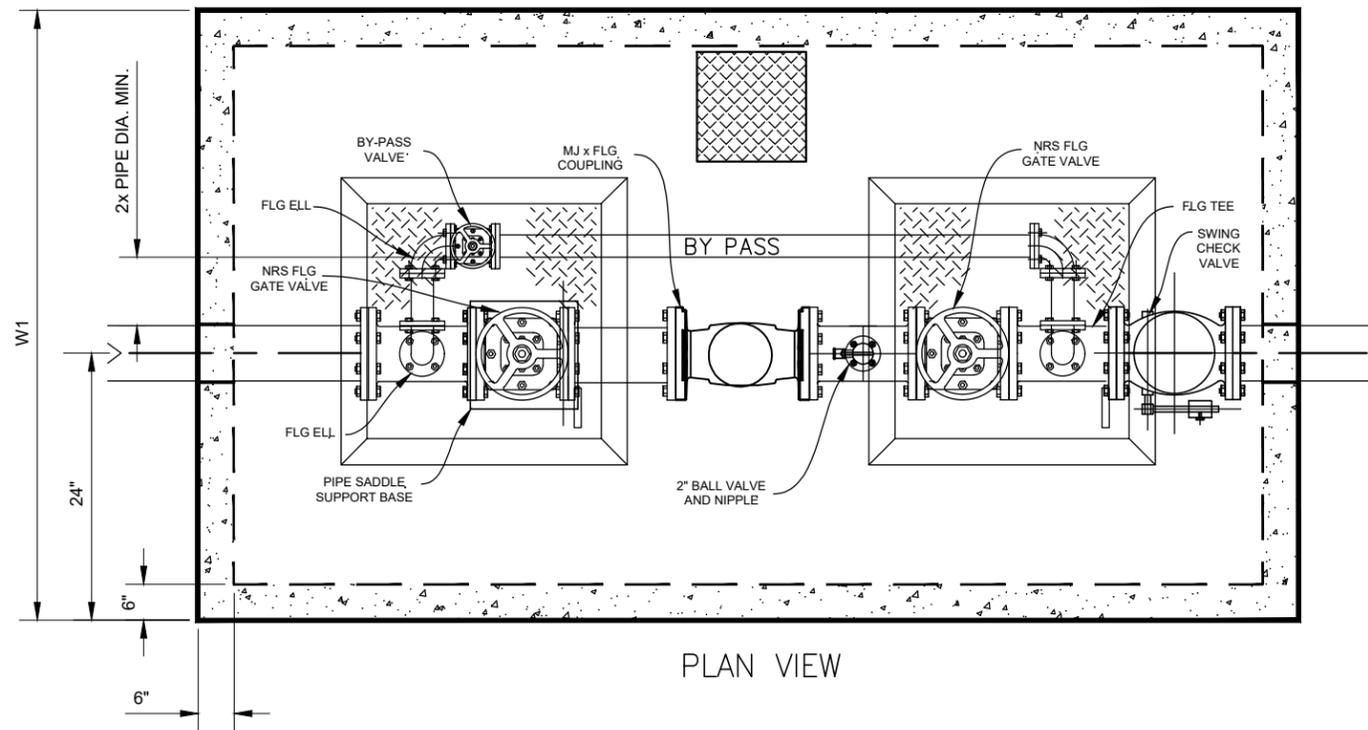
City of Grapevine
Public Works Department

P.O. BOX 76099 PH 817-410-3155

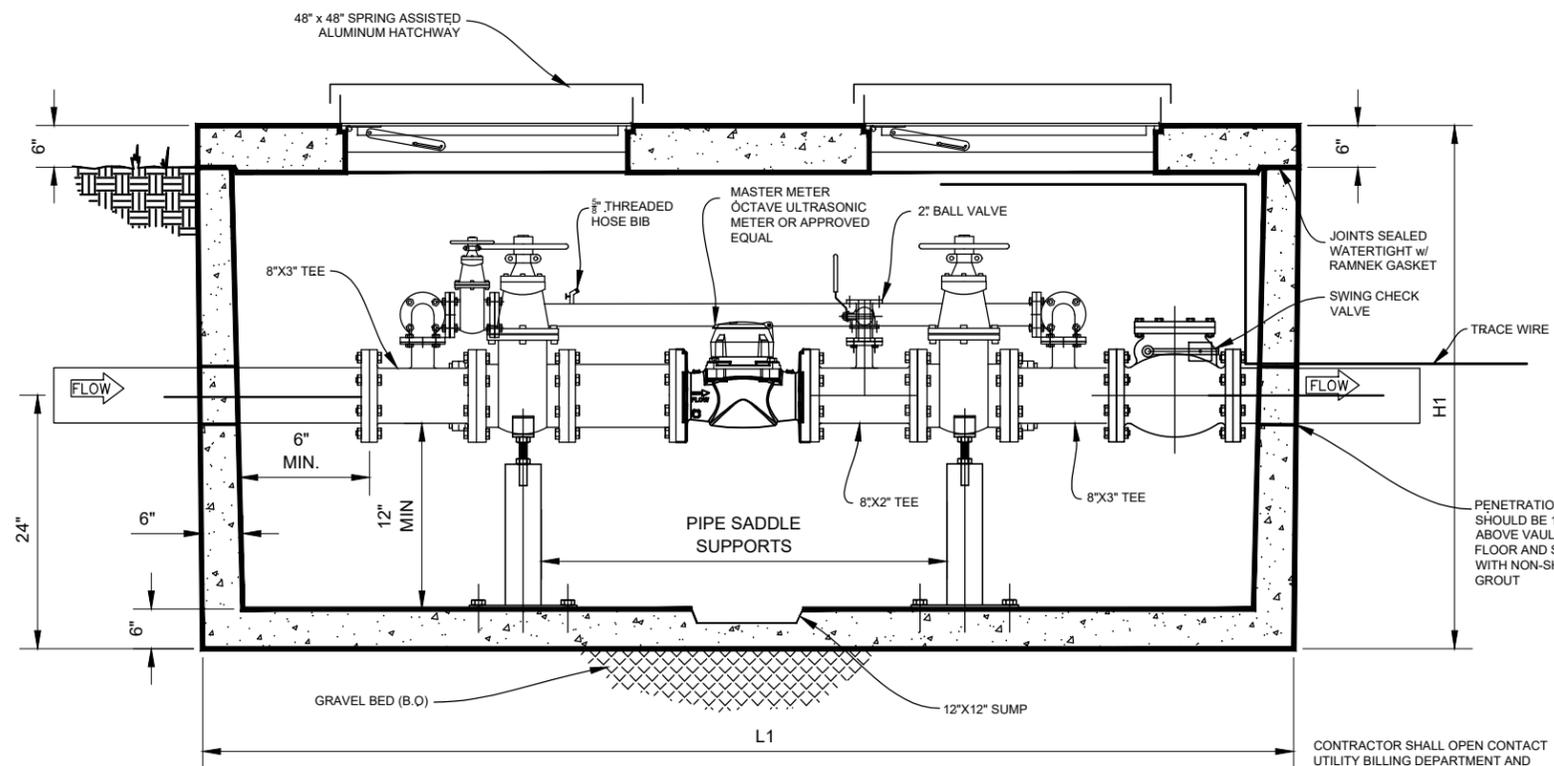
CHECKED: NTS SCALE: DATE: PROJECT No. SHEET

1-14-26 OF

METERS AND VAULTS

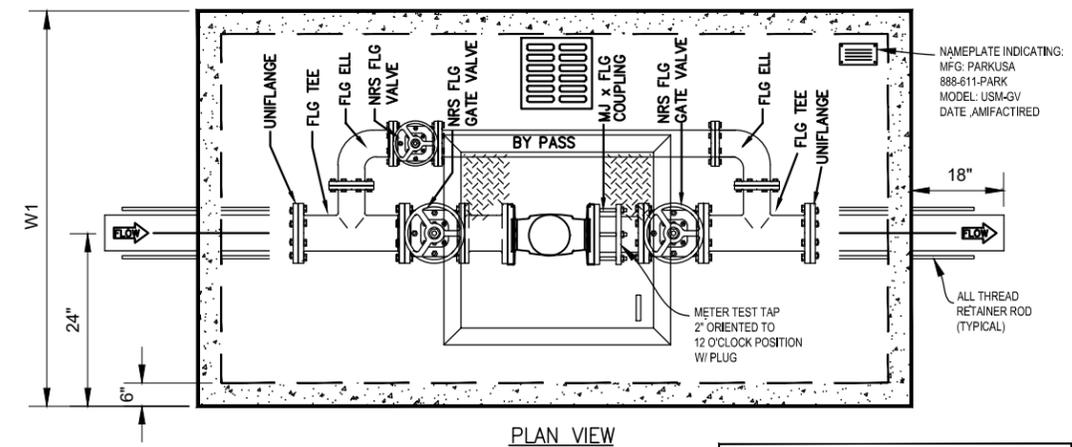


ALL VAULT FITTINGS MUST BE DOMESTIC WITH THE EXCEPTION OF THE METERING DEVICE. METERING DEVICE SHALL BE MASTER METER OCTAVE WITH ALLEGRO SMART METER INTERFACE, OR APPROVED EQUAL.

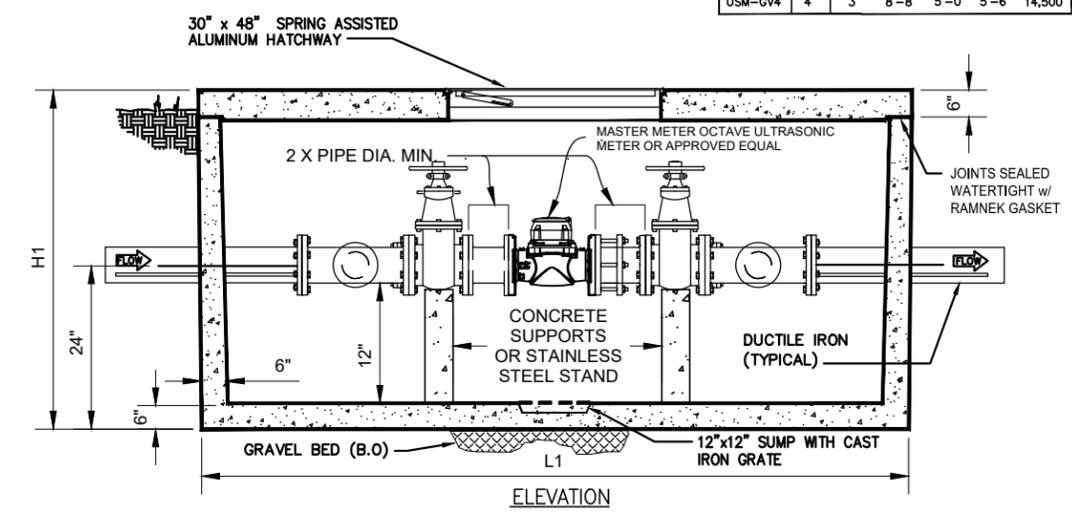


CONTRACTOR SHALL OPEN CONTACT UTILITY BILLING DEPARTMENT AND ESTABLISH ACCOUNT WHEN METER IS INSTALLED. PHOTO OF INITIAL METER READING SHALL BE PROVIDED TO INSPECTOR. PUBLIC WORKS INSPECTOR MAY LOCK METER UNTIL ACCOUNT INFORMATION IS CONFIRMED.

GR4150B 6" & LARGER METER



		DIMENSIONS					
MODEL	SIZE	BY PASS	L1	W1	H1	WEIGHT	
USM-GV3	3"	3"	8'-8"	5'-0"	5'-6"	14,000	
USM-GV4	4"	3"	8'-8"	5'-0"	5'-6"	14,500	



GR4150C 3" & 4" METER

- METER SPECS:
- SIDE MOUNTED TRANSDUCERS.
 - 12 DIGIT LCD.
 - REAL TIME FLOW RATE ON LCD.
 - STAINLESS STEEL GRADE 316 REQUIRED

- NOTES:
- VAULT WILL BE OUT OF PAVED AREA UNLESS APPROVED BY CITY ENGINEER.
 - BYPASS WILL BE SIZED BY ENGINEER TO MEET DOMESTIC SUPPLY NEEDS.
 - ALL PIPE & FITTINGS SHALL BE DUCTILE IRON WITH FLANGE.
 - METER WILL BE OCTAVE ULTRASONIC MASTER METER OR APPROVED EQUAL.
 - AUTOMATIC METER READING DEVICE SHALL BE INSTALLED PER WATER DEPARTMENT STANDARDS.

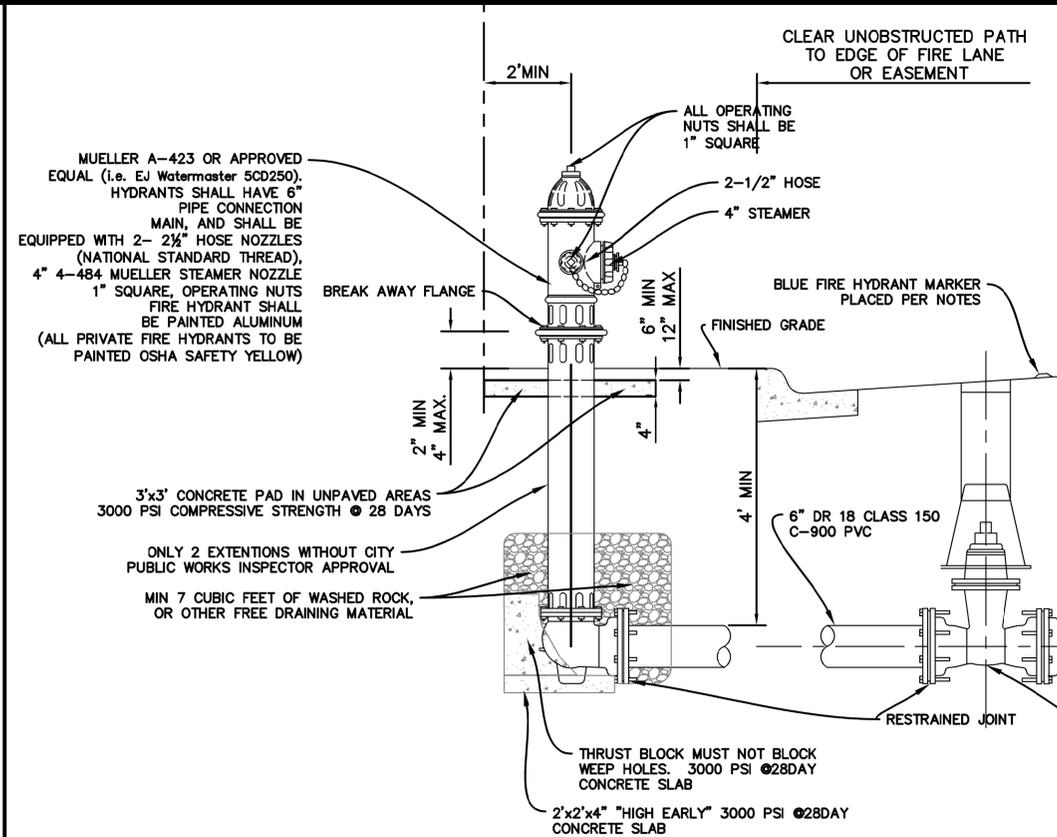
CITY OF GRAPEVINE
LARGE WATER METER DETAIL

GRAPEVINE, TEXAS

City of Grapevine
 Public Works Department
 P.O. BOX 76099 PH 817-410-3155

CHECKED: _____ DATE: 6/30/23 PROJECT No. _____ SHEET _____

LARGE WATER METER DETAIL 6/30/23



FIRE HYDRANT PLACEMENT NOTES:
 FIRE HYDRANTS SHALL NOT BE LOCATED IN SIDEWALKS, TRAILS, ADA RAMPS, PEDESTRIAN OR VEHICULAR TRAVEL LANES.

AREAS AROUND FIRE HYDRANTS SHALL BE KEPT CLEAR OF ALL OBSTRUCTION FOR 3' IN ALL DIRECTIONS. (I.E. FENCES, PLANTINGS, TREES)

A CLEAR 3' PATH SHALL BE MAINTAINED FROM THE HYDRANT TO THE NEAREST FIRE LANE OR PUBLIC ROADWAY

HYDRANTS SHALL BE PROTECTED BY CURBS. WHEN CURBS ARE NOT FEASIBLE, THE ENGINEER OR INSPECTOR MAY REQUIRE BOLLARDS PLACED AS TO ALLOW PROPER OPERATION.

FIRE HYDRANTS SHALL BE SET BACK FROM STREET INTERSECTIONS, DRIVEWAYS, OR OTHER CURB RETURNS WHERE THE HYDRANT MAY BECOME A HAZARD TO VEHICULAR TRAFFIC.

A MAXIMUM SPACING OF 500 FEET IN RESIDENTIAL AREAS AND 300 FEET IN COMMERCIAL OR MERCANTILE AREAS. AND WITHIN 150' HOSE LAY OF ANY POINTS OF A COMMERCIAL BUILDING

CONTRACTOR SHALL VERIFY FIRE HYDRANT PLACEMENT WITH FIRE CODE OFFICIAL

FIRE HYDRANT OPERATION MUST BE APPROVED BY CITY OF GRAPEVINE FIRE MARSHALL PRIOR TO FINAL ACCEPTANCE.

BLUE FIRE HYDRANT PAVMENT MARKER IS TO BE PLACED AS FOLLOWS:

- On unstriped roadways, blue markers shall be set in the center of the roadway.
- On undivided striped roadways, blue markers shall be set 6" to the hydrant side of the center stripe.
- On divided roadways, the blue marker shall be set 6" to the side of the lane striping which is closest to the hydrant.

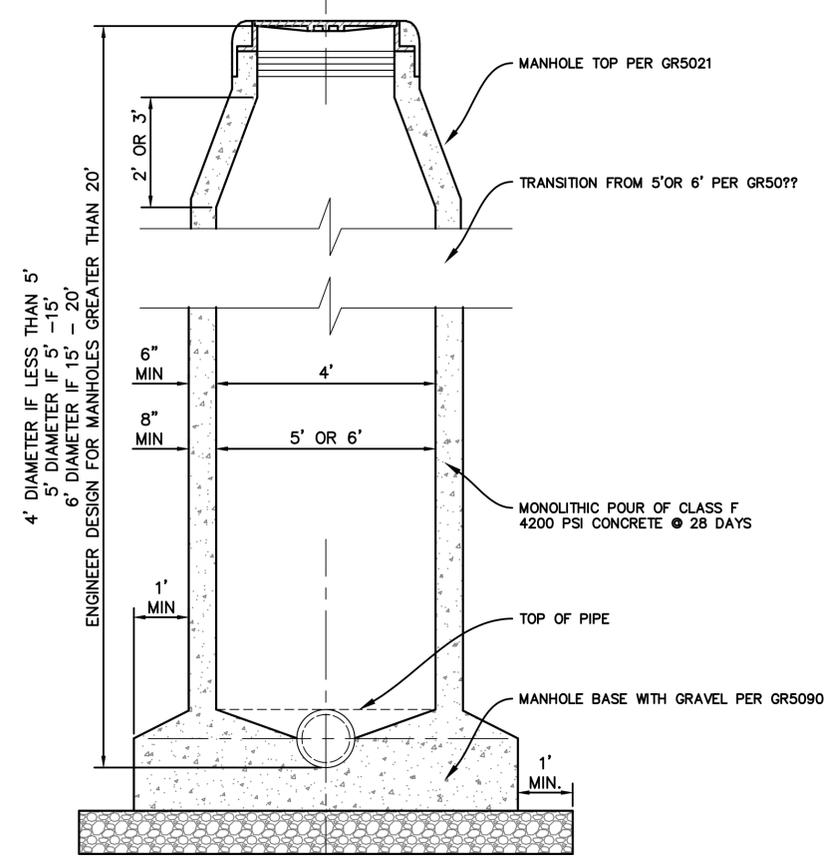
WHERE REQUIRED. THE FIRE HYDRANTS SHALL BE INSTALLED AT THE LOCATION DIRECTED BY THE CITY ENGINEER OR AS DIRECTED BY THE FIRE CODE OFFICIAL. UNLESS APPROVED BY THE CITY ENGINEER AND THE FIRE CODE OFFICIAL, FIRE HYDRANTS SHALL HAVE A MAXIMUM SPACING OF 500 FEET IN RESIDENTIAL AREAS AND 300 FEET IN COMMERCIAL OR MERCANTILE AREAS. THEY SHALL BE SET TRULY VERTICAL AND SECURELY BRACED WITH CONCRETE BLOCKS UNTIL SELF-STANDING, AND SHALL BE SURROUNDED WITH A MINIMUM OF SEVEN CUBIC FEET OF WASHED GRAVEL OR STONE.

FIRE HYDRANT ASSEMBLY

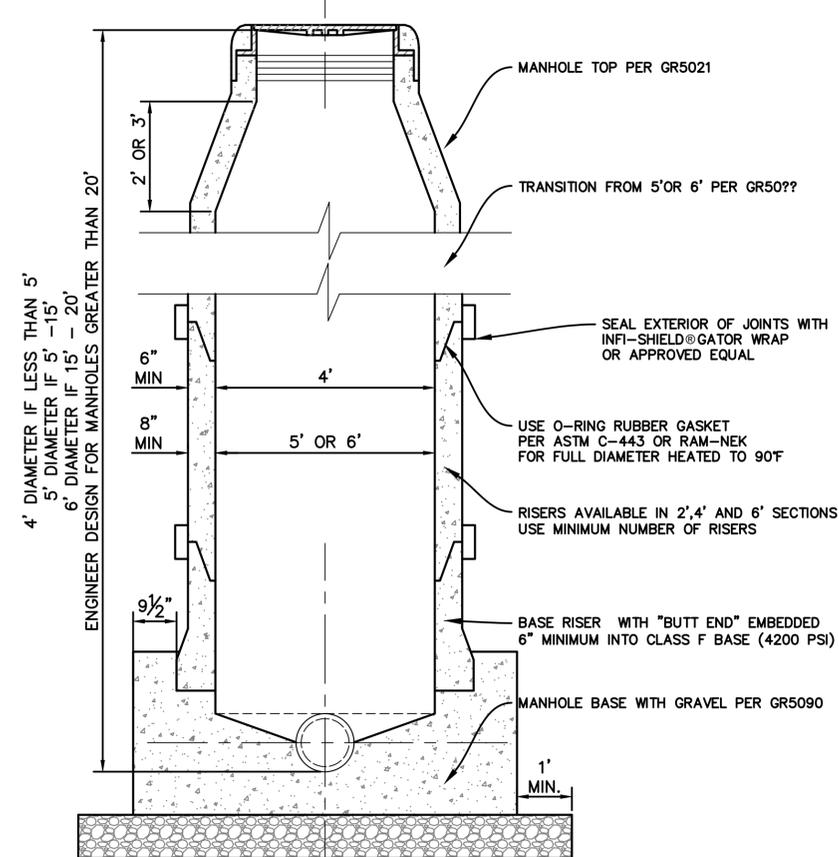
GR4120

WATER DETAILS				
FIRE HYDRANT				
GRAPEVINE, TEXAS				
 City of Grapevine Public Works Department				
P.O. BOX 76099 PH 817-410-3155				
CHECKED:	SCALE:	DATE:	PROJECT No.	SHEET
NTS		1-13-20		OF

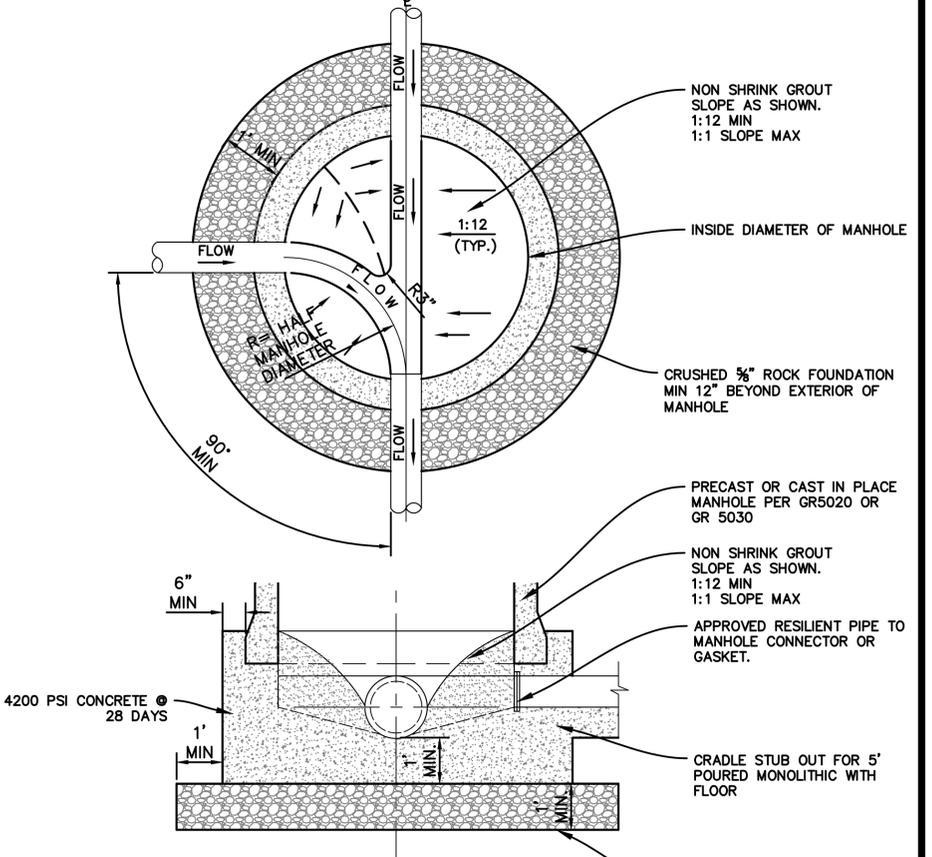
FIRE HYDRANT DETAILS



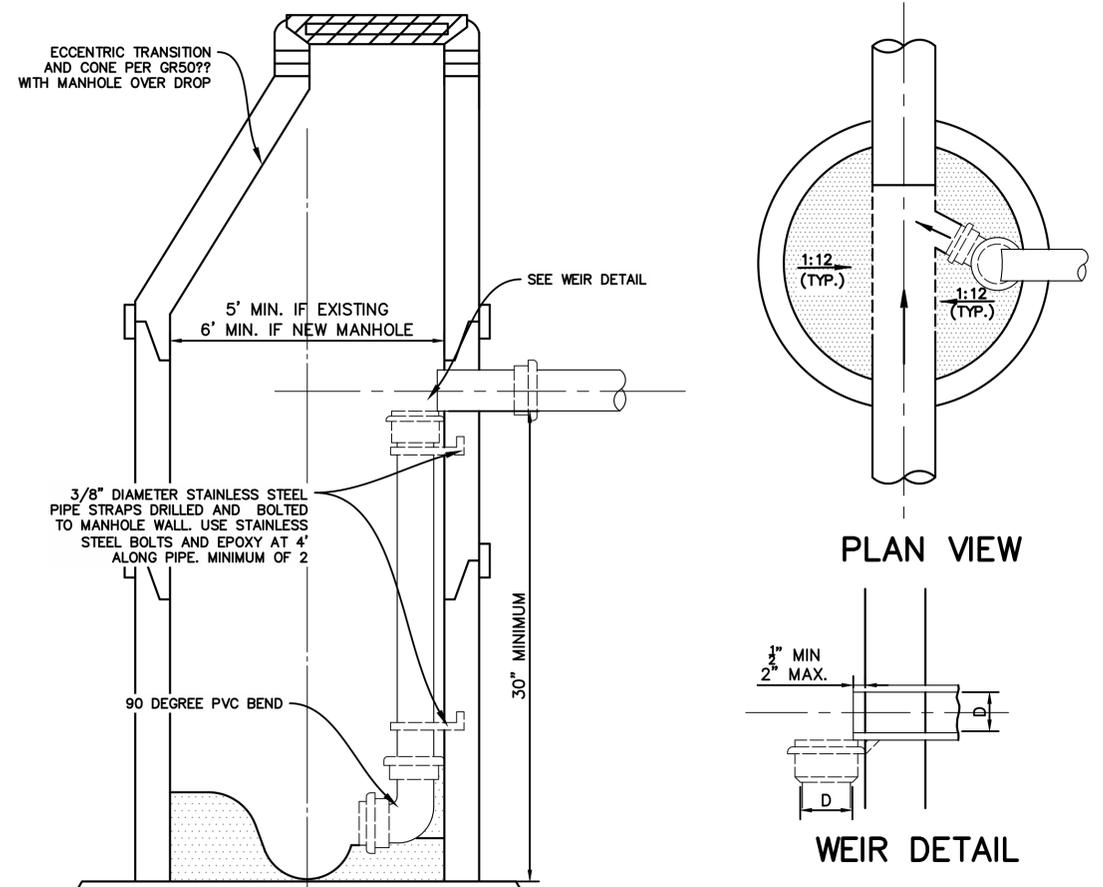
GR5030 CAST-IN-PLACE MANHOLE



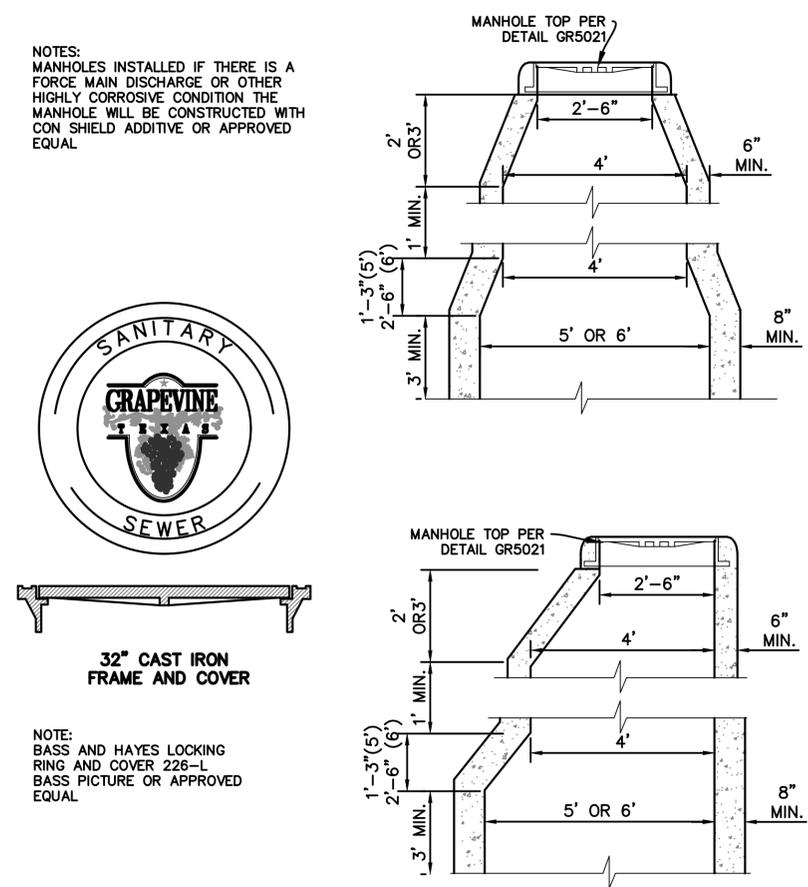
GR5020 PRE-CAST MANHOLE



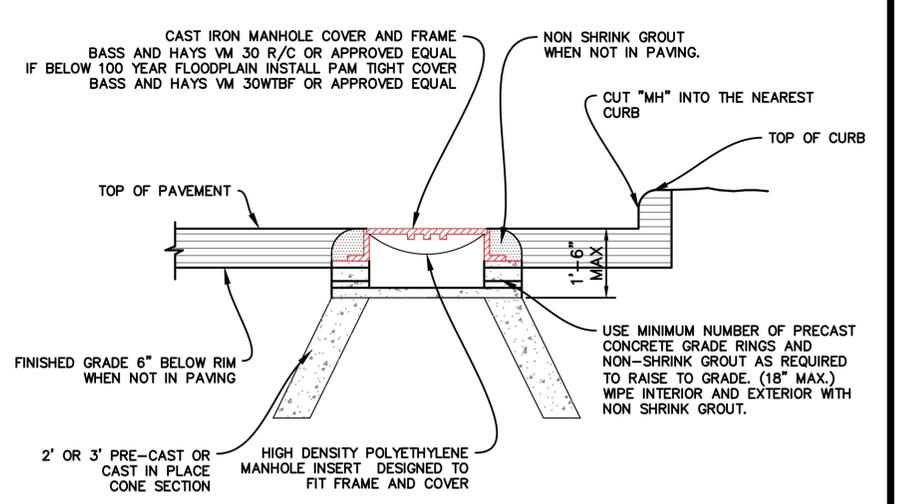
GR5090 MANHOLE BASE



DROP MANHOLE GR5030



MANHOLE TOP GR5021



SANITARY SEWER DETAILS				
MANHOLES				
GRAPEVINE, TEXAS				
City of Grapevine Public Works Department				
P.O. BOX 76099 PH 817-410-3155				
CHECKED:	SCALE:	DATE:	PROJECT No.	SHEET
NTS		4-18-18		OF

MANHOLE DETAILS

NOTES:
PRECAST REINFORCED CONCRETE SHALL BE OF THE BELL AND SPIGOT OR TONGUE AND GROOVE DESIGN MEETING THE REQUIREMENTS OF ASTM SPEC C-478 HAVING A WALL THICKNESS ASTM SPEC C-76 WALL B.

NOTES:
MANHOLES INSTALLED IF THERE IS A FORCE MAIN DISCHARGE OR OTHER HIGHLY CORROSIVE CONDITION THE MANHOLE WILL BE CONSTRUCTED WITH CON SHIELD ADDITIVE OR APPROVED EQUAL



NOTE:
BASS AND HAYS LOCKING RING AND COVER 226-L BASS PICTURE OR APPROVED EQUAL

NOTES:
MANHOLES TO BE TESTED BY INDEPENDENT LAB MEETING NTCOG SPECIFICATIONS PRIOR TO ACCEPTANCE.

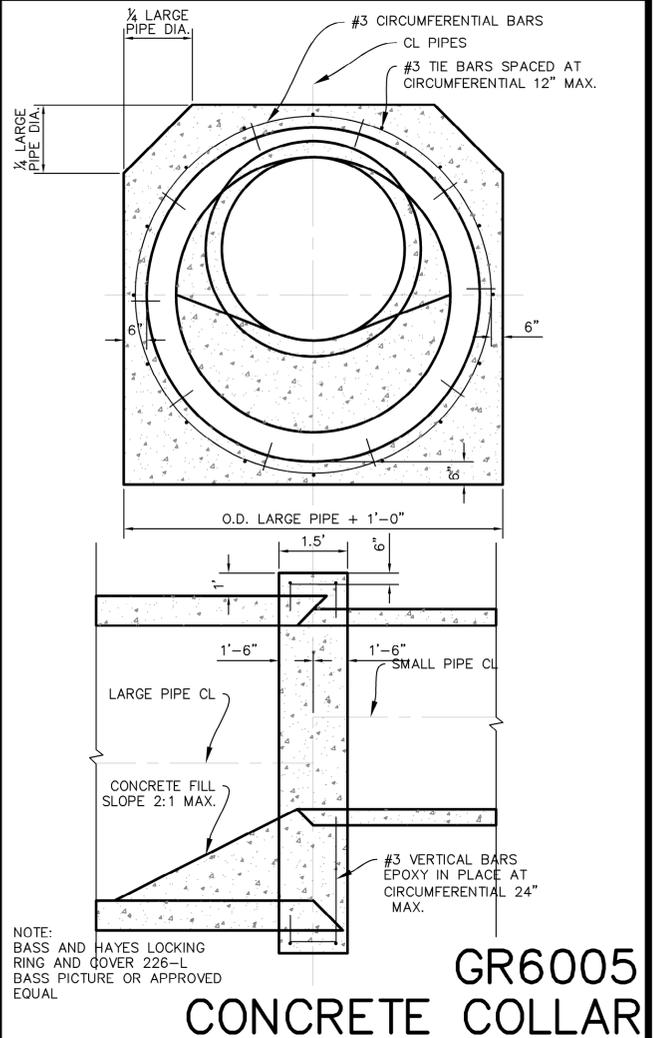
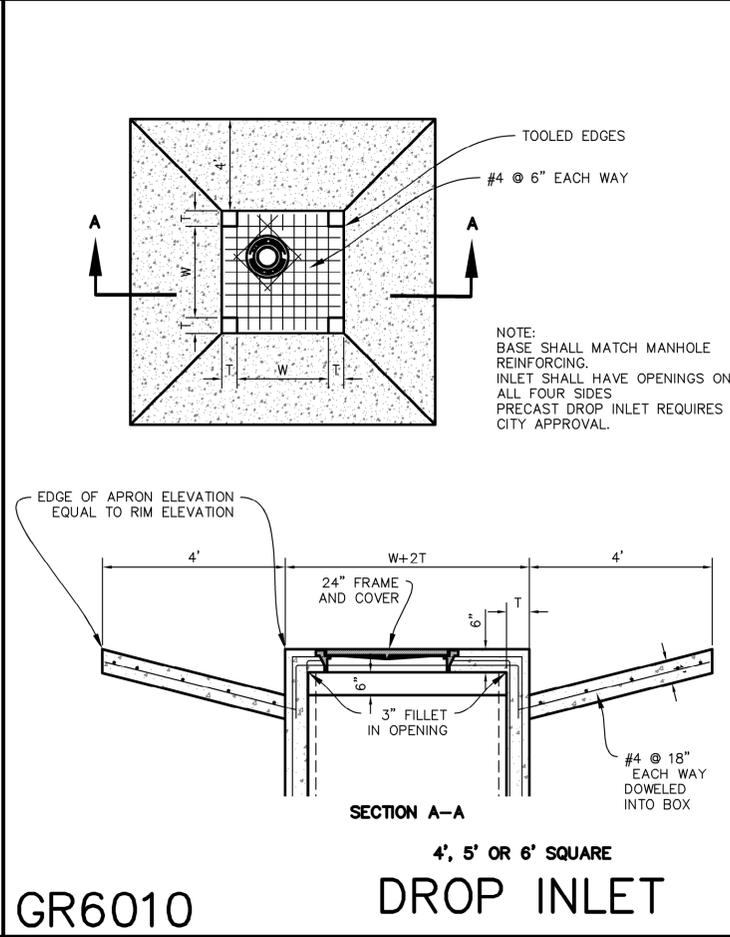
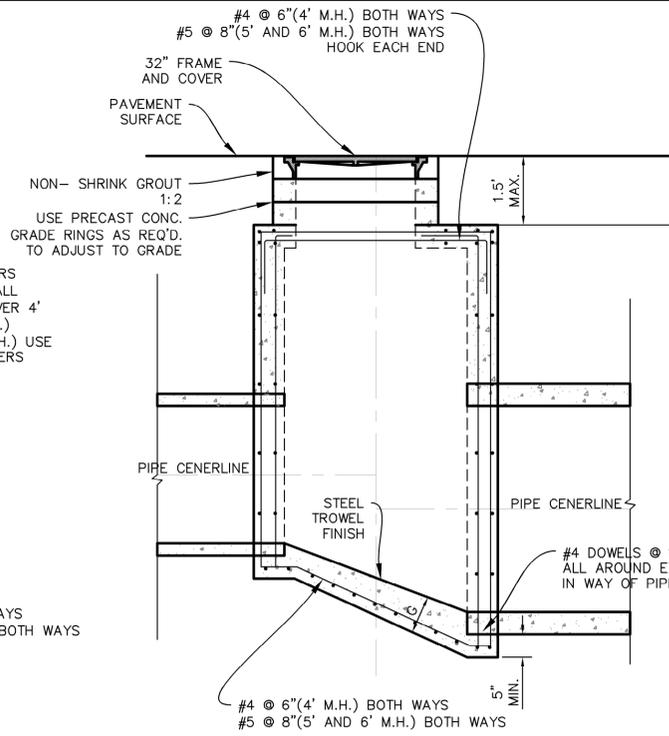
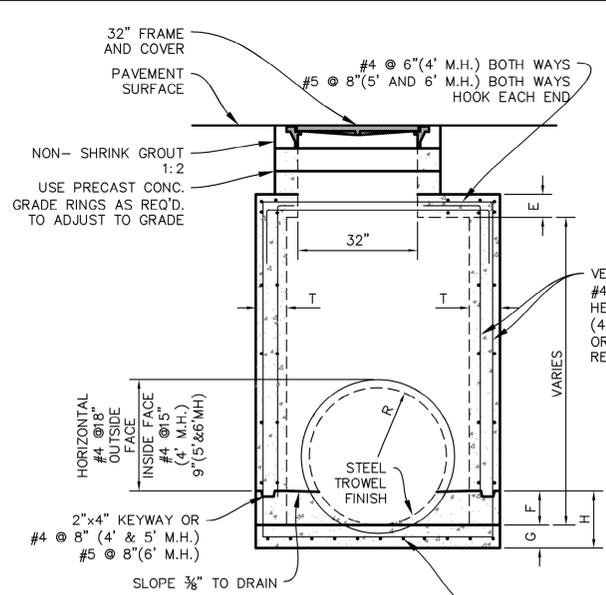
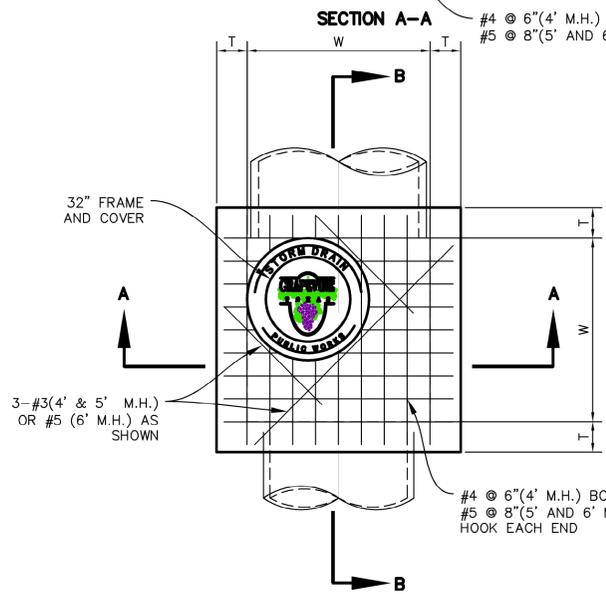


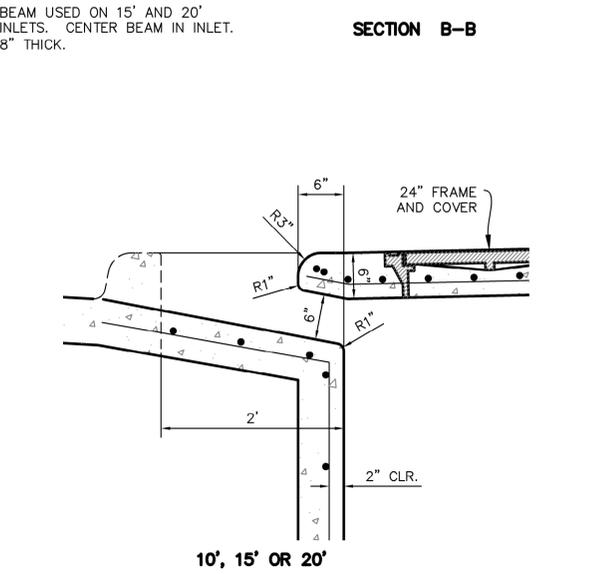
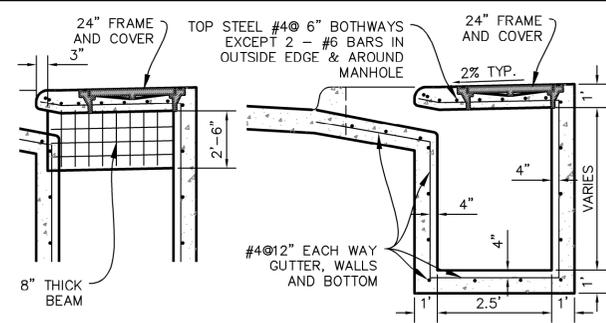
Table of Dimensions

M.H. SIZE (W)	V	T	E	F	G	H	MAX RCP SIZE (IN)
3'	4'	6"	6"	6"	6"	1'	18"
4'	5'-4"	8"	6"	9"	6"	1'-3"	36"
5'	6'-4"	8"	6"	12"	8"	1'-8"	45"
6'	7'-6"	9"	9"	16"	10"	2'-2"	54"

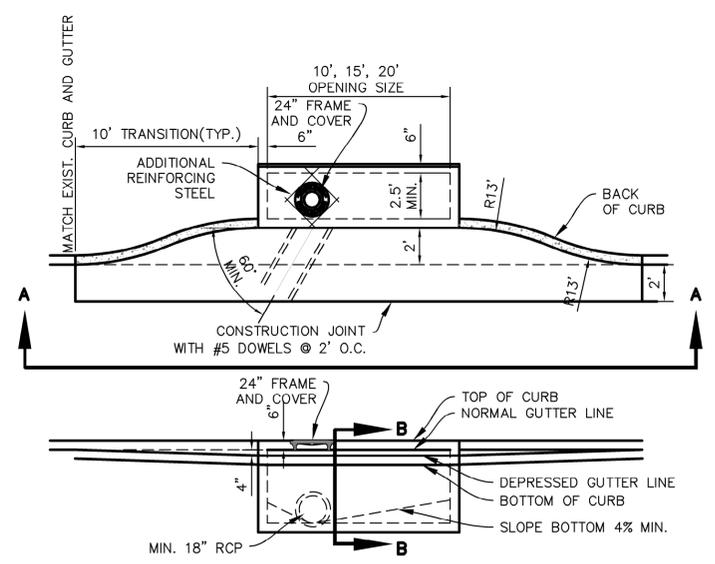
4', 5' OR 6' SQUARE



GR6010
STORMWATER MANHOLE



RECESSED CURB INLET



- NOTE:
1. IN GENERAL, REINFORCING STEEL SHALL BE #4 BARS ON 12" CENTERS BOTH WAYS FOR GUTTER, BOTTOM SLAB ENDS, FRONT AND BACK WALLS, AND #4 BARS ON 6" CENTERS BOTH WAYS FOR TOP SLAB. AN ADDITIONAL #6 BAR SHALL BE PLACED IN THE FRONT EDGE OF THE TOP SLAB IN THE INLETS AND ADDITIONAL REINFORCING STEEL SHALL BE PLACED AROUND MANHOLES AS SHOWN.
 2. ALL REINFORCING STEEL SHALL BE GRADE 60.
 3. ALL CONCRETE SHALL HAVE A MIN. COMPRESSIVE STRENGTH OF 3600 PSI @ 28 DAYS. (CLASS "A" CONCRETE)
 4. ALL REINFORCING STEEL SHALL HAVE A MINIMUM COVER OF 2" TO THE CENTERS OF THE BARS.
 5. 10'-0" OF EXISTING CURB AND GUTTER UPSTREAM AND 10'-0" OF EXISTING CURB AND GUTTER DOWNSTREAM SHALL BE REMOVED AND REPOURED INTEGRALLY WITH EACH INLET.
 6. ALL BACK FILLING SHALL BE COMPACTED TO 95% STANDARD PROCTOR DENSITY.
 7. ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4".

GR6030

NOTE: BASS AND HAYES LOCKING RING AND COVER 226-L BASS PICTURE OR APPROVED EQUAL

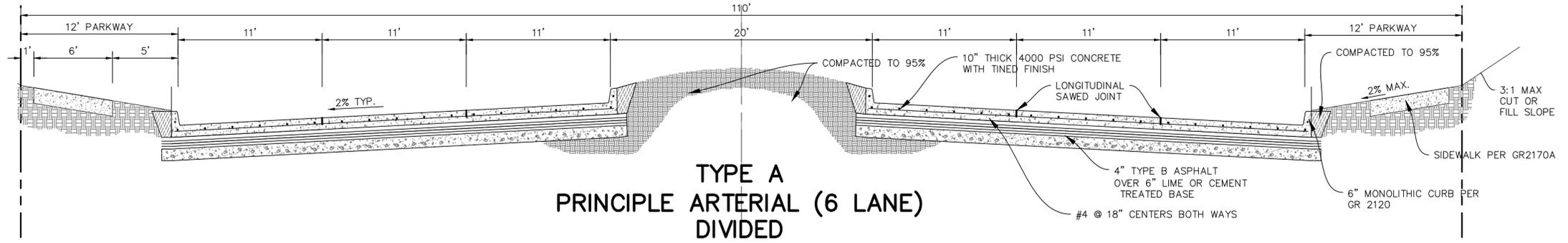
STORM DRAIN
DETAILS
GRAPEVINE, TEXAS

City of Grapevine
Public Works Department
P.O. BOX 76099 PH 817-410-3155

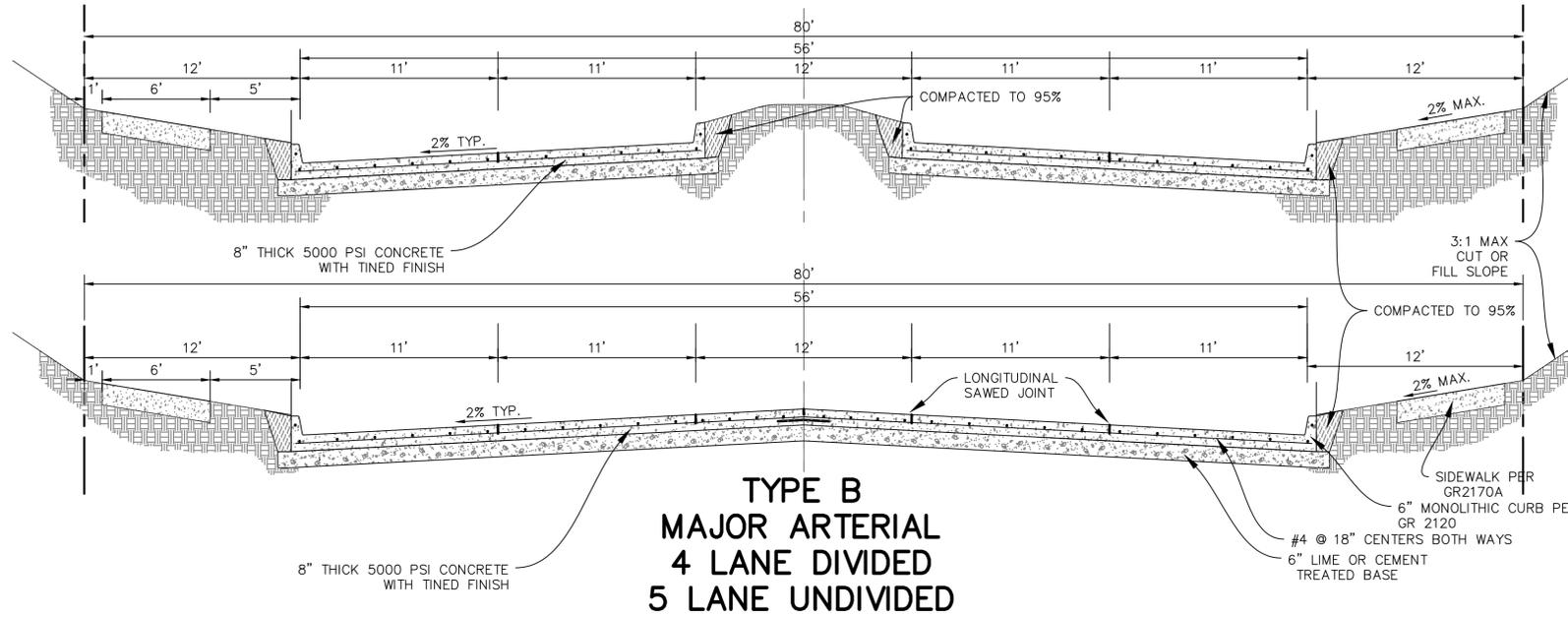
CHECKED: SCALE: DATE: PROJECT No. SHEET

NTS 1-9-2020

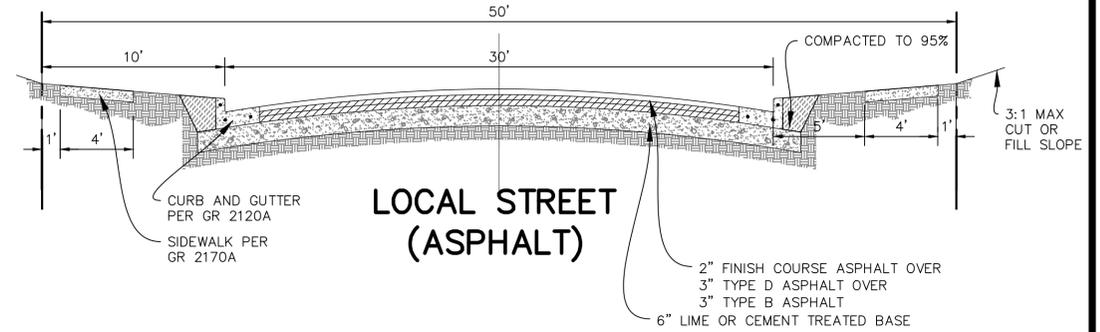
STORM DRAIN DETAILS



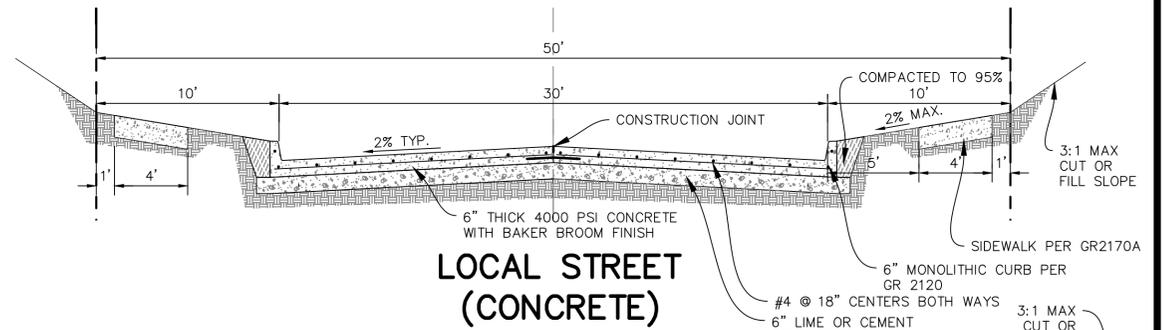
**TYPE A
PRINCIPLE ARTERIAL (6 LANE)
DIVIDED**



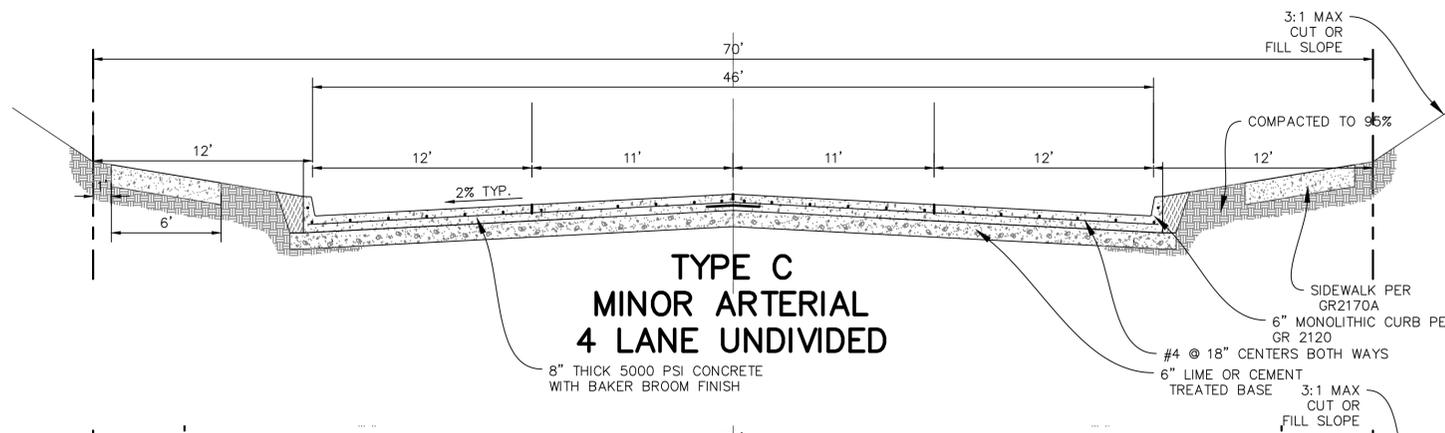
**TYPE B
MAJOR ARTERIAL
4 LANE DIVIDED
5 LANE UNDIVIDED**



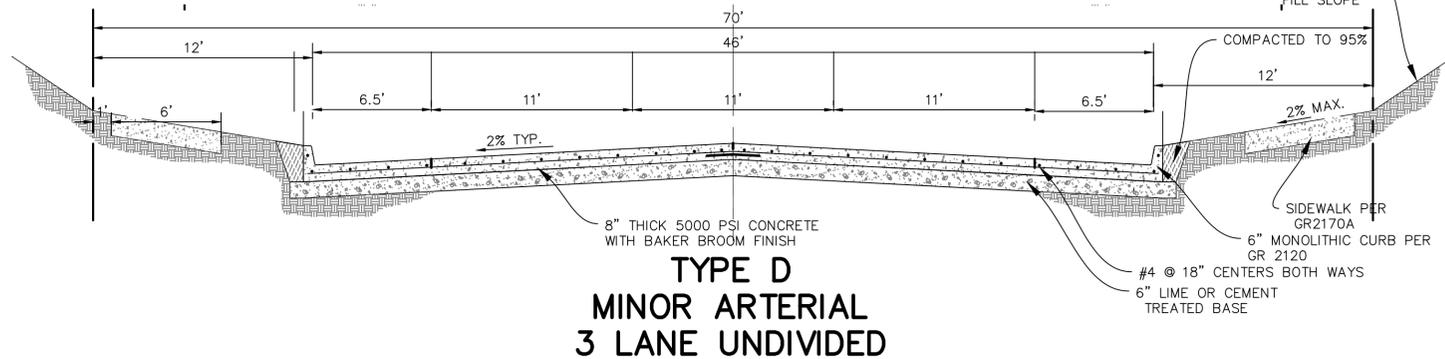
**LOCAL STREET
(ASPHALT)**



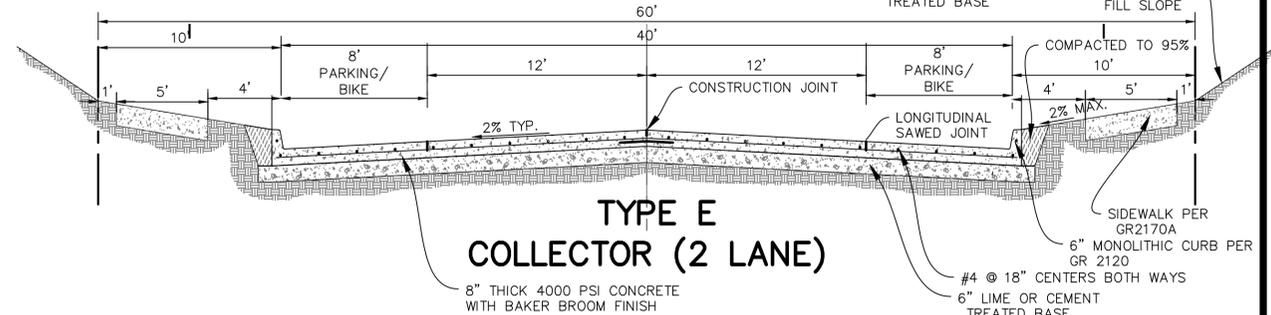
**LOCAL STREET
(CONCRETE)**



**TYPE C
MINOR ARTERIAL
4 LANE UNDIVIDED**



**TYPE D
MINOR ARTERIAL
3 LANE UNDIVIDED**

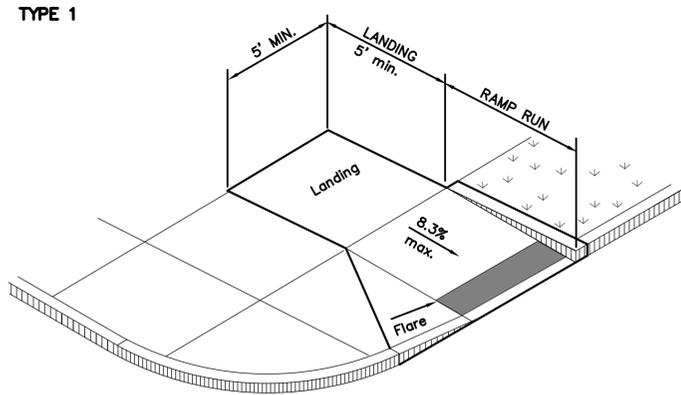


**TYPE E
COLLECTOR (2 LANE)**

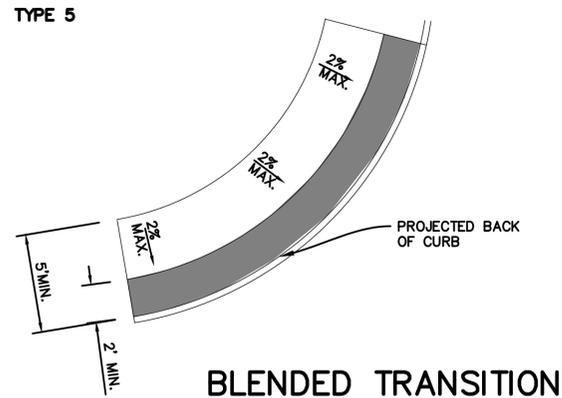
- NOTES:
1. PAVING SHALL HAVE TRANSVERSE JOINTS AT 15' MAXIMUM SPACING AND AT PC'S, PT'S, AND CURB RETURNS.
 2. JOINTS SHALL BE CUT AS SOON AS PAVEMENT CAN BE TRAVERSED WITHOUT DAMAGE TO FINISH.
 3. CONSTRUCTION JOINTS WILL BE PLACED AT THE CROWN OF THE STREET.
 4. LONGITUDINAL JOINTS WILL BE CUT AT LANE SPACING.
 5. PAVING SHALL BE REINFORCED WITH #4 STEEL @ 18" CENTER. SPLICES WILL HAVE A MINIMUM OF 30 BAR DIAMETERS.
 6. LOCAL AND COLLECTORS SHALL BE 4000 PSI CONCRETE @28 DAYS
 7. ARTERIALS SHALL BE 5000 PSI CONCRETE @28 DAYS
 8. SUB-GRADE TO BE LIME OR CEMENT TREATED VERIFIED BY A GEOTECHNICAL ENGINEER PRIOR TO CONSTRUCTION WITH A MINIMUM OF 6%
 9. ALL DISTURBED SOIL SHALL BE COMPACTED TO A MINIMUM OF 95% STANDARD PROCTOR
 10. AN APPROVED WHITE PIGMENTED CURING COMPOUND SHALL BE APPLIED TO ALL EXPOSED SURFACES WITHIN 30-60 MINUTES AFTER CONCRETE IS PLACED.
 11. BAKER BROOM FINISH WILL BE USED ON MINOR ARTERIALS, COLLECTOR AND LOCAL STREETS. TINED FINISH WILL BE USED ON MAJOR ARTERIALS.
 12. ALL INLETS WILL BE SEPARATED FROM THE PAVEMENT AND CURB BY BOXING AROUND INLETS AS SHOWN ON INLET DETAIL.
 13. TACK COAT A CLEAN SURFACE AT A RATE BETWEEN 0.9 TO 0.10 GALLONS/SY.
 14. ALL HOT MIX ASPHALT SHALL BE COMPACTED TO 90% OF MAXIMUM THEORETICAL DENSITY.

STREET			
SECTIONS			
GRAPEVINE, TEXAS			
 City of Grapevine Public Works Department P.O. BOX 76099 PH 817-410-3155			
CHECKED:	SCALE:	DATE:	PROJECT No. SHEET
	1"=5'H 1"=2.5'	1-9-2020	OF

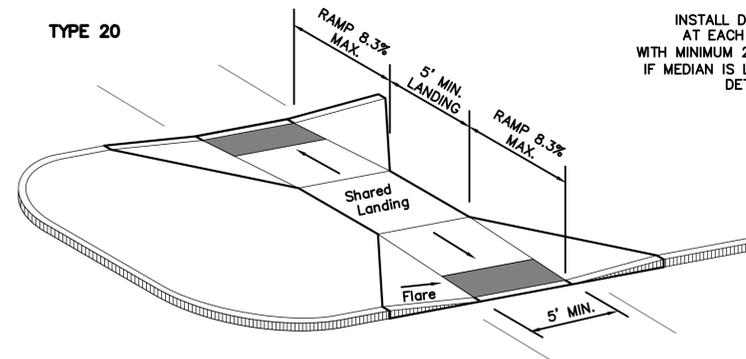
STREET SECTIONS



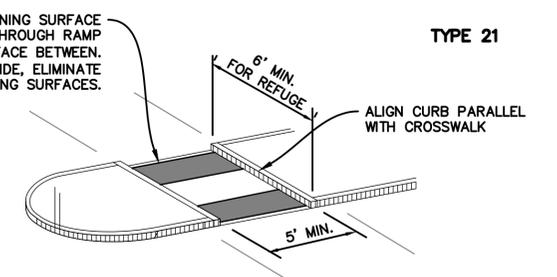
PERPENDICULAR CURB RAMP



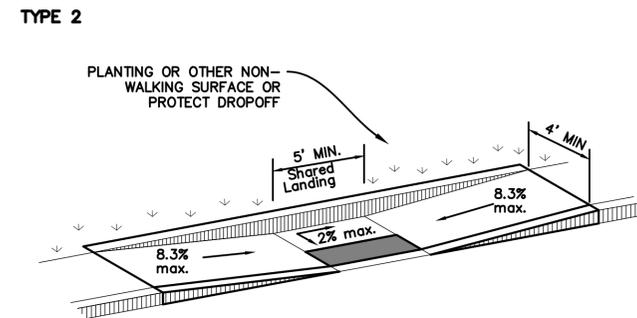
BLENDED TRANSITION



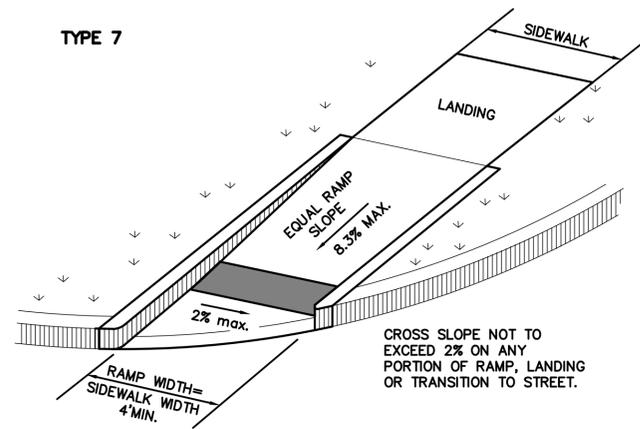
CURB RAMPS AT MEDIAN ISLANDS



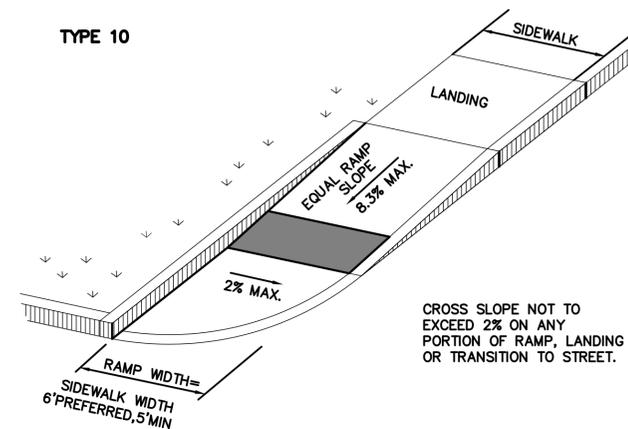
TYPE 21



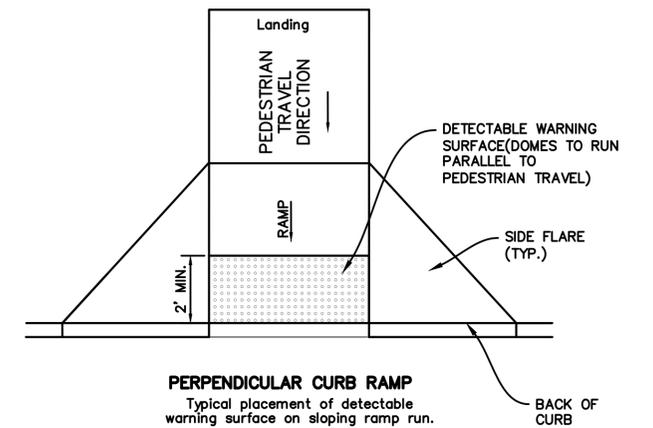
PARALLEL CURB RAMP
(USE ONLY WHERE WATER WILL NOT POND IN THE LANDING.)



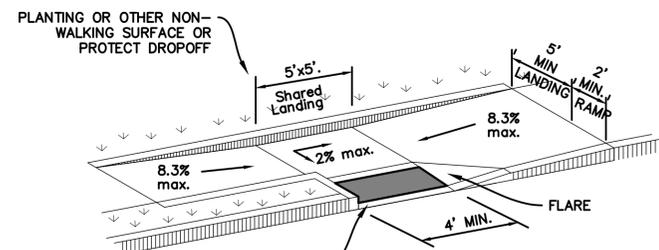
(SIDEWALK SET BACK FROM CURB)



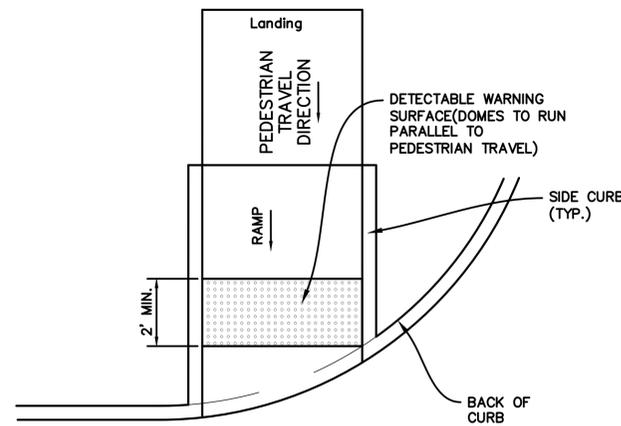
(SIDEWALK ADJACENT TO CURB)



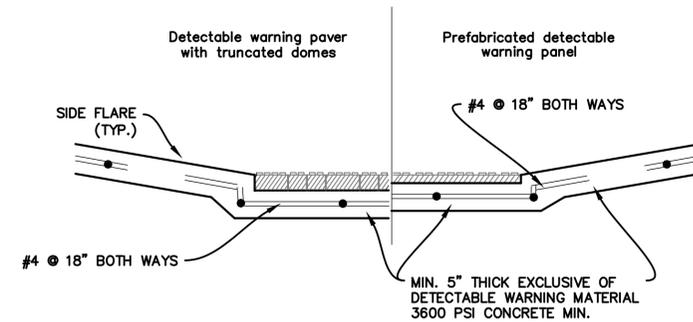
PERPENDICULAR CURB RAMP
Typical placement of detectable warning surface on sloping ramp run.



PARALLEL CURB RAMP

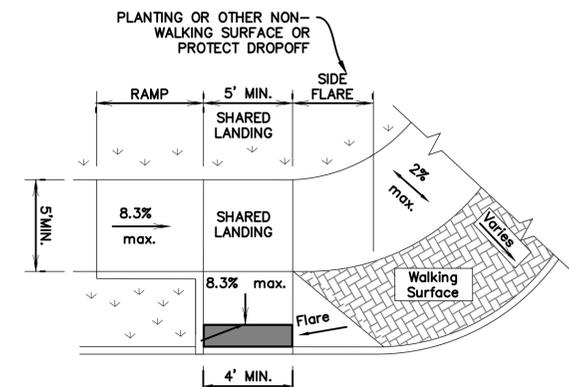


DIRECTIONAL CURB RAMP
Typical placement of detectable warning surface on sloping ramp run.

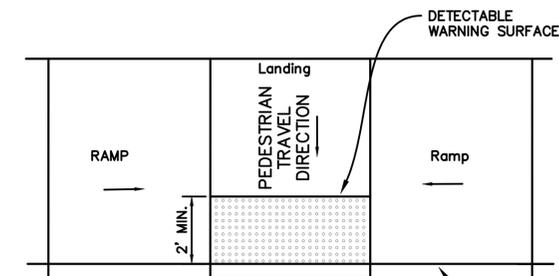


SECTION: CURB RAMP AT DETECTABLE WARNING

NOTES / LEGEND:
See General Notes on sheet for more information.
Denotes planting or non-walking surface not part of pedestrian circulation path.



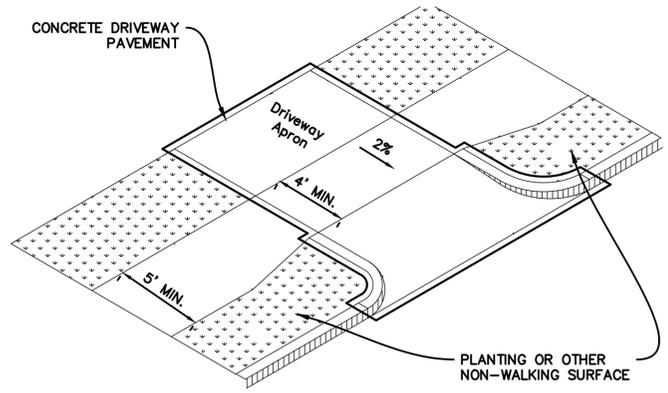
COMBINATION CURB RAMPS



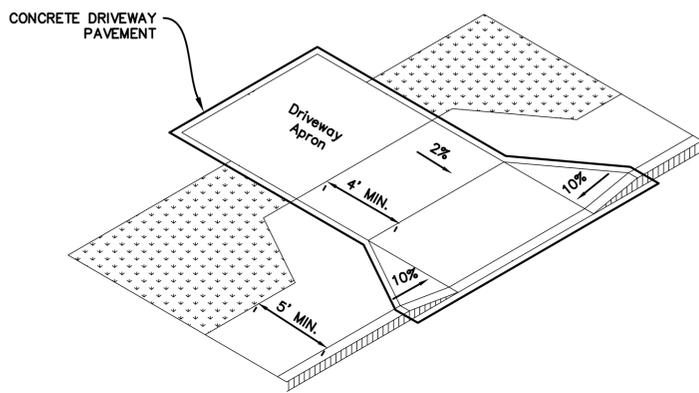
PARALLEL CURB RAMP
Typical placement of detectable warning surface on landing at street edge.

Curb Ramp				
Details				
GRAPEVINE, TEXAS				
City of Grapevine				
Public Works Department				
<small>P.O. BOX 76099 PH 817-410-3155</small>				
<small>CHECKED:</small>	<small>SCALE:</small>	<small>DATE:</small>	<small>PROJECT No.</small>	<small>SHEET</small>
	<small>NTS</small>	<small>1-10-2020</small>		<small>OF</small>

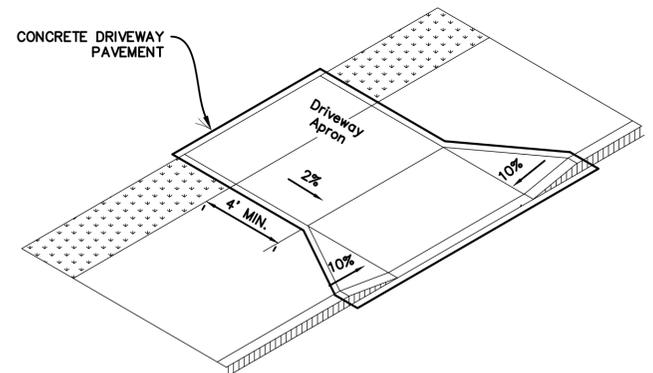
CURB RAMP DETAILS



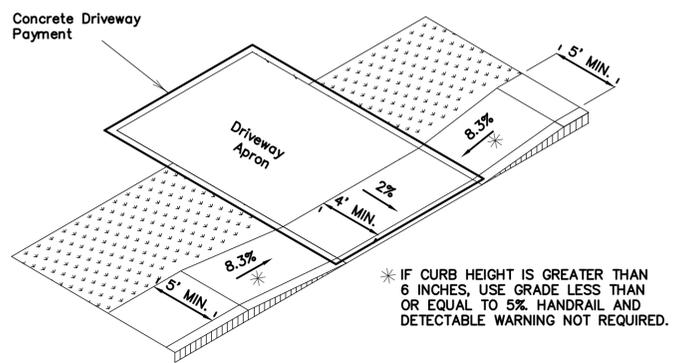
Setback sidewalk



Apron offset sidewalk

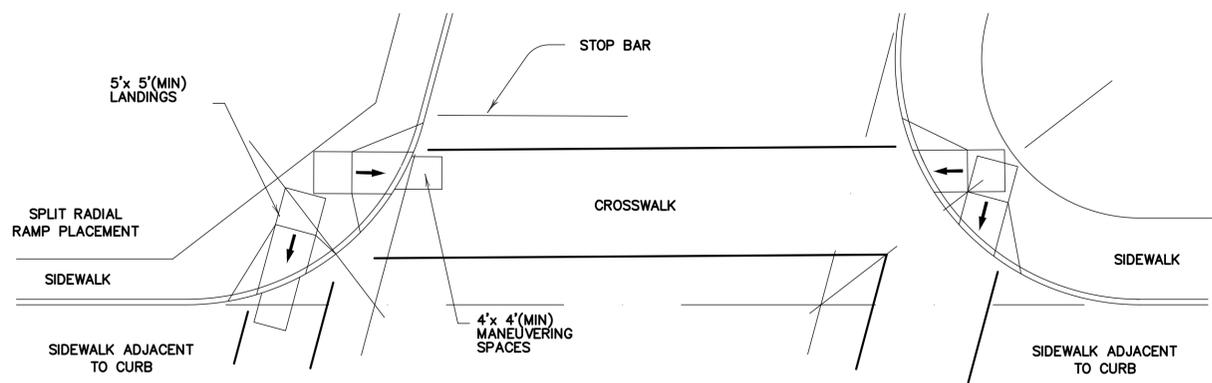


Wide sidewalk

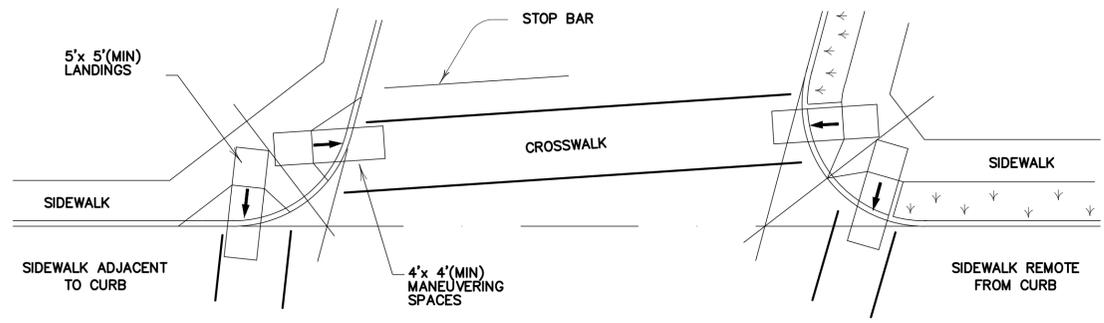


Ramp sidewalk

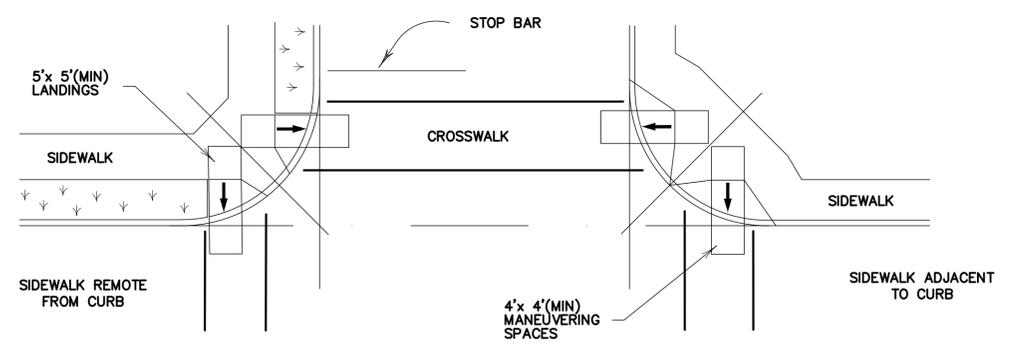
SIDEWALK TREATMENT AT DRIVEWAYS



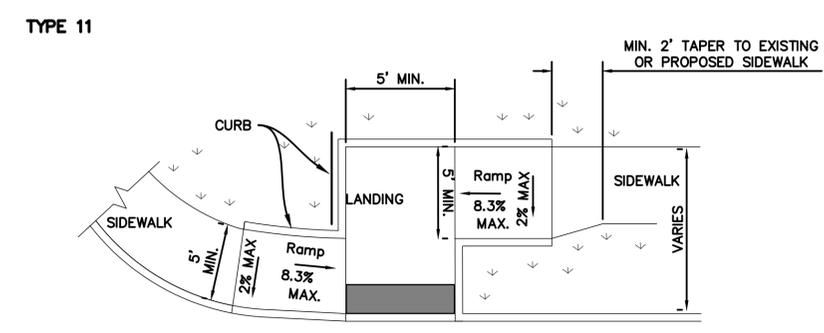
SKewed INTERSECTION WITH "LARGE" RADIUS



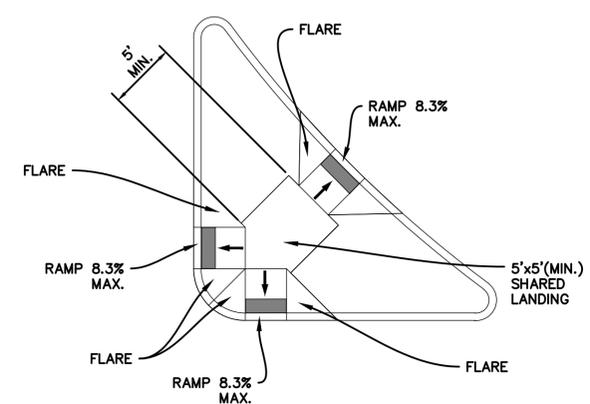
SKewed INTERSECTION WITH "SMALL" RADIUS



NORMAL INTERSECTION WITH "SMALL" RADIUS
TYPICAL CROSSING LAYOUTS



OFFSET PARALLEL CURB RAMP



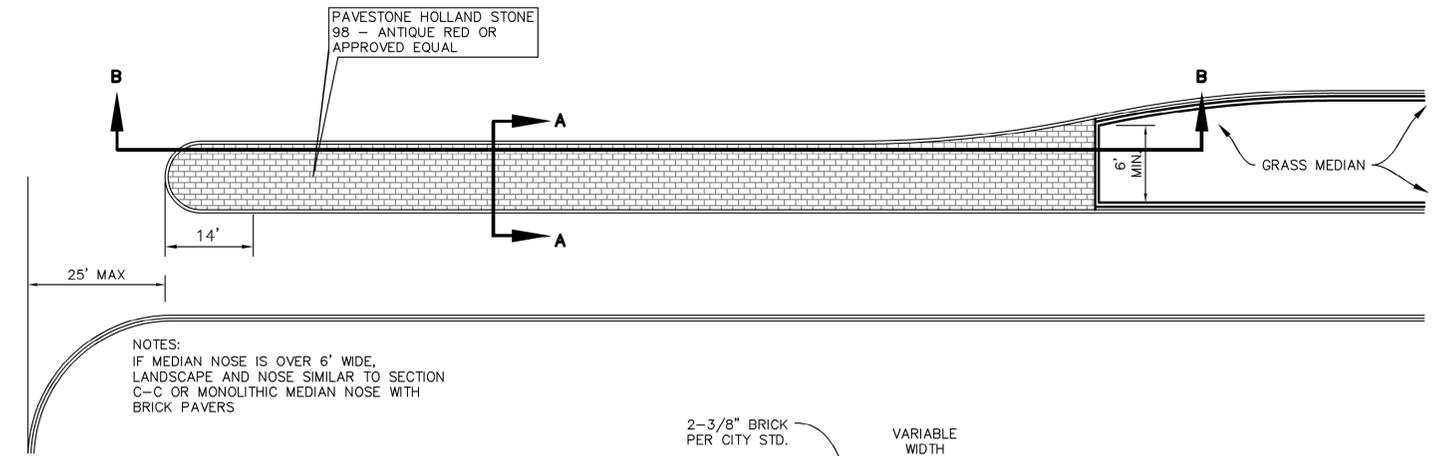
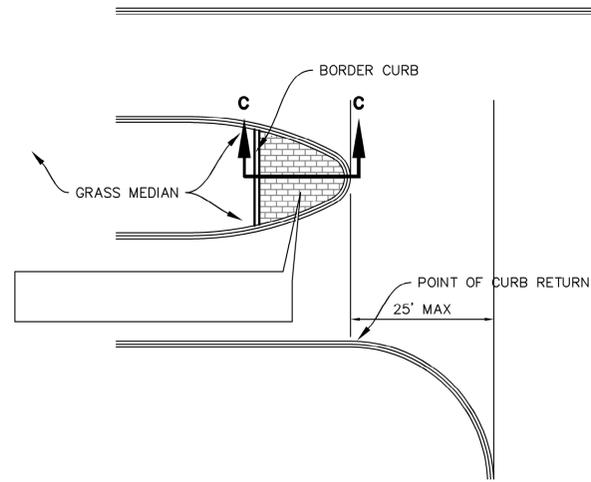
COMBINATION ISLAND RAMPS

GENERAL NOTES

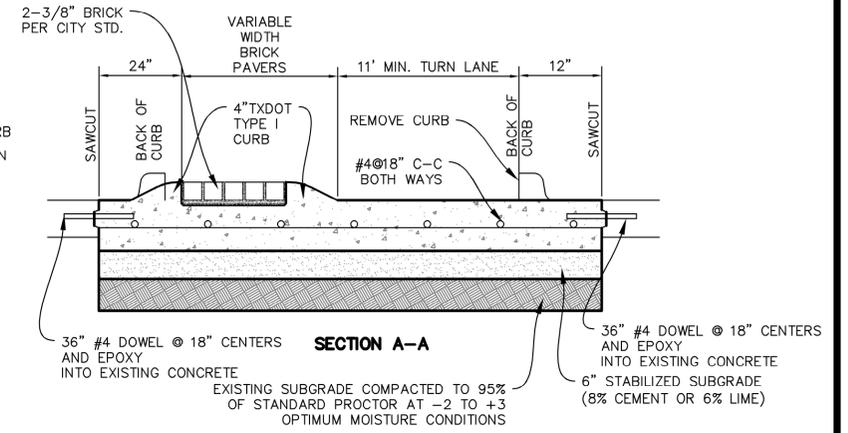
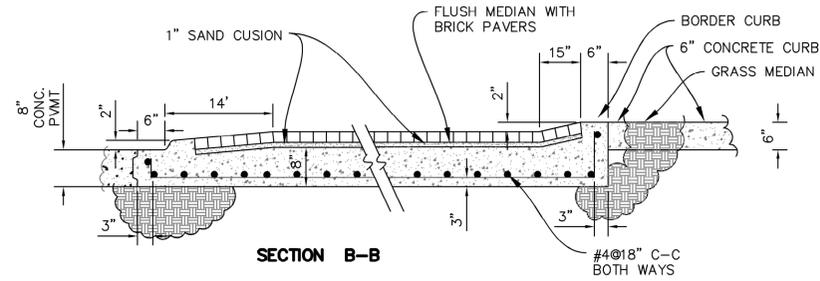
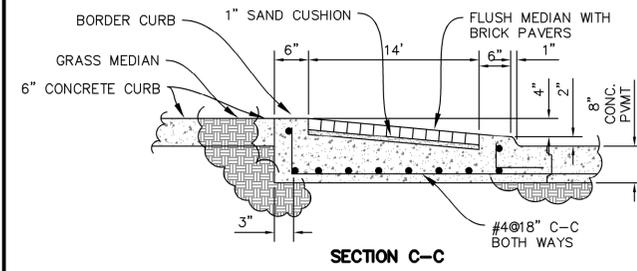
- ALL SLOPES SHOWN ARE MAXIMUM ALLOWABLE. LESSER SLOPES THAT WILL STILL DRAIN PROPERLY SHOULD BE USED. ADJUST CURB RAMP LENGTH OR GRADE OF APPROACH SIDEWALKS AS DIRECTED.
 - THE MINIMUM SIDEWALK WIDTH IS 4'. WHERE THE SIDEWALK IS ADJACENT TO THE BACK OF CURB, A 6' SIDEWALK WIDTH IS DESIRABLE. WHERE A 5' SIDEWALK CANNOT BE PROVIDED DUE TO SITE CONSTRAINTS, SIDEWALK WIDTH MAY BE REDUCED TO 4' FOR SHORT DISTANCES 5' X 5' PASSING AREAS AT INTERVALS NOT TO EXCEED 200' ARE REQUIRED.
 - LANDINGS SHALL BE 5' X 5' MINIMUM WITH A MAXIMUM 2% SLOPE IN ANY DIRECTION.
 - MANEUVERING SPACE AT THE BOTTOM OF CURB RAMPS SHALL BE A MINIMUM OF 4' X 4' WHOLLY CONTAINED WITHIN THE CROSSWALK AND WHOLLY OUTSIDE THE PARALLEL VEHICULAR TRAVEL PATH.
 - MAXIMUM ALLOWABLE CROSS SLOPE ON SIDEWALK AND CURB RAMP SURFACES IS 2%.
 - PROVIDE FLARED SIDES WHERE THE PEDESTRIAN CIRCULATION PATH CROSSES THE CURB RAMP FLARED SIDES SHALL BE SLOPED AT 10% MAXIMUM, MEASURED PARALLEL TO THE CURB. RETURNED CURBS MAY BE USED ONLY WHERE PEDESTRIANS WOULD NOT NORMALLY WALK ACROSS THE RAMP, EITHER BECAUSE THE ADJACENT SURFACE IS PLANTED, SUBSTANTIALLY OBSTRUCTED, OR OTHERWISE PROTECTED.
 - ADDITIONAL INFORMATION ON CURB RAMP LOCATION, DESIGN, LIGHT REFLECTIVE VALUE AND TEXTURE MAY BE FOUND IN THE CURRENT EDITION OF THE TEXAS ACCESSIBILITY STANDARDS (TAS) AND 16 TAC 68.102.
 - TO SERVE AS A PEDESTRIAN REFUGE AREA, THE MEDIAN SHOULD BE A MINIMUM OF 6' WIDE, MEASURED FROM BACK OF CURBS. MEDIANS SHOULD BE DESIGNED TO PROVIDE ACCESSIBLE PASSAGE OVER OR THROUGH THEM.
 - SMALL CHANNELIZATION ISLANDS, WHICH DO NOT PROVIDE A MINIMUM 5' X 5' LANDING AT THE TOP OF CURB RAMPS, SHALL BE CUT THROUGH LEVEL WITH THE SURFACE OF THE STREET.
 - CROSSWALK DIMENSIONS, CROSSWALK MARKINGS AND STOP BAR LOCATIONS SHALL BE AS SHOWN ELSEWHERE IN THE PLANS. AT INTERSECTIONS WHERE CROSSWALK MARKINGS ARE NOT REQUIRED, CURB RAMPS SHALL ALIGN WITH THEORETICAL CROSSWALKS UNLESS OTHERWISE DIRECTED.
 - HANDRAILS ARE NOT REQUIRED ON CURB RAMPS. PROVIDE CURB RAMPS WHEREVER ON ACCESSIBLE ROUTE CROSSES (PENETRATES) A CURB.
 - PLACE CONCRETE AT A MINIMUM DEPTH OF 5" FOR RAMPS, FLARES AND LANDINGS, UNLESS OTHERWISE DIRECTED.
 - PROVIDE A SMOOTH TRANSITION WHERE THE CURB RAMPS CONNECT TO THE STREET.
 - EXISTING FEATURES THAT COMPLY WITH TAS MAY REMAIN IN PLACE UNLESS OTHERWISE SHOWN ON THE PLANS.
- DETECTABLE WARNING MATERIAL
- CURB RAMPS MUST CONTAIN A DETECTABLE WARNING SURFACE THAT CONSISTS OF RAISED TRUNCATED DOMES COMPLYING WITH SECTION 705 OF THE TAS. THE SURFACE MUST CONTRAST VISUALLY WITH ADJOINING SURFACES, INCLUDING SIDE FLARES. FURNISH AND INSTALL AN APPROVED CAST-IN-PLACE DARK RED DETECTABLE WARNING SURFACE MATERIAL ADJACENT TO UNCOLORED CONCRETE, UNLESS SPECIFIED ELSEWHERE IN THE PLANS.
 - DETECTABLE WARNING MATERIALS MUST MEET TxDOT DEPARTMENTAL MATERIALS SPECIFICATION DMS 4350 AND BE LISTED ON THE MATERIAL PRODUCER LIST. INSTALL PRODUCTS IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
 - DETECTABLE WARNING SURFACES MUST BE SLIP RESISTANT AND NOT ALLOW WATER TO ACCUMULATE.
 - DETECTABLE WARNING SURFACES SHALL BE A MINIMUM OF 24" IN DEPTH IN THE DIRECTION OF PEDESTRIAN TRAVEL, AND EXTEND THE FULL WIDTH OF THE CURB RAMP OR LANDING WHERE THE PEDESTRIAN ACCESS ROUTE ENTERS THE STREET.
 - DETECTABLE WARNING SURFACES SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS AT THE BACK OF CURB. ALIGN THE ROWS OF DOMES TO BE PERPENDICULAR TO THE GRADE BREAK BETWEEN THE RAMP RUN AND THE STREET. DETECTABLE WARNING SURFACES MAY BE CURVED ALONG THE CORNER RADIUS.
 - SHADED AREAS ON SHEET 1 OF 4 INDICATE THE APPROXIMATE LOCATION FOR THE DETECTABLE WARNING SURFACE FOR EACH CURB RAMP TYPE.
- DETECTABLE WARNING PAVERS
- FURNISH DETECTABLE WARNING PAVER UNITS MEETING ALL REQUIREMENTS OF ASTM C-936, C-33. LAY IN A TWO BY TWO UNIT BASKET WEAVE PATTERN OR AS DIRECTED.
- SIDEWALKS
- PROVIDE CLEAR GROUND SPACE AT OPERABLE PARTS, INCLUDING PEDESTRIAN PUSH BUTTONS. OPERABLE PARTS SHALL BE PLACED WITHIN ONE OR MORE REACH RANGES SPECIFIED IN TAS 308.
 - PLACE TRAFFIC SIGNAL OR ILLUMINATION POLES, GROUND BOXES, CONTROLLER BOXES, SIGNS, DRAINAGE FACILITIES AND OTHER ITEMS SO AS NOT TO OBSTRUCT THE PEDESTRIAN ACCESS ROUTE OR CLEAR GROUND SPACE.
 - STREET GRADES AND CROSS SLOPES SHALL BE AS SHOWN ELSEWHERE IN THE PLANS.
 - THE LEAST POSSIBLE GRADE SHOULD BE USED TO MAXIMIZE ACCESSIBILITY. THE RUNNING SLOPE OF SIDEWALKS AND CROSSWALKS WITHIN THE PUBLIC RIGHT OF WAY MAY FOLLOW THE GRADE OF THE PARALLEL ROADWAY. WHERE A CONTINUOUS GRADE GREATER THAN 5% MUST BE PROVIDED, HANDRAILS MAY BE DESIRABLE TO IMPROVE ACCESSIBILITY. HANDRAILS MAY ALSO BE NEEDED TO PROTECT PEDESTRIANS FROM POTENTIALLY HAZARDOUS CONDITIONS. IF PROVIDED, HANDRAILS SHALL COMPLY WITH TAS 505.
 - HANDRAIL EXTENSIONS SHALL NOT PROTRUDE INTO THE USABLE LANDING AREA OR INTO INTERSECTING PEDESTRIAN ROUTES.
 - SIDEWALK DETAILS ARE SHOWN ELSEWHERE IN THE PLANS.

Curb Ramp				
Details				
GRAPEVINE, TEXAS				
City of Grapevine				
Public Works Department				
P.O. BOX 76099 PH 817-410-3155				
CHECKED:	SCALE:	DATE:	PROJECT No.	SHEET
	NTS	1-10-2020		OF

CURB RAMP DETAILS



NOTES:
IF MEDIAN NOSE IS OVER 6' WIDE,
LANDSCAPE AND NOSE SIMILAR TO SECTION
C-C OR MONOLITHIC MEDIAN NOSE WITH
BRICK PAVERS

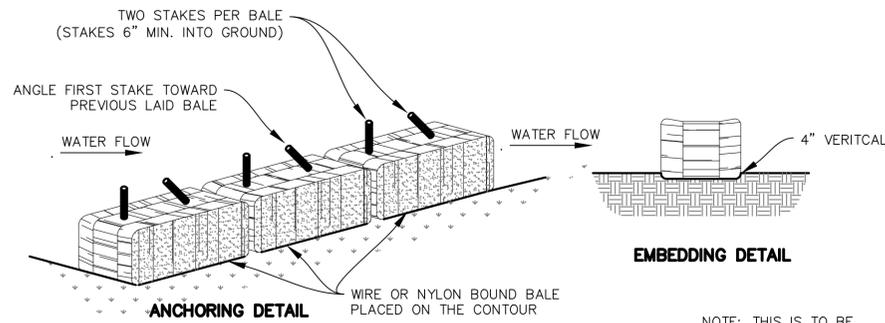


GR2080

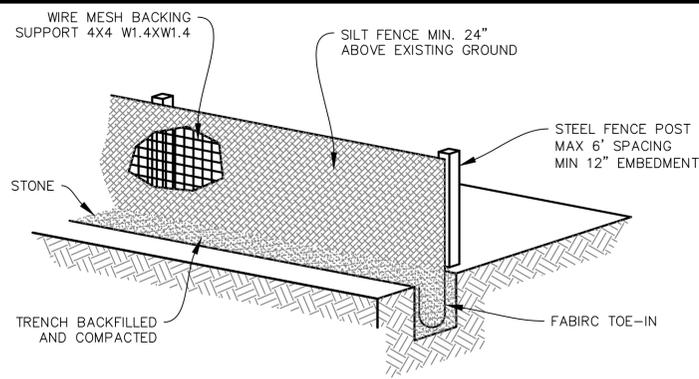
TURN LANE DETAIL

MEDIAN PAVERS				
DETAILS				
GRAPEVINE, TEXAS				
		City of Grapevine Public Works Department P.O. BOX 76099 PH 817-410-3155		
CHECKED:	SCALE:	DATE:	PROJECT No.	SHEET
NTS		1-9-2020		OF

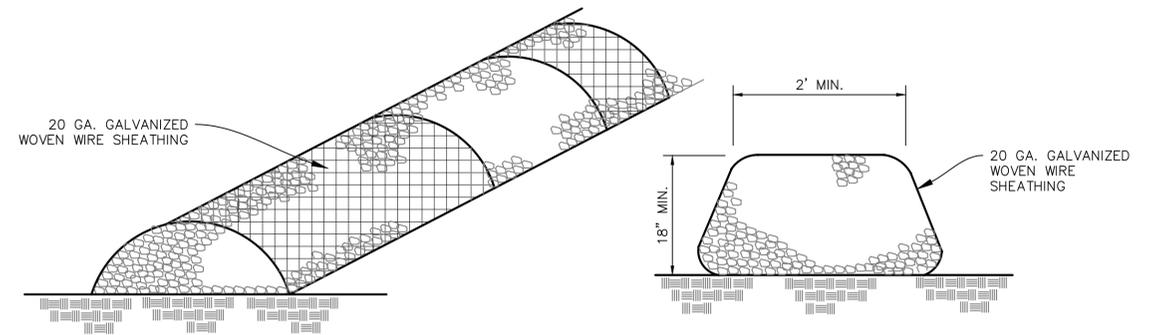
MEDIAN PAVERS



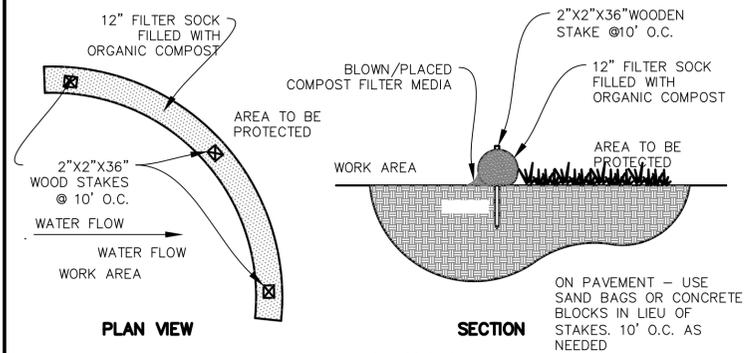
GR5020 HAY BALE DIKE



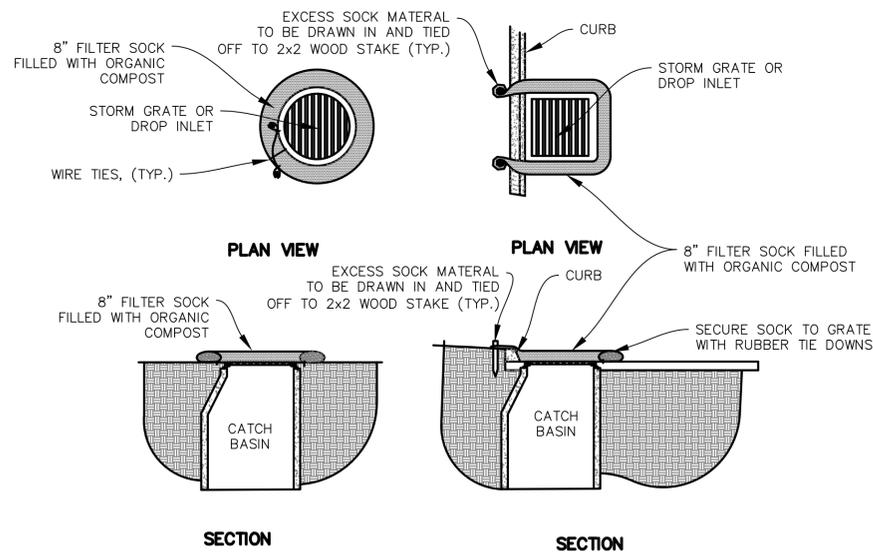
GR5010 SILT FENCE



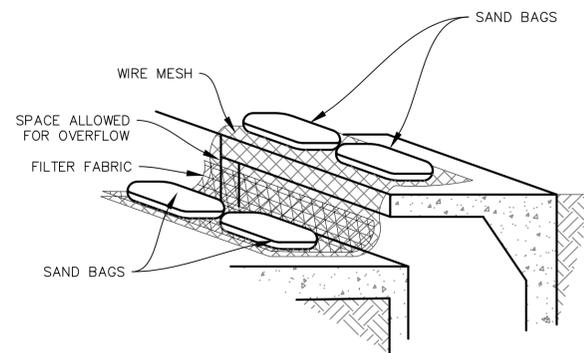
**ROCK FILTER DAM
GR5070**



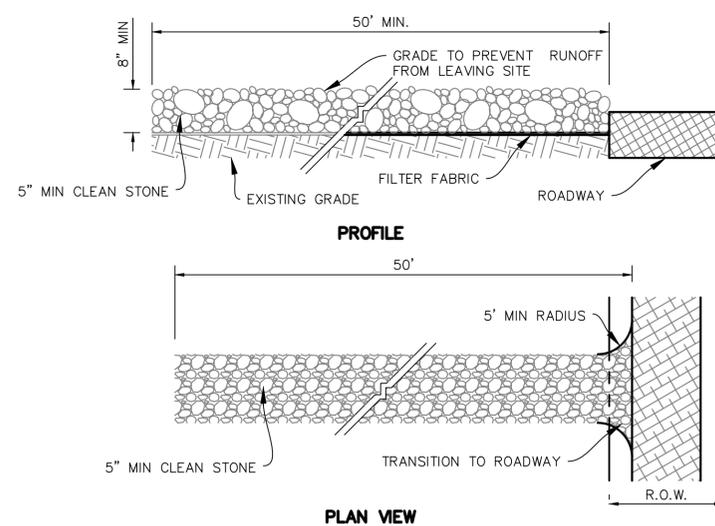
GR5030 FILTER SOCK



**GRATE/ DROP INLET PROTECTION
GR5040**



**CURB INLET PROTECTION
GR5060**



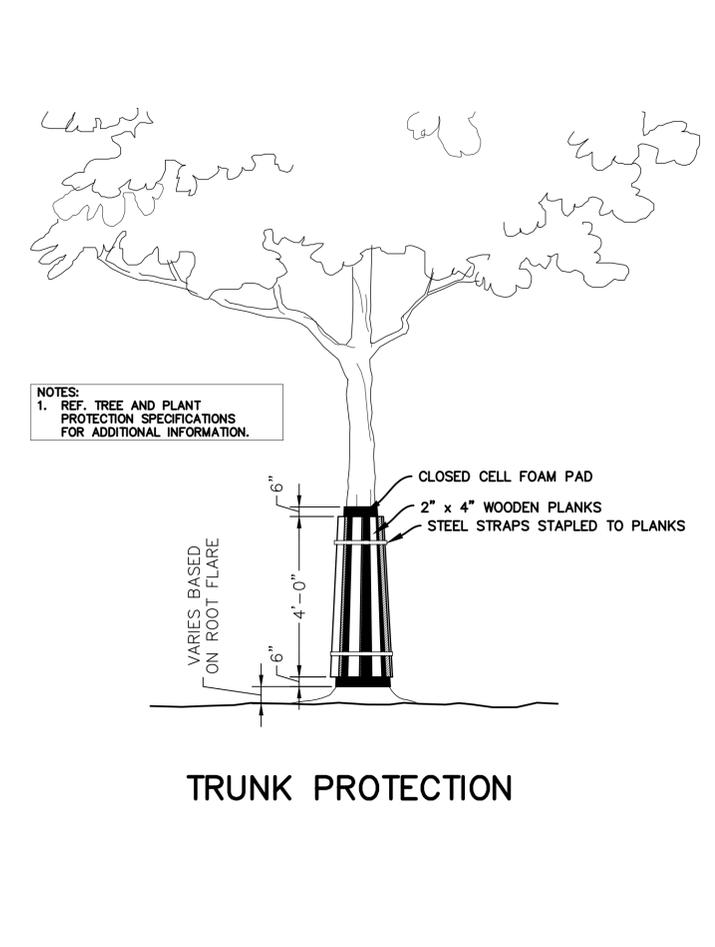
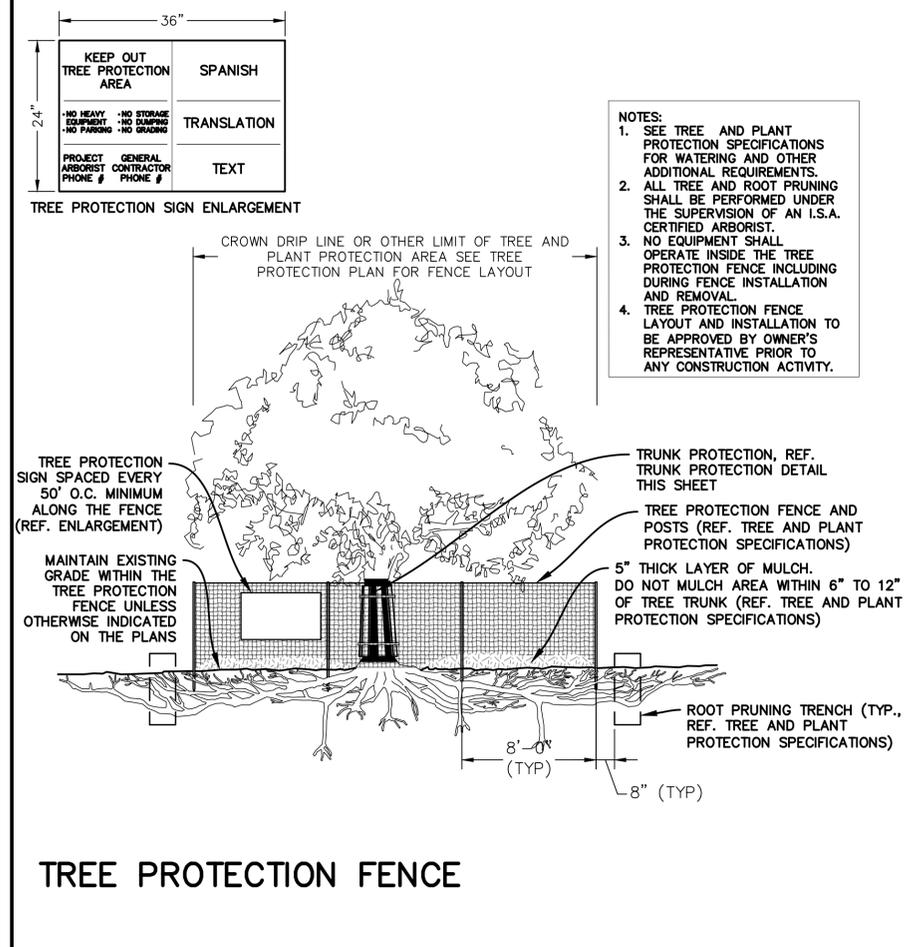
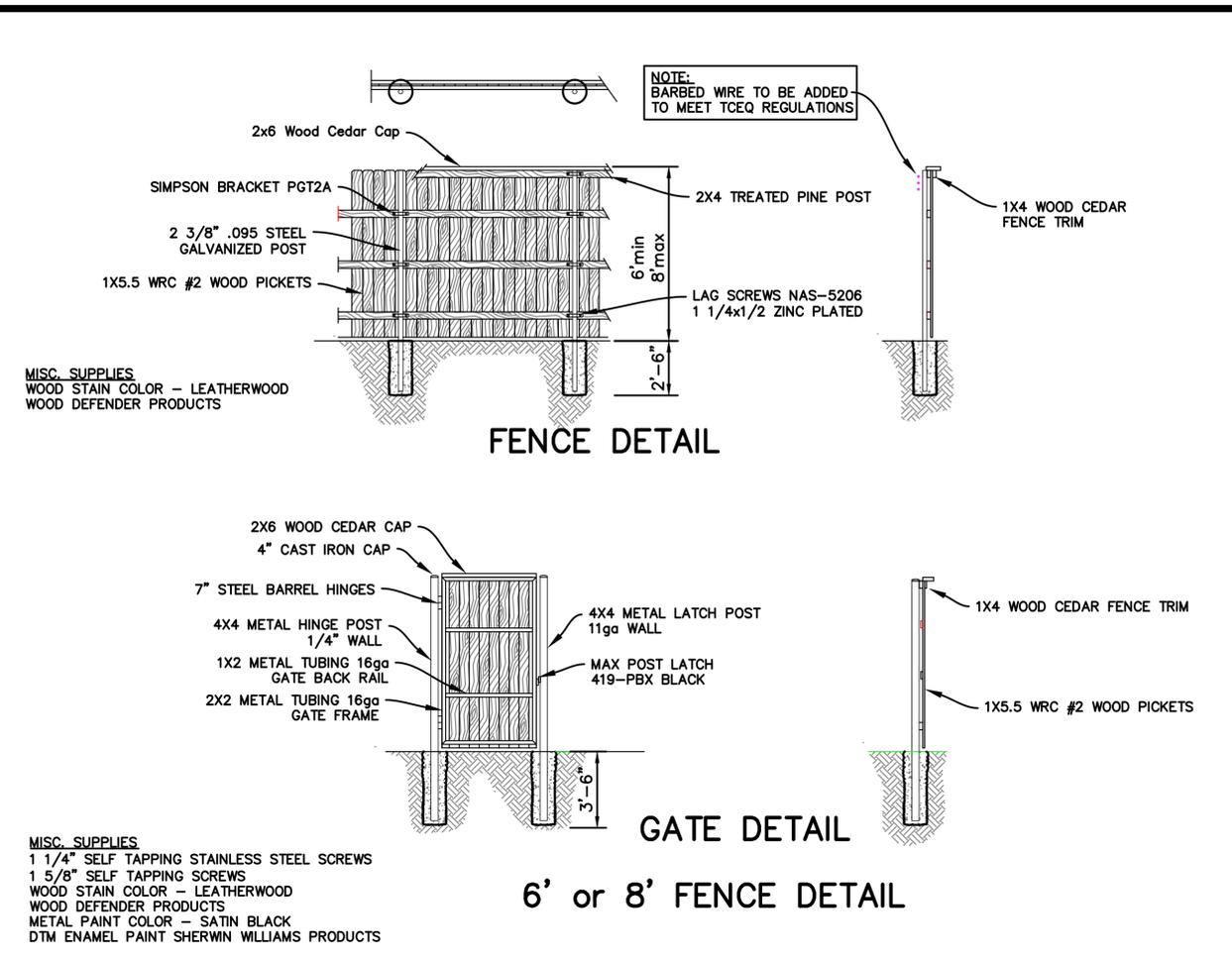
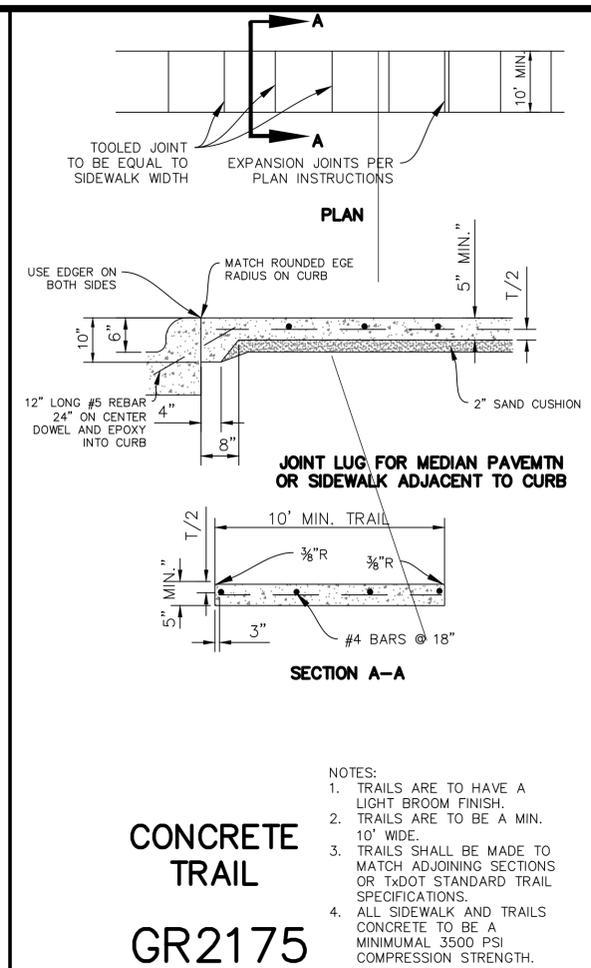
- STONE SHALL BE 5 INCH DIAMETER CRUSHED ROCK OR ACCEPTABLE CRUSHED PORTLAND CEMENT CONCRETE.
- WHEN NECESSARY, VEHICLES SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO A PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH CRUSHED STONE, WITH DRAINAGE FLOWING AWAY FROM BOTH THE STREET AND THE STABILIZED ENTRANCE. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH, OR WATERCOURSE USING APPROVED METHODS.
- THE ENTRANCE SHALL MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PAVED SURFACES. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PAVED SURFACES MUST BE REMOVED IMMEDIATELY.
- THE ENTRANCE MUST BE PROPERLY GRADED, OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.

**CONSTRUCTION ENTRANCE
GR5050**

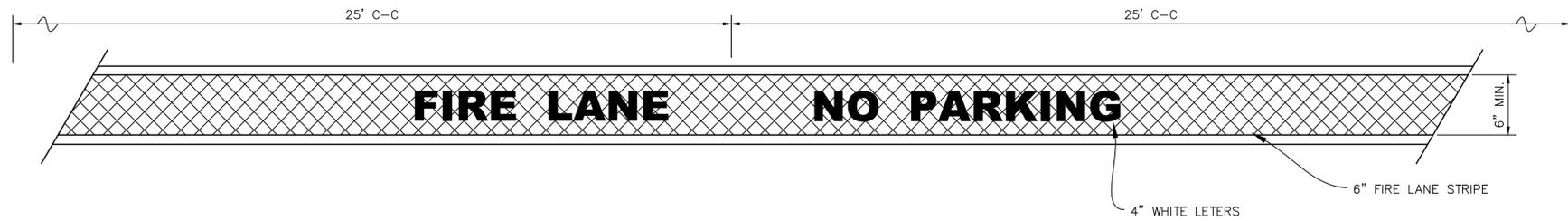
- EROSION CONTROL NOTES:**
- THE SPECIFIC PLANT MATERIALS PROPOSED TO PROTECT FILL AND EXCAVATED SLOPES SHALL BE AS INDICATED ON THE PLANS. PLANT MATERIALS MUST BE SUITABLE FOR USE UNDER LOCAL CLIMATE AND SOIL CONDITIONS. IN GENERAL, HYDROSEEDING OR SODDING BERMUDA GRASS IS ACCEPTABLE DURING THE SUMMER MONTHS (MAY 1 TO AUGUST 31). WINTER RYE OR FESCUE GRASS MAY BE PLANTED DURING TIMES OTHER THAN THE SUMMER MONTHS AS A TEMPORARY MEASURE UNTIL SUCH TIME AS THE PERMANENT PLANTING CAN BE MADE.
 - PRIOR TO COMMENCING ANY CONSTRUCTION, A CONSTRUCTION ENTRANCE AND PERIMETER SILT FENCE SHALL BE INSTALLED AT THE LOCATION(S) SHOWN.
 - AS INLETS ARE COMPLETED, TEMPORARY SEDIMENT BARRIERS SHALL BE INSTALLED.
 - AT THE COMPLETION OF THE PAVING AND FINAL GRADING, THE DISTURBED AREA(S) SHALL BE REVEGETATED IN ACCORDANCE WITH THE PLANS.
 - SILT FENCE AND INLET SEDIMENT BARRIERS SHALL REMAIN IN PLACE UNTIL REVEGETATION HAS BEEN COMPLETED.
 - DISTURBED AREAS THAT ARE SEEDED OR SODDED SHALL BE CHECKED PERIODICALLY TO SEE THAT GRASS COVERAGE IS PROPERLY MAINTAINED. DISTURBED AREAS SHALL BE WATERED, FERTILIZED, AND RESEDED OR RESODDED, IF NECESSARY.

Erosion Control Details				
GRAPEVINE, TEXAS				
 City of Grapevine Public Works Department				
P.O. BOX 76099 PH 817-410-3155				
CHECKED:	SCALE:	DATE:	PROJECT No.	SHEET
NTS		4-18-18		OF

EROSION CONTROL DETAILS



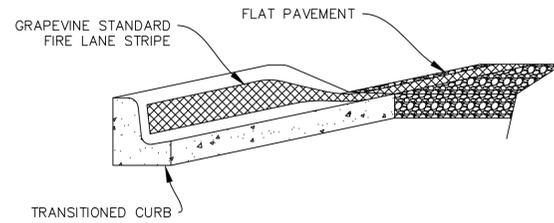
MISCELLANEOUS DETAILS



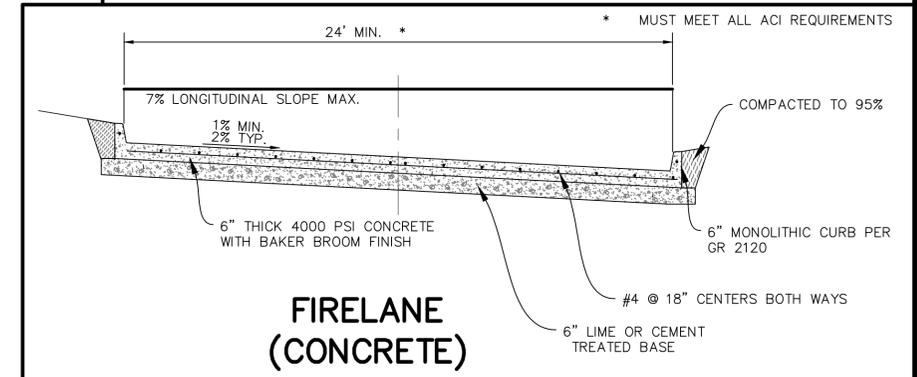
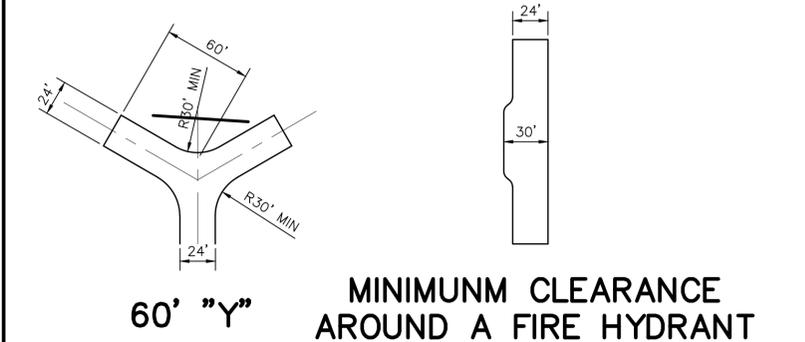
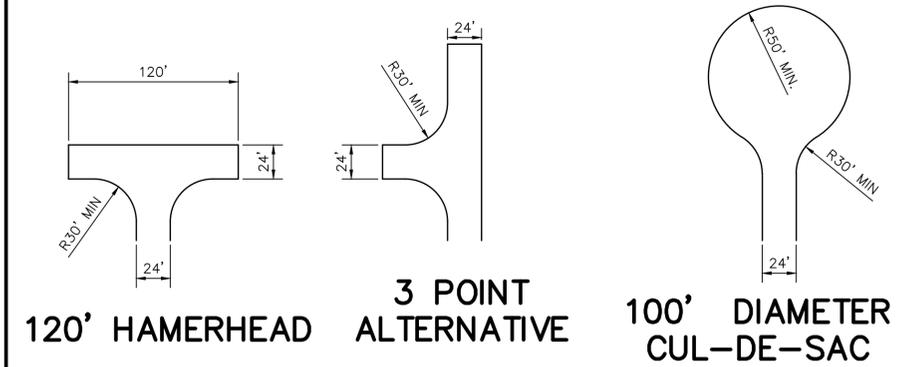
FIRE LANE STRIPE AND LETTERING

PAINT NOTES:

1. STRIPES SHALL BE AT LEAST 6" WIDE PAINTED WITH AN EXTERIOR ACRYLIC PAINT. COLOR SHALL BE "TRAFFIC RED" GLIDDEN NO. 63251 OR EQUIVALENT.
2. "FIRE LANE NO PARKING" OR "NO PARKING FIRE LANE" MUST BE PLACED EVERY 25'.
3. LETTERS SHALL BE 4" HIGH AND PAINTED WITH AN EXTERIOR ACRYLIC PAINT. COLOR SHALL BE "TRAFFIC WHITE" GLIDDEN NO. 563245 OR EQUIVALENT.
4. PREPARE SURFACE BEFORE PAINTING BY POWER WASHING. SURFACE SHOULD BE FREE OF OBVIOUS DIRT AND DEBRIS.
5. STRIPE MAY BE BRUSHED, SPRAYED OR ROLLED, TWO COATS MINIMUM TO FINISH.
6. LETTERS SHALL BE STENCIL FORMED, BRUSH APPLIED AND SPACED AS DETAILED ON THIS SHEET.



FIRE LANE STRIPE AT CURB TRANSITION



- PAVING NOTES:**
1. MUST MEET ALL ACI REQUIREMENTS.
 2. PAVING SHALL BE REINFORCED WITH #4 STEEL @ 18" CENTER. SPLICES WILL HAVE A MINIMUM OF 30 BAR DIAMETERS.
 3. SUB-GRADE TO BE LIME OR CEMENT TREATED VERIFIED BY A GEOTECHNICAL ENGINEER PRIOR TO CONSTRUCTION WITH A MINIMUM OF 6% STANDARD PROCTOR
 4. ALL DISTURBED SOIL SHALL BE COMPACTED TO A MINIMUM OF 95% STANDARD PROCTOR
 5. AN APPROVED WHITE PIGMENTED CURING COMPOUND SHALL BE APPLIED TO ALL EXPOSED SURFACES WITHIN 30-60 MINUTES AFTER CONCRETE IS PLACED.
 6. BAKER BROOM FINISH WILL BE USED.
 7. ALL INLETS WILL BE SEPARATED FROM THE PAVEMENT AND CURB BY BOXING AROUND INLETS AS SHOWN ON INLET DETAIL.
 8. TACK COAT A CLEAN SURFACE AT A RATE BETWEEN 0.9 TO 0.10 GALLONS/SY.

Upon the designation of the location and size of the Fire Lane by the Fire Chief, the owner of that property shall mark the same in accordance with the following:

- (a) Owner of subject property shall be responsible for the marking and maintenance of fire lanes.
- (b) Fire lanes shall be designated by continuous lines at least six inches in width on each side of Fire Lanes, starting at the street entrance and continuing to the exit. Such lines shall be bright red in color. The words "NO PARKING" and "FIRE LANE" shall be painted, alternately, in white letters 15 feet over the red lines. Fire lanes are to a minimum width of 24 feet, 26 feet when located within 35 feet of any building in excess of 75 feet in height. The chief may increase width when deemed necessary to provide adequate access for protection.
- (c) Fire lane adjacent to curbs, buildings and fences shall have the entire curb painted bright red or in such manner as the fire chief shall direct. When temporary fire lanes are designated by the chief to provide and maintain fire apparatus access roads and prohibit the obstruction thereof, approved signs may be used in lieu of paintings of curbs.
- (d) The fire chief may require, when necessary, that "FIRE LANE" and "NO PARKING" signs be erected on buildings, post or fences.

(Ord. No. 78-60, § 5, 9-19-78; Ord. No. 93-20, § 2, 5-4-93)

FIRE LANE DETAILS				
DETAILS				
GRAPEVINE, TEXAS				
		City of Grapevine Public Works Department		
P.O. BOX 76099 PH 817-410-3155				
CHECKED:	SCALE:	DATE:	PROJECT No.	SHEET
	NTS	5-21-2020		OF

FIRE LANE DETAILS