

# THE CITY OF CELINA, TEXAS

## CONSTRUCTION PLANS

### FOR

# SH 289 WATER LINE RELOCATION

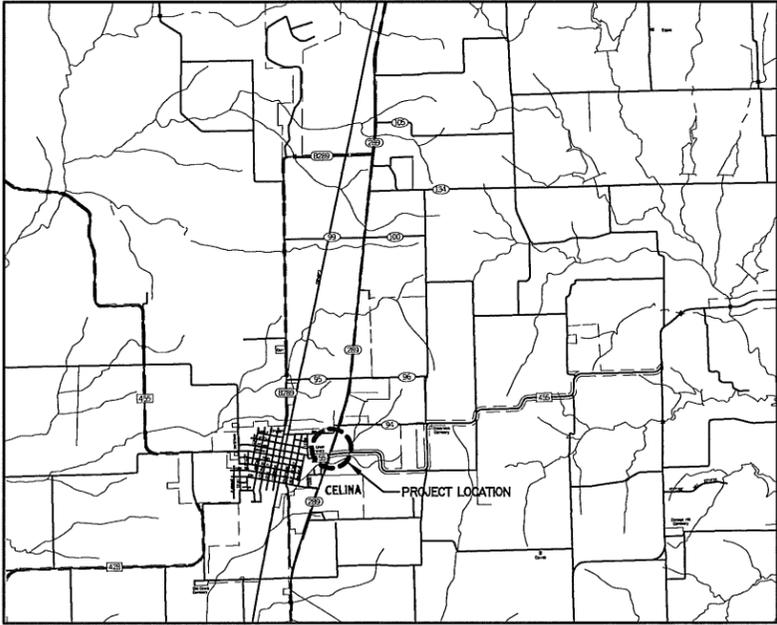
## AT FM 455

CITY COUNCIL  
**JIM LEWIS, MAYOR**  
**LARRY BERG**  
**WAYNE NABORS**  
**TODD McCALLY**  
**CARMEN ROBERTS**  
**BILL WEBBER**  
**SEAN TERRY**

CITY ADMINISTRATION/STAFF  
**MIKE FOREMAN, CITY MANAGER**  
**VICKI FAULKNER, CITY SECRETARY**

DIRECTOR OF PUBLIC WORKS  
**JOSEPH JOHNSON**

CITY OF CELINA, TEXAS  
 302 W. Walnut Street  
 Celina, Texas 75009  
 (972) 382-2682



LOCATION MAP  
 N.T.S.

**RECORD DRAWING**  
 THIS RECORD DRAWING HAS BEEN PREPARED BASED ON INFORMATION PROVIDED BY THE CONSTRUCTION CONTRACTOR AND/OR OWNER. THE ENGINEER HAS NOT VERIFIED THE ACCURACY OF THIS INFORMATION AND SHALL NOT BE RESPONSIBLE FOR ANY DISCREPANCIES WHICH MAY BE INCORPORATED HEREIN AS A RESULT.  
**BROWN & GAY ENGINEERS, INC.**  
 TEXAS REGISTERED ENGINEERING FIRM F-1046  
 By: *[Signature]* Date: 7/31/12

2012

**BROWN & GAY**  
 ENGINEERS, INC.

**Brown & Gay Engineers, Inc.**  
 2595 DALLAS PKWY, STE 204, FRISCO, TX 75034  
 Tel: 972-464-4800 Fax: 972-464-4899  
 — Civil engineers and surveyors —  
 TBPE Registration No. F-1046

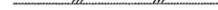
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SH 289 WATER LINE RELOCATION AT FM 455

BROWN & GAY ENGINEERS, INC. 01/10/12 10:20:29 AM C:\Projects\SH 289 Water Line Relocation\DWG\SH 289 Water Line Relocation.dwg

# LEGEND

## EXISTING

-  EXISTING RIGHT-OF-WAY
-  EXISTING EASEMENT
-  ASPHALT
-  FENCE
-  GUARD RAIL
-  VEGETATION
-  GAS
-  OVERHEAD ELECTRIC
-  UNDERGROUND ELECTRIC
-  UNDERGROUND FIBER OPTIC
-  UNDERGROUND TELEPHONE
-  WASTE WATER COF CELINA
-  WASTE WATER COF CELINA
-  WATER COF CELINA
-  WATER MARILEE SPECIAL UTIL DIST
-  ABANDONED LINES
-  BUSH
-  ELECTRICAL POWER BOX
-  FIBER OPTIC VAULT
-  FIRE HYDRANT
-  GAS METER
-  GAS VALVE
-  LIGHT POLE
-  MANHOLE
-  SIGN
-  SIGNAL BOX
-  TELEPHONE MANHOLE
-  UTILITY POLE
-  WATER METER
-  WATER VALVE
-  WATER VAULT
-  WASTE WATER MANHOLE

## PROPOSED

-  PROPOSED RIGHT-OF-WAY
-  WATER LINE
-  PROPOSED EASEMENT
-  CUT, PLUG AND ABANDON EXIST LINES
-  FIRE HYDRANT
-  WATER VALVE
-  REDUCER
-  TEE
-  SINGLE WATER METER
-  BULL HEAD WATER METER
-  CONTROL POINT

# ABBREVIATIONS

- CI - CAST IRON
- CO - CLEAN OUT
- DIA - DIAMETER
- DI - DUCTILE IRON
- DW - DRIVEWAY
- EA - EDGE OF ASPHALT
- FC - FRAME & COVER
- GT - GUTTER
- L - LATERAL
- MB - MAIL BOX
- M - MAIN
- PP - POWER POLE
- PVC - POLYVINYL CHLORIDE
- SD - STANDARD DETAILS
- SH - SPRINKLER HEAD
- SSMH - SANITARY SEWER MANHOLE
- SSTL - STAINLESS STEEL
- SV - SPRINKLER VALVE
- SW - SIDEWALK
- TC - TOP OF CURB
- WL - WATER LINE
- WM - WATER METER
- WW - WATER VALVE

# INDEX OF SHEETS

- 1 COVER SHEET
- 2 LEGEND & INDEX OF SHEETS
- 3 CITY OF CELINA GENERAL CONSTRUCTION NOTES
- 4 TxDOT SPECIFICATIONS FOR UTILITY INSTALLATIONS
- 5 10" WATER LINE PLAN & PROFILE - LINE 10
- 6 STANDARD DETAILS - SHEET 1 OF 2
- 7 STANDARD DETAILS - SHEET 2 OF 2

## RECORD DRAWING

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07/31/2012

REV.	DESCRIPTION	BY	DATE

**CITY OF CELINA, TEXAS**  
 302 W. Walnut Street  
 Celina, Texas 75009  
 (972) 382-2682

SH 289 WATER LINE RELOCATION  
 AT FM 455

## LEGEND & INDEX OF SHEETS

**BROWN & GAY ENGINEERS, INC.**  
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 2595 DALLAS PKWY., STE 204, FRISCO, TX 75034  
 Tel: 972-464-4800 Fax: 972-464-4899  
 — Civil engineers and surveyors —  
 TBPE Registration No. F-1046

DESIGNED: JJF	DATE: JUNE 2012	SCALE: N. T. S.	PROJECT NO.: 950-05	Sheet 2 of 7
DRAWN: CAC	CHECKED: JJF			

BROWN & GAY ENGINEERS, INC.  
 01/Project/05/09/01 Celina Preston Utility Relocation/02\_CADD/SH289/W-201207-01.dwg  
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**GENERAL ITEMS**

- All construction shall be in accordance with the latest revision of the North Central Texas Council of Governments "Standard Specifications for Public Works Construction" including the Standard Drawings therein and the City of Celina's addendum thereto. Contractor shall have at least one set of approved Engineering Plans and Specifications on-site at all times.
- Before beginning construction, the contractor shall prepare a construction sequence schedule. The construction schedule shall be such that there is the minimum interference with traffic along or adjacent to the project.
- Construction may not be begun earlier than 7:00 A.M. on weekdays nor continued after dark without permission from the City of Celina. Construction on holidays and Saturday must be approved two days in advance, a fee of \$300.00 a day for working on holidays and Saturday will be assessed payable to the city before work is performed. Work may not begin before 8:00 A.M. on holidays and Saturday and work on Sunday is prohibited without special permission and payment of fees.
- Utilities shown on the plans were taken from field surveys and information provided by the utility companies. The completeness and the accuracy of this data is not guaranteed.

The contractor is responsible for verifying the location of all underground utilities and structures and protecting them from damage during construction.

It will be the responsibility of each contractor to protect all existing public and private utilities throughout the construction of this project. Contractor shall contact the appropriate utility companies for line location prior to commencement of construction and shall assume full liability to those companies for any damages caused to their facilities.

DIG TESS	800-DIG-TESS
GCEC-TELEGRAM	903-482-7274
GCEC-ELECTRIC	903-821-3007
AT&T	972-569-3013
ATMOS ENERGY	972-881-4181
ATMOS ENERGY	214-341-9900
CROSSTEX ENERGY	817-570-6753
ONEOK	903-257-6594
COSERVE-ELEC	940-321-7800
COSERVE-GAS	940-321-7800
CITY OF CELINA	972-658-2052
CITY OF PROSPER	972-347-8969
MARILEE SUD	972-382-3222
GRANDE	972-410-0583
SUDDEN LINK	469-853-0486

- Work may not be backfilled or covered until the City has inspected it.
- Material testing shall be performed by an independent testing laboratory and paid for by the Contractor. The following material tests shall be provided by the Contractor:
  - Embankment - One soil density test shall be performed at each location for each 500 C.Y. of backfill placed.
  - Pavement Sub grade - One gradation test (where lime stabilized) and one soil density test shall be performed for each 100 linear feet of pavement unless otherwise noted.
  - Utility Trench Backfill - One soil density test shall be performed as directed by City of Celina.
  - Concrete Tests:
    - Compressive Strength - as specified in the N.C.T.C.O.G. specifications or city specifications.
    - Air Content - One test for each 25 C.Y. of concrete or fraction thereof unless otherwise noted.
    - Slump - One test for each 9 C.Y. unless otherwise noted.

The City shall select the location and depth of each soil density test unless otherwise directed.

- All excavation on the project is unclassified.
- Temporary erosion control shall be used to minimize the spread of silt and mud from the project on to existing streets, alleys, drainage ways and public and private property. Temporary erosion controls may include silt fences, rock check dams, stabilized construction entrances, straw bales, berms, dikes, swales, strips of undisturbed vegetation, check dams and other methods as required by the City Administrator or his representative and shall conform to the Storm Water Quality Best Management Practices for Construction Activities as published by the North Central Texas Council of Governments.
- Finished slopes on public rights-of-way and easements shall not be steeper than 4:1. All slopes steeper than 6:1 shall be covered with erosion control matting and are hydro mulched and maintained by the contractor until grass covers all parts of the slope.
- The contractor shall maintain two-way traffic at all times along the project.
- Remove, salvage and replace all street and traffic control signs, which may be damaged by the construction of the project.
- All trenching and excavation shall be performed in accordance with OSHA standards. Trench safety design will be the responsibility of the Contractor. Contractor shall submit a trench safety design approved by a professional engineer to the City for review prior to the start of any underground utility construction.

**PAVING**

- All embankments shall be compacted to 95% Standard Proctor density.
- All streets and alleys shall be placed on lime stabilized sub grade with a lime content of not less than 7%. Or approved by city engineer.
- The minimum 28 day compressive strength of concrete street paving shall not be less than 3600 psi and shall be air entrained. Water may not be applied to the surface of concrete paving to improve workability.
- All curb and gutter shall be integral with the pavement.
- Parabolic crowns are required on all street pavements except on major thoroughfares where straight sections are required.
- Streets and alleys shall be constructed with provisions for sidewalk ramps at all intersections.

**DRAINAGE**

- Storm sewer pipe shall be reinforced concrete, Class III unless otherwise noted.
- All structural concrete shall be Class "C" (3600 psi compressive strength at 28 days), air entrained.
- The contractor shall install plugs in storm sewer lines or otherwise prevent mud from entering the storm sewer system during construction.

**WATER AND SANITARY SEWER**

- Water mains shall be AWWA C-900 or 905 PVC Class 200 unless otherwise noted. Minimum cover for waterlines is 48" below top of curb, 60" where no curbed street is present or as required to clear existing utilities, whichever is greater. Class B+ embedment unless otherwise noted.
- Marking tape shall be installed one foot above and over PVC water lines.
- Fittings for PVC water lines shall be ductile iron and be encased in a polyethylene sheath.
- All Mechanical Joints will be restrained. (Mega-Lug etc.)
- Valves, including tapping valves shall be resilient seat gate valves, unless noted otherwise.
- All direct burial valves shall be provided with cast iron valve boxes with PVC stacks. Valve stacks shall be vertical and concentric with the valve stem. Stainless steel valve extensions are required on all valves where the operating nut is greater than 4 feet below finished grade.
- Fire hydrants shall be Waterous or equal as directed or approved by the City of Celina on a case by case basis and field painted silver with bonnet and caps color-coded to pipe size.
  - Six inch line- silver body with RED bonnet and caps.
  - Eight inch line- silver body with BLUE bonnet and caps.
  - Ten inch line- silver body with GREEN bonnet and caps.
  - Twelve inch and larger- silver body with YELLOW bonnet and caps.
- All exposed bolting on any buried equipment or material shall be stainless steel. Included are:
  - Bonnet and stuffing box bolts on valves.
  - Shoe bolts on fire hydrants.
  - Flange bolts.
  - "Cor-ten" mechanical joint "T" bolts are acceptable for direct burial service.
- Meter boxes shall approved by the City of Celina.
- Sanitary sewer mains shall be DR 35 PVC, Class H embedment unless otherwise noted.
  - The contractor shall install and maintain watertight plugs in all connections to the City's sanitary sewer system until the City accepts the project.
  - All sanitary sewer lines and manholes shall be leak tested before the project is accepted. Deflection testing of PVC sewer lines is required.

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**CITY OF CELINA, TEXAS**

302 W. Walnut Street  
Celina, Texas 75009  
(972) 382-2682

SH 289 WATER LINE RELOCATION  
AT FM 455

**CITY OF CELINA  
GENERAL CONSTRUCTION NOTES**



Brown & Gay Engineers, Inc.  
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Tel: 972-464-4800 Fax: 972-464-4899  
— Civil engineers and surveyors —  
TPEE Registration No. F-1046

DESIGNED: JJF	DATE	SCALE	PROJECT NO.	Sheet
DRAWN: CAC	JUNE 2012	N. T. S.	950-05	3
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**DAL SPECIAL PROVISION 3-BORING**

1. **GENERAL – WATER JETTING OR JACKING WILL NOT BE PERMITTED.** All paved streets which are maintained by TxDOT must be bored & encased unless it is specifically stated on the permit that an exception for open cutting and/or no encasement is granted.

At no time shall the boring operation interfere with the traveling public. The safety of the traveling public and maintaining the integrity of the roadway is the primary concern.

2. **BORE PIT LOCATIONS** – No excavations for bore pits will be allowed to be any closer to the edge of the pavement (travel lane) than as outlined in the "TRENCH EXCAVATIONS AND PIT LOCATION" specification. If the required clear zoned distance is closer than outlined in the above mentioned specification, then appropriate traffic control devices such as barricades, signs, barrel mounted guard fence and/or concrete traffic barriers will be required as deemed necessary by the TxDOT inspector.

No excavated material will be stored closer to the traveled way than the bore pit. All pits and trenches shall be backfilled immediately after the encasement and carrier pipes have been installed. Upon completion of the backfill, all excess material will be removed from the right of way.

3. **METHOD OF INSTALLATION** – Crossings are to be installed by the AUGER or "DRY" BORE method and shall be accomplished by use of a laser sighted bore machine or a bore machine requiring a pilot hole. The pilot hole will serve as the centerline of the large diameter hole to be bored. The use of water or fluids in the boring operation will only be allowed for lubricating the cutting head.

The boring operation shall be performed from the low or downstream end. Lateral or vertical variation of the encasement pipe from the proposed line and grade will be permitted only to the extent of one (1) inch in ten (10) feet, provided that such a variation shall be regular and only in one direction.

The encasement pipe shall be approximately the same diameter as the bore hole. Over cutting in excess of one (1) inch shall be remedied by pressure grouting the entire length of the installation with a mixture consisting of two (2) sacks of cement per yard of sand.

4. **OPTIONAL WET BORE** – The utility or contractor may request installation by the Slurry or "Wet" bore method. The approval to wet bore is granted by the Area Engineer or his designated representative on an individual permit basis. If the area office allows wet bores in their designated area, approval will be based on bore size and soil conditions. Wet bores should be restricted to areas of rock or other suitable material which will prevent the sides of the bore hole from "caving in". A geotechnical report may be required prior to approval. In no instance will wet bores be allowed to exceed eighteen (18) inches in diameter.

The amount of water used for creating the slurry will be such that little or no runoff is encountered. If, in the opinion of the TxDOT inspector, at any time during the boring operation inadequate conditions are encountered for performing the wet bore, the process will be stopped and the bore will be completed by Auger bore.

The slurry material removed from the bore may not be used in the backfilling of the bore pit.

**DAL SPECIAL PROVISION 12-WATER & SANITARY SEWER**

1. **GENERAL** – Longitudinal water and sanitary sewer pipelines shall be placed on uniform alignment three (3) to ten (10) feet from the right of way line. The minimum depth of cover shall be twenty-four (24) inches for non-plastic lines and thirty (30) inches for plastic lines. If a nonmetallic line is installed, a durable metal wire or other device shall be concurrently installed for detection purposes.

Each line may be installed with enough vertical flexibility to prevent stresses; however, horizontal "snaking" of the line is prohibited.

The utility agency shall place identification markers at the right of way line in sufficient number for longitudinal installations and at each highway crossing.

All paved side streets crossed by a longitudinal line within TxDOT right of way must be installed as outlined in item #2 below.

2. **CROSSING** – Highway crossings are to be installed at or near right angles to highway and must be installed with an encasement pipe. Encasement pipe is also to be installed under normal center medians, extend from the top of back slope for cut sections, and five (5) feet beyond the toe of slope for fill sections, unless an additional length is required as outlined in the "TRENCH EXCAVATION AND PIT LOCATION" specification.

All crossings under existing pavement must be installed as outlined in the "CONSTRUCTION OF HIGHWAY CROSSINGS BY BORE" specification.

The depth of cover for crossings shall be twenty-four (24) inches for non-plastic pipe and thirty (30) inches for plastic pipe under ditches. The encasement pipe must be a minimum of eighteen (18) inches or 1/2 the diameter of the pipe, whichever is greater, below the bottom of the pavement structure.

The encasement shall consist of a steel pipe around and outside the carrier pipe and support the load of the ground above the pipe, the highway, and the superimposed loads there on, including construction equipment. HDPE pipe with a SDR ratio of 11 or greater may be used for encasement of water service lines. The HDPE pipe must be a single continuous piece with no joints. The strength of the encasement pipe shall equal or exceed the structural requirements for highway drainage culverts covered under ASTM specifications.

3. **ABOVE GROUND APPURTENANCES** – Fire hydrants, air release valves, and other similar appurtenances should be located at or near the right of way line. All fire hydrants will be equipped with breakaway bases and should not be located in the sidewalk. Any appurtenances may not be located any closer than 3 ft from back of curb.

Pumps, wells, and other structures associated with lift stations and pump stations will not be permitted within the limits of TxDOT right of way.

4. **MANHOLES** – The outside diameter of the manhole chimney at ground level shall not exceed thirty-six (36) inches. The inside diameter of the manhole for lines up to twelve (12) inches shall not exceed four (4) feet. For any increase in line size greater than twelve (12) inches the manhole may be increased a like amount. The manhole cover shall be installed flush with the ground, meet HS-20 load requirements, and weigh at least 175 pounds.

**DAL SPECIAL PROVISION 8-TRENCH EXCAVATE PIT**

1. **GENERAL** – No dirt from a trench or pit excavation shall be placed on the roadway or shoulders. All equipment and stockpiled dirt shall meet the safety clear zone distances listed below or have adequate barricades and warning devices to protect the traveling public.

Topsoil shall be kept separate from other excavation material, and be replaced in accordance with "BACKFILLING" specification.

All pits and trenches shall be kept free from standing water. If trenches and/or bore pits are left open for extended periods of time without a continuous progression of work, the utility will be required to backfill the trench and/or bore pits. Any other pit will not be left open for more than a forty eight (48) hour period.

In all excavations where sloughing is likely to occur, shoring will be utilized to prevent damage to the highway structure(s). The utility agency or contractor shall be responsible for maintaining trench excavation protections as required by provisions of Part 1926, Subpart P – Excavations, Trenching and Shoring of OSHA Standards.

2. **TRENCHING** – Longitudinal installations must be placed as near a uniform alignment to the right of way line as possible. Trenching machine or backhoe may be used. A backhoe will be required if a uniform alignment can't be maintained by use of a trenching machine.

3. **SAFETY CLEAR ZONE DISTANCES** – Minimum clear zone distances required for trench excavations and bore pit locations are as follows:

**For UNCURBED Highways**

- A. Thirty (30) ft. from the edge of pavement (traveled lane) of high-speed (more than 40 mph), high volume (more than 750 vehicles per day) highways.
- B. Sixteen (16) ft\* from edge of pavement of high-speed, low volume (less than 750 vehicles per day) highways.
- C. Sixteen (16) ft\* from ramps.
- D. Ten (10) ft\* for low-speed (40 mph or less) highways.
- E. Ten (10) ft\* for any paved intersections side streets.

\* Five (5) ft MINIMUM from edge of any shoulder.

**For CURBED Highways**

- A. Thirty (30) ft from the back of curb for high-speed highways
- B. Five (5) ft from the back of curb, plus any additional distance to clear sidewalks, for low-speed highways
- C. Five (5) ft from the back of curb for intersecting side street.

**DAL SPECIAL PROVISION 14-BACKFILL**

1. **GENERAL** – As soon as practical, all portions of the excavation shall be backfilled. Trenches and pits shall be backfilled with the material obtained from the excavation or from other sources. Backfill material will be free from stones of such size as to interfere with compaction; free from large lumps which will not break down readily under compaction; and free from frozen lumps, wood or other extraneous material. The TxDOT inspector may reject any material containing more than twenty (20) percent by weight of material retained on a three (3) inch sieve.

The portion of top soil removed from the original excavation shall be replaced, as nearly as feasible, in its original position.

2. **DEPTH OF LIFTS** – The portion of backfill below the top of pipe shall be placed in uniform layers not to exceed eight (8) inches in depth (loose measurement). Backfill above the top of the pipe shall be placed in layers not to exceed ten (10) inches in depth (loose measurement). If the backfill is to support a portion of roadway or embankment, then the material will be placed in uniform layers not to exceed eight (8) inches in depth (loose measurement).

3. **PROCEDURE FOR COMPACTION** – Each layer of backfill material, if dry, shall be wetted uniformly to the moisture content required to obtain a density comparable with the adjacent undisturbed soil and shall be compacted to that density by means of mechanical tampers or rammers. The use of rolling equipment of the type generally used in compacting embankments will be permitted on portions that are accessible to such equipment. Water jetting or ponding will not be permitted.

Special care shall be taken to ensure thorough compaction of material placed under the haunches of the pipe.

Cohesionless materials, such as sand, may be used for general backfilling purposes. Compaction of cohesionless materials shall be done with vibratory equipment.

4. **RESTORATION OF RIGHT OF WAY** – Prompt replacement of sod, removal of debris, and any other restoration necessary to restore the right of way to a condition equal to that which existed prior to the utility installation will be required. In areas of erosion, the use of stabilized backfill may be required. Should settlement or erosion occur within six (6) months of the utility installation, the utility agency will be required to reshape, reseed, and/or resod the area.

5. **EROSION CONTROL** – In order to minimize erosion and sedimentation resulting from the proposed installation, the project area will be revegetated in accordance with Items 162 for Resodding or Item 164 for Reseeding in the latest edition of TxDOT Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges.

Remove all erosion control devices from the State Right of Way upon concurrence with TxDOT's Inspector that 70% of the vegetative coverage of disturbed areas has been established.

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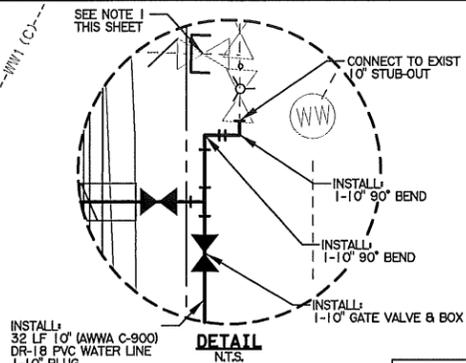
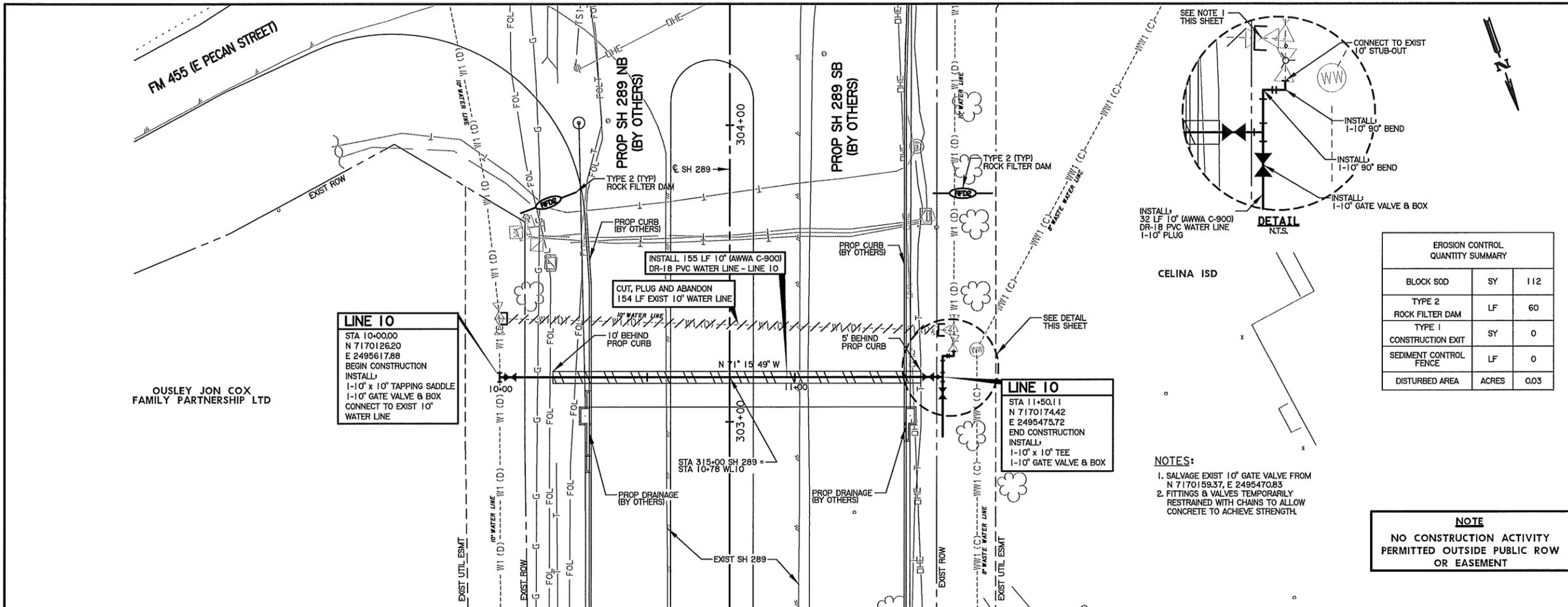
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TxDOT SPECIFICATIONS FOR  
UTILITY INSTALLATIONS



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2595 DALLAS PKWY, STE 204, FRISCO, TX 75034  
Tel: 972-464-4800 Fax: 972-464-4899  
— Civil engineers and surveyors —  
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DRAWN: CAC	JUNE 2012	N. T. S.	950-05	4
CHECKED: JJF				of 7



**EROSION CONTROL QUANTITY SUMMARY**

BLOCK SOD	SY	LF
TYPE 2 ROCK FILTER DAM	60	
TYPE 1 CONSTRUCTION EXIT	0	
SEDIMENT CONTROL FENCE	0	
DISTURBED AREA	ACRES	0.03

**NOTES:**

THE CONTRACTOR SHALL MAKE ALL THE NECESSARY PROVISIONS FOR THE SUPPORT, LOCATING, PROTECTION, RELOCATION, AND TEMPORARY RELOCATION OF ALL UTILITIES AND STRUCTURES BOTH ABOVE AND BELOW THE GROUND DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGES AS A RESULT OF CONSTRUCTION OPERATIONS AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

THE CONTRACTOR SHALL VERIFY THE ELEVATION AND CONFIGURATION OF ALL EXISTING UTILITY LINES PRIOR TO CONSTRUCTION. SUCH VERIFICATION SHALL BE CONSIDERED SUBSIDIARY TO THE COST OF CONSTRUCTION (NO SEPARATE PAY ALLOWED).

THE CONTRACTOR SHALL CONTACT THE FOLLOWING AGENCIES AT LEAST 48 HOURS PRIOR TO ANY CONSTRUCTION AT ANY LOCATION:

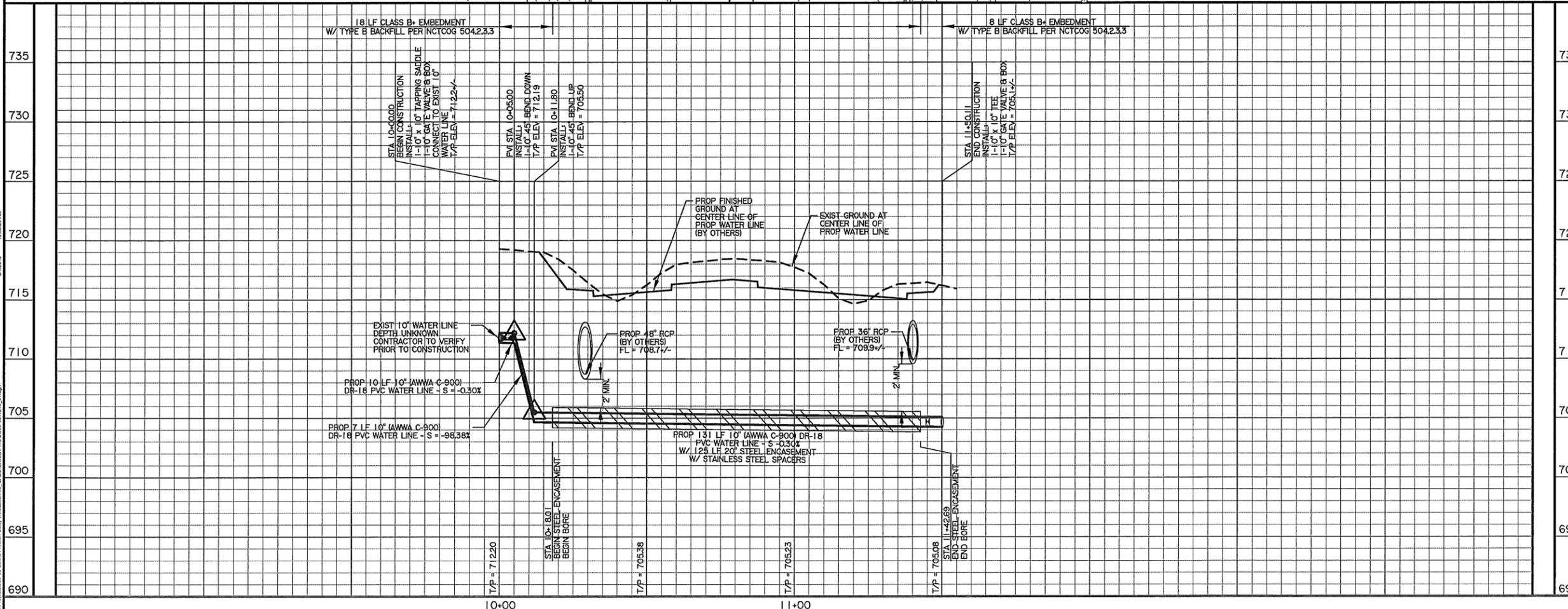
DIG TESS	800-010-TESS
ATMOS ENERGY (GAS)	800-460-3030
GCEC-TELEGRAM	903-482-7274
GCEC-ELECTRIC	903-821-3007
AT&T	972-569-3013
ATMOS ENERGY	972-881-4161
ATMOS ENERGY	214-341-9900
CROSSTEX ENERGY	817-570-6753
ONEOK	903-257-6594
COSERVE-ELEC	940-321-7800
COSERVE-GAS	940-321-7800
COSERVE-MCCORD ENGINEERING	979-324-5597
COF PROSPER	972-347-9969
COF CELINA	972-658-2052
MARILEE SPECIAL UTILITY DISTRICT	972-382-3222
GRANDE	972-410-0583
SUDDEN LINK	469-653-0486

- NOTES:**
1. SALVAGE EXIST 10" GATE VALVE FROM N 7170158.37, E 2495470.83.
  2. FITTINGS & VALVES TEMPORARILY RESTRAINED WITH CHAINS TO ALLOW CONCRETE TO ACHIEVE STRENGTH.

**NOTE**  
NO CONSTRUCTION ACTIVITY PERMITTED OUTSIDE PUBLIC ROW OR EASEMENT

**LEGEND**

	CONCRETE ENCASEMENT
	STEEL ENCASEMENT
	LINE TO BE ABANDONED



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SCALE: 1" = 20'

REV.	DESCRIPTION	BY	DATE
1	RELOCATE WATER LINE	AL	07/17/2012

**CITY OF CELINA, TEXAS**

302 W. Walnut Street  
Celina, Texas 75009  
(972) 382-2682

SH 289 WATER LINE RELOCATION AT FM 455

10" WATER PLAN & PROFILE LINE 10

**BROWN & GAY ENGINEERS, INC.**

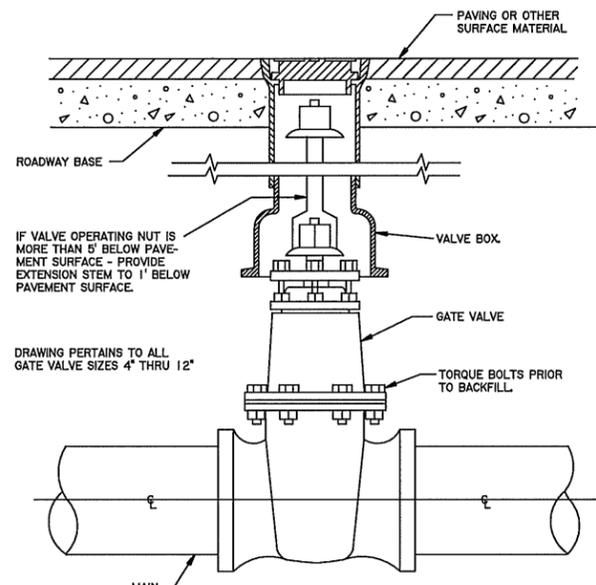
Brown & Gay Engineers, Inc.  
2595 DALLAS PKWY, STE 204, FRISCO, TX 75034  
Tel: 972-464-4800 Fax: 972-464-4899  
— Civil engineers and surveyors —  
TBPE Registration No. F-1046

DESIGNED BY	DATE	SCALE	PROJECT NO.	Sheet
JJF	JUNE 2012	1"=20'H 1"=5'V	950-05	5 of 7

BROWN & GAY ENGINEERS, INC.  
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**NOTE:**

IN UNPAVED AREAS, INSTALL 2' x 2' x 4" CONCRETE VALVE PAD FLUSH WITH THE TOP OF VALVE BOX. REINFORCE WITH #3 BARS ON 6" CENTERS BOTH WAYS.

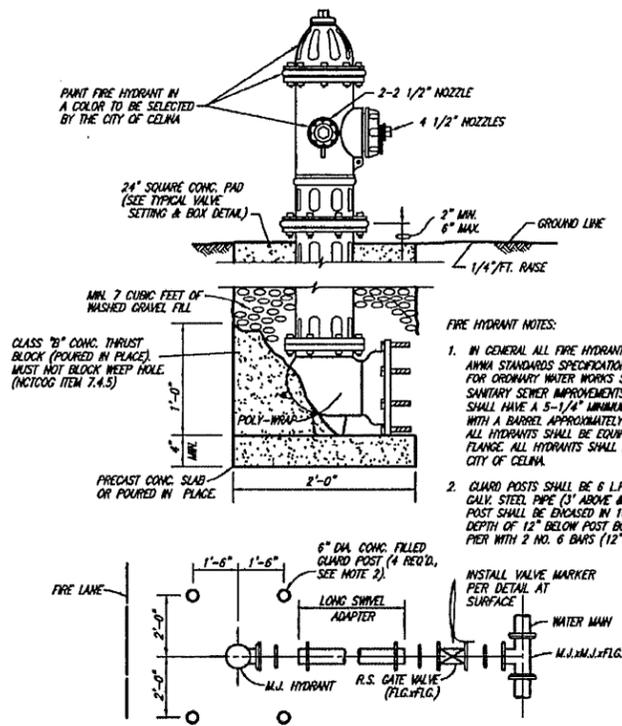


GATE VALVE BOX AND EXTENSION STEM  
N.T.S.

GATE VALVE 4" TO 12"  
BOX & EXTENSION STEM



STANDARD SPECIFICATION REFERENCE  
502.6  
DATE  
OCT. '04  
STANDARD DRAWING NO.  
4050



TYPICAL FIRE HYDRANT INSTALLATION  
NO SCALE

**FIRE HYDRANT NOTES:**

1. IN GENERAL ALL FIRE HYDRANTS SHALL CONFORM TO ANMA STANDARDS SPECIFICATIONS FOR FIRE HYDRANTS FOR ORDINARY WATER WORKS SERVICE FOR WATER AND SANITARY SEWER IMPROVEMENTS. FIRE HYDRANTS SHALL HAVE A 5-1/4" MINIMUM VALVE OPENING AND WITH A BARREL APPROXIMATELY 7" INSIDE DIAMETER. ALL HYDRANTS SHALL BE EQUIPPED WITH A BREAKAWAY FLANGE. ALL HYDRANTS SHALL BE APPROVED BY THE CITY OF CELINA.
2. GUARD POSTS SHALL BE 6 L.F. OF 6" DIA. HOT DIPPED GALV. STEEL PIPE (3' ABOVE & BELOW GROUND LEVEL). POST SHALL BE ENCASED IN 16" DIA. CONC. PIER TO A DEPTH OF 12" BELOW POST BOTTOM. REINFORCE CONC. PIER WITH 2 NO. 6 BARS (12" LONG) THRU POST INTO PIER.

**INSTALL VALVE MARKER PER DETAIL AT SURFACE**

M.I. HYDRANT R.S. GATE VALVE (FLG. & FLG.)

LONG SWIVEL ADAPTER

6" DIA. CONC. FILLED GUARD POST (4 REQ'D, SEE NOTE 2)

1'-6" 1'-6"

2'-0" 2'-0"

2'-0"

2'-0"

2'-0"

2'-0"

2'-0"

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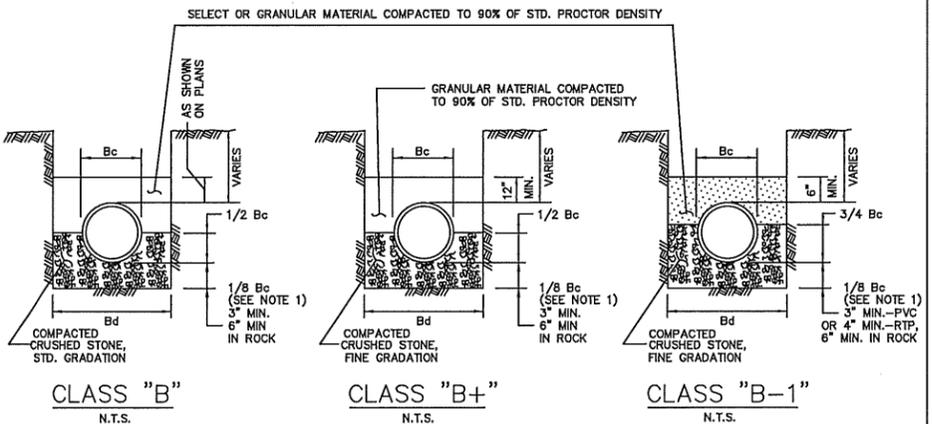
2'-0"

2'-0"

2'-0"

2'-0"

TYPICAL FIRE HYDRANT INSTALLATION  
NO SCALE



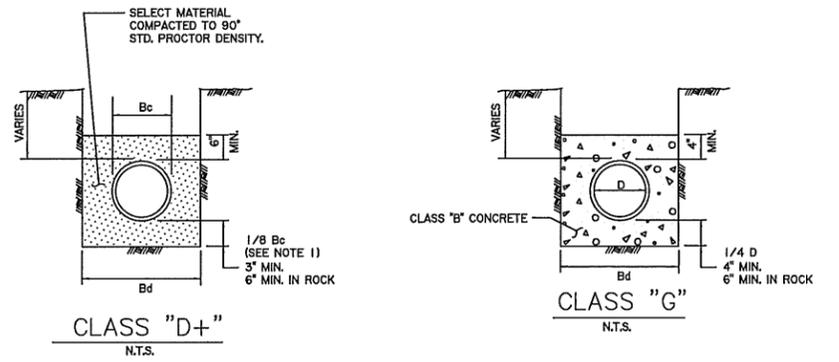
**NOTES:**

1. FOR MAINS 42" DIAMETER AND LARGER, 1/8 Bc SHALL BE TAKEN AS 6".
2. Bc = OUTSIDE DIAMETER OF PIPE
3. Bd = TRENCH WIDTH

EMBEDMENT  
CLASS "B", "B+", & "B-1"



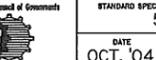
STANDARD SPECIFICATION REFERENCE  
504.5  
DATE  
OCT. '04  
STANDARD DRAWING NO.  
3020



**NOTES:**

1. FOR MAINS 42" DIAMETER AND LARGER, 1/8 Bc SHALL BE TAKEN AS 6".
2. Bc = OUTSIDE DIAMETER OF PIPE
3. Bd = TRENCH WIDTH
4. D = INSIDE DIAMETER OF PIPE

EMBEDMENT  
CLASS "D+" & "G"



STANDARD SPECIFICATION REFERENCE  
504.5  
DATE  
OCT. '04  
STANDARD DRAWING NO.  
3050

**RECORD DRAWING**

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07/31/2012

REV.	DESCRIPTION	BY	DATE

**CITY OF CELINA, TEXAS**  
302 W. Walnut Street  
Celina, Texas 75009  
(972) 382-2682

SH 289 WATER LINE RELOCATION  
AT FM 455

STANDARD DETAILS  
SHEET 1 OF 2

**BROWN & GAY ENGINEERS, INC.**  
2595 DALLAS PKWY, STE 204, FRISCO, TX 75034  
Tel: 972-464-4800 Fax: 972-464-4899  
Civil engineers and surveyors  
T&PE Registration No. F-1046

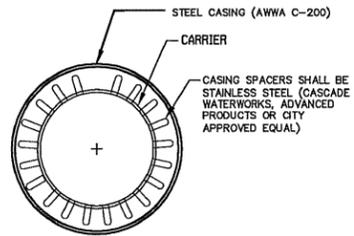
DESIGNED:	DATE	SCALE	PROJECT NO.	Sheet
JJF	JUNE 2012	N.T.S.	950-05	6
DRAWN:				of 7
CAC				
CHECKED:				
JJF				

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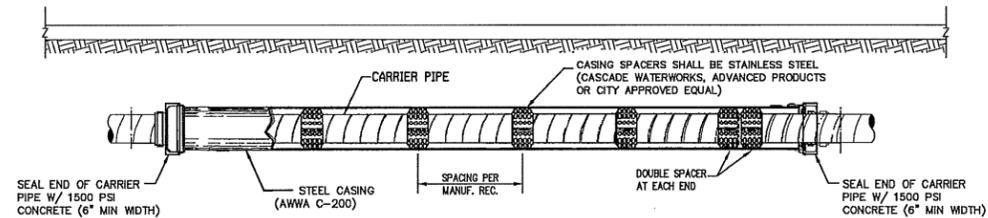
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3020  
OR EXISTING CONDITIONS

DATE PLOTTED: 07/31/2012 10:02:28 AM



**CARRIER PIPE AND CASING PIPE FOR STEEL ENCASEMENT  
SECTION DETAIL**



**NOTES:**

1. CASING SHALL BE INSTALLED AS SHOWN IN PLANS WHERE APPLICABLE. THIS DETAIL ILLUSTRATES THE GENERAL LOCATION OF CASING SPACERS FOR SUPPORTING CARRIER PIPE AND GROUTING ENDS OF CASING PIPE.
2. WATER LINES INSTALLED WITH STEEL ENCASEMENT SHALL INCLUDE AN INTERNAL JOINT RESTRAINT SYSTEM FOR EACH PIPE JOINT OR PROVIDE JOINT RESTRAINT THAT WILL ACCOMMODATE 20", 24" or 28" CASING PIPE AS APPLICABLE.

**BORE AND STEEL ENCASEMENT STANDARD DETAIL**  
N.T.S.

<b>RECORD DRAWING</b>			
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07/31/2012			
<b>REV.</b>	<b>DESCRIPTION</b>	<b>BY</b>	<b>DATE</b>
<b>CITY OF CELINA, TEXAS</b> 302 W. Walnut Street Celina, Texas 75009 (972) 382-2682			
SH 289 WATER LINE RELOCATION AT FM 455			
STANDARD DETAILS SHEET 2 OF 2			
<b>BROWN &amp; GAY ENGINEERS, INC.</b> 2595 DALLAS PKWY, STE 204, FRISCO, TX 75034 Tel: 972-464-4800 Fax: 972-464-4899 — Civil engineers and surveyors — TBPE Registration No. F-1046			
DESIGNED: JJF	DATE: JUNE 2012	SCALE: N.T.S.	PROJECT NO. 950-05
DRAWN: CAC	CHECKED: JJF	SHEET	7 of 7

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