

# WATER LINES W1 & W2 SOUTHEAST SECTOR (W-201411-01)

APRIL 2015

CITY OF CELINA  
ENGINEERING DEPARTMENT  
RELEASED FOR CONSTRUCTION

DATE 9/28/2015 BY [Signature]

PRIOR TO CONSTRUCTION, THE OWNER OR THEIR REPRESENTATIVE SHALL NOTIFY THE CITY OF CELINA ENGINEERING DEPARTMENT AT 972-382-2682 x1081. CONSTRUCTION DRAWINGS STAMPED BY THE CITY OF CELINA SHALL BE ON THE PROJECT SITE AT ALL TIMES DURING CONSTRUCTION. THE CITY OF CELINA STANDARD SPECIFICATIONS FOR CONSTRUCTION SHALL TAKE PRECEDENCE OVER THESE PLANS WHENEVER IN CONFLICT THEREWITH. DISCLAIMER: ALL NECESSARY APPROVALS AND PERMITS SHALL BE ACQUIRED PRIOR TO CONSTRUCTION. EST. 1876

MAYOR  
SEAN TERRY

MAYOR PRO TEM  
CARMEN ROBERTS

CITY COUNCIL  
GEORGE KENDRICK  
WAYNE NABORS  
VINCENT RAMOS

CARMEN ROBERTS  
LORI VADEN  
CHAD ANDERSON

CITY MANAGER  
MIKE FOREMAN

CITY ENGINEER  
GABE JOHNSON, P.E., P.H., CFM



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY CHRISTOPHER J. CHA, P.E. 112732 ON 08/25/2015. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

## SHEET INDEX

SHEET	DESCRIPTION
1	COVER SHEET
2	GENERAL NOTES
3	QUANTITIES
4	TREE TABLE
5	OVERALL WATER MAIN LAYOUT
6 - 8	PLAN & PROFILE LAYOUT
W-1 - W-7	PROPOSED 24" WATER LINE - W1 PLAN & PROFILE
W-8 - W-26	PROPOSED 24" WATER LINE - W2 PLAN & PROFILE
W-27 - W-29	PROPOSED 12" & 16" WATER LINE - W3 PLAN & PROFILE
09-12 - 09-13	CITY OF CELINA, TEXAS: WATER DISTRIBUTION SYSTEM STANDARD DETAILS
EC-1 - EC-3	EROSION CONTROL PLAN
-	TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES (EC(1)-09)(EC(2)-93)
-	TRAFFIC CONTROL PLAN (TCP - 12)



8350 N. CENTRAL EXPWY. SUITE 1000 PH. 972.235.3031  
DALLAS, TX 75206 FAX 972.235.9544  
TX REG. ENGINEERING FIRM F-14439  
TX REG. SURVEYING FIRM LS-101938-05

GENERAL NOTES

1. 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.
2. BEFORE BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL PREPARE A CONSTRUCTION SEQUENCE SCHEDULE. THE CONSTRUCTION SCHEDULE SHALL BE SUCH THAT THERE IS MINIMUM INTERFERENCE WITH TRAFFIC ALONG OR ADJACENT TO THE PROJECT.
3. CONSTRUCTION MAY NOT BEGIN EARLIER THAN 7:00 A.M. ON WEEKDAYS NOR CONTINUE 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 ACCESSED 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.
4. 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-ELECOM	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
COSERV-ELEC	940-321-7800
COSERV-GAS	940-321-7800
CITY OF CELINA	972-382-2682
TOWN OF PROSPER	972-347-9969
MARILEE SUD	972-382-3222
GRANDE	972-410-0583
SUDDEN LINK	469-853-0486

5. WORK MAY NOT BE BACKFILLED OR COVERED UNTIL THE CITY HAS INSPECTED IT.
6. 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:
  - a. UTILITY TRENCH BACKFILL - ONE SOIL DENSITY TEST SHALL BE PERFORMED AT 300 FEET INTERVALS OR AS DIRECTED BY THE INSPECTOR.
  - b. CONCRETE TESTS:
    - (1). COMPRESSIVE STRENGTH - FOUR TEST CYLINDERS SHALL BE TAKEN FROM A REPRESENTATIVE PORTION OF THE CONCRETE BEING PLACED FOR EVERY 150-CUBIC YARDS OF CONCRETE PAVEMENT PLACED, BUT IN NO CASE SHALL LESS THAN 2 SETS OF CYLINDERS BE TAKEN FROM ANY ONE DAY'S PLACEMENT.)
    - (2). AIR, SLUMP, AND TEMPERATURE TESTS SHALL BE TAKEN FOR EVERY SET OF CYLINDERS MADE. CONCRETE WITH A TEMPERATURE ABOVE 95° F WILL BE REJECTED.
    - (3). ADDITIONAL CYLINDERS AND/OR TESTS MAY BE REQUIRED AT THE INSPECTOR'S DISCRETION.

THE CITY SHALL SELECT THE LOCATION AND DEPTH OF EACH SOIL DENSITY TEST UNLESS OTHERWISE DIRECTED.
7. ALL EXCAVATION ON THE PROJECT IS UNCLASSIFIED.
8. 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 MANAGER 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 AND THE CITY OF CELINA EROSION AND SEDIMENT CONTROL MANUAL.
9. 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.
10. THE CONTRACTOR SHALL MAINTAIN TWO-WAY TRAFFIC AT ALL TIMES ALONG THE PROJECT.
11. REMOVE, SALVAGE AND REPLACE ALL STREET AND TRAFFIC CONTROL SIGNS, WHICH MAY BE DAMAGED BY THE CONSTRUCTION OF THE PROJECT.
12. 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.

WATER AND SANITARY SEWER

1. 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.
  2. ALL UTILITY TRENCH BACKFILL SHALL BE PERFORMED IN 12" LOOSE LIFTS AND MECHANICALLY COMPACTED WITH APPROVED VIBRATORY METHODS.
  3. MARKING TAPE SHALL BE INSTALLED ONE FOOT ABOVE AND OVER PVC WATER LINES.
  4. FITTINGS FOR PVC WATER LINES SHALL BE DUCTILE IRON AND BE ENCASED IN A POLYETHYLENE SHEATH.
  5. ALL MECHANICAL JOINTS WILL BE RESTRAINED. (MEGA-LUG ETC.)
  6. VALVES, INCLUDING TAPPING VALVES SHALL BE RESILIENT SEAT GATE VALVES, UNLESS NOTED OTHERWISE.
  7. 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.
  8. 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.
    - a. SIX INCH LINE- SILVER BODY WITH RED BONNET AND CAPS.
    - b. EIGHT INCH LINE- SILVER BODY WITH BLUE BONNET AND CAPS.
    - c. TEN INCH LINE- SILVER BODY WITH GREEN BONNET AND CAPS.
    - d. TWELVE INCH AND LARGER- SILVER BODY WITH YELLOW BONNET AND CAPS.
  9. ALL EXPOSED BOLTING ON ANY BURIED EQUIPMENT OR MATERIAL SHALL BE STAINLESS STEEL. INCLUDED ARE:
    - a. BONNET AND STUFFING BOX BOLTS ON VALVES.
    - b. SHOE BOLTS ON FIRE HYDRANTS.
    - c. FLANGE BOLTS.
    - d. "COR-TEN" MECHANICAL JOINT "T" BOLTS ARE ACCEPTABLE FOR DIRECT BURIAL SERVICE.
  10. DEPENDING ON METER SIZE; METER BOXES SHALL BE DFW37C-12-ISAF, DFW38C-14-ISAF, DFW65C-14-ISAF, OR APPROVED EQUAL, AND SHALL INCORPORATE THE CELINA LOGO IN THE LID.
  11. ONE SAMPLE STATION SHALL BE PROVIDED TO THE CITY FOR EVERY 250 CONNECTIONS.
  12. ALL FIRE HYDRANTS AND WATER VALVES SHALL BE MARKED WITH A T-POST. (NO SEPARATE PAY)
- SPECIFICATIONS ARE NOT MEANT TO EXCLUDE ANY OTHER MANUFACTURER. ANY SPECIFICATION MAY BE REPLACED WITH AN APPROVED EQUAL UPON APPROVAL BY THE CITY OF CELINA.



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY CHRISTOPHER J. CHA, P.E. 112732 ON 08/25/2015. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

JHLSCHER  
08/26/2015 7:47AM  
J:\DWG-35\3551-14\141\DWG\C3020XX\3551-14.141CV.DWG

NO.	DATE	REVISION

8350 N. CENTRAL EXPWY. SUITE 1000  
DALLAS, TX 75206 972.235.3031  
TX REG. ENGINEERING FIRM F-14439  
TX REG. SURVEYING FIRM LS-101938-05

**GENERAL NOTES**

**WATER LINES W1 & W2  
SOUTHEAST SECTOR**

**CITY OF CELINA, COLLIN COUNTY, TEXAS**

DESIGN	DRAWN	DATE	JOB NO.	SHEET NO.
JCI	JCI	AUGUST 2015	3551-14.141	<b>2</b>

WATER LINES W1 & W2 SOUTHEAST SECTOR (W-201411-01)



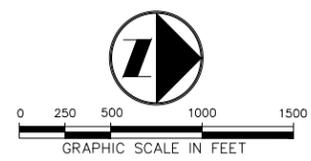


JHLSCHER  
08/26/2015 - 7:47AM  
J:\DWG-35\3551-14\141\DWG\C3020XX\3551-14.141LA.YOUTZ.DWG



*Chris Cha*

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY CHRISTOPHER J. CHA, P.E. 112732 ON 08/25/2015. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.



NO.	DATE	REVISION

8350 N. CENTRAL EXPWY. SUITE 1000  
 DALLAS, TX 75206 972.235.3031  
 TX REG. ENGINEERING FIRM F-14439  
 TX REG. SURVEYING FIRM LS-101938-05

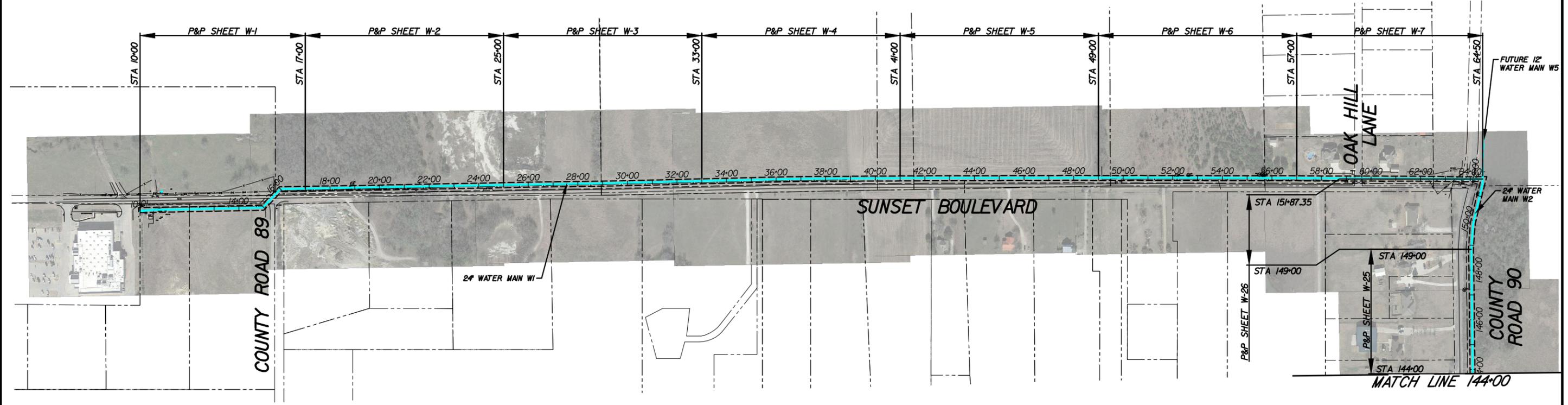
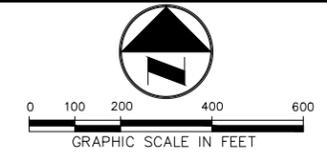
**OVERALL WATER MAIN LAYOUT**

**WATER LINES W1 & W2  
SOUTHEAST SECTOR**

**CITY OF CELINA, COLLIN COUNTY, TEXAS**

DESIGN	DRAWN	DATE	JOB NO.	SHEET NO.
JCI/JLH	JCI/JLH	AUGUST 2015	3551-14.141	<b>5</b>

WATER LINES W1 & W2 SOUTHEAST SECTOR (W-201411-01)



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY CHRISTOPHER J. CHA, P.E. 112732 ON 08/25/2015. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

NO.	DATE	REVISION

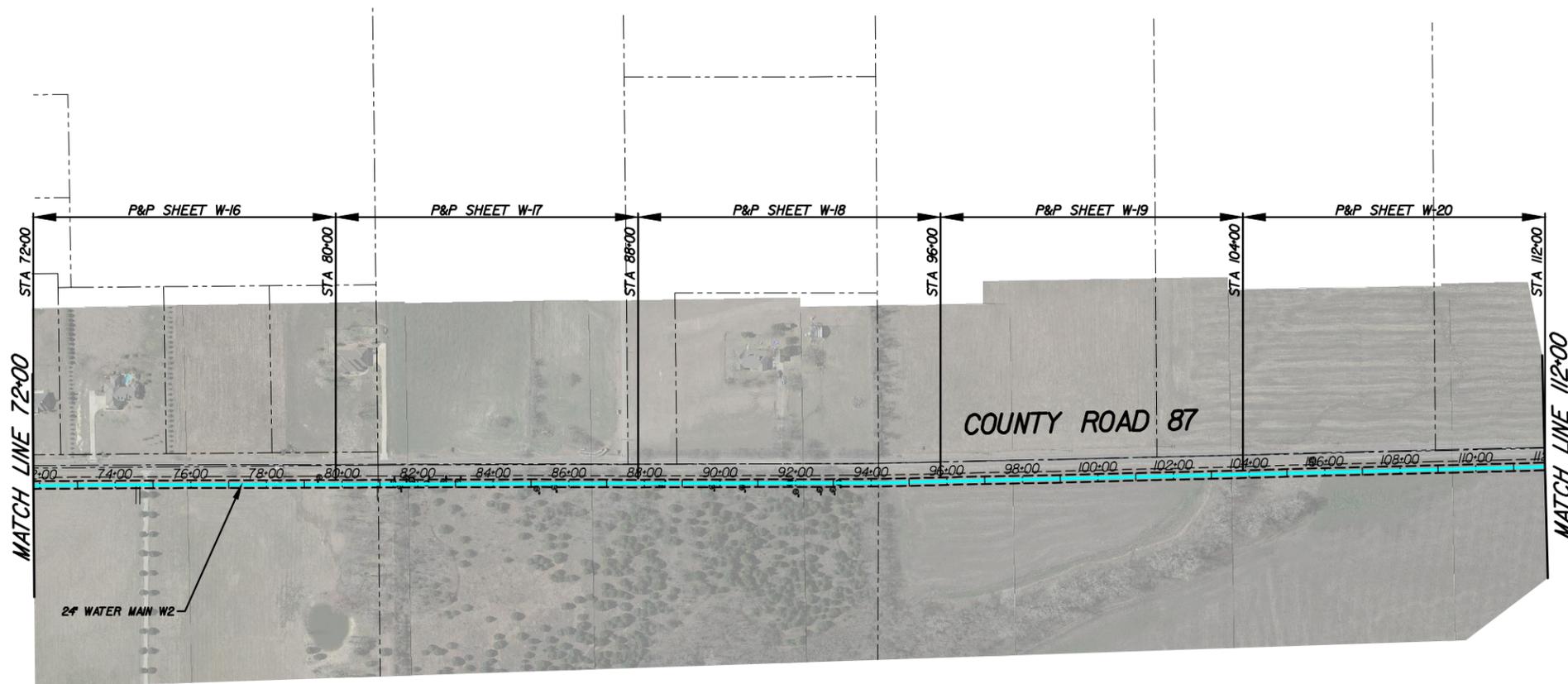
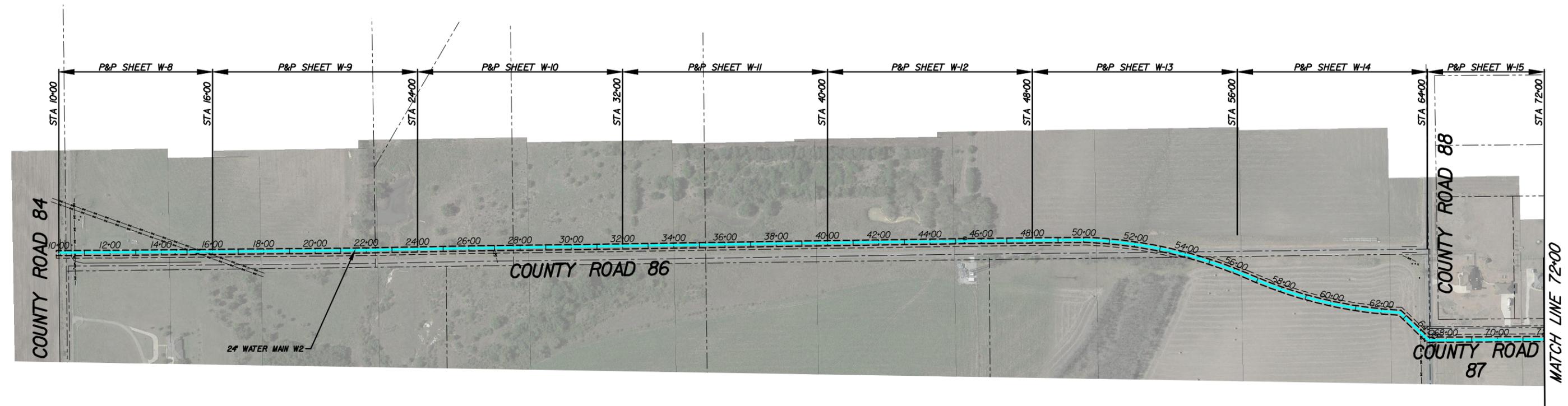
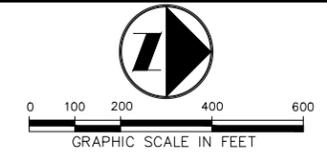
8350 N. CENTRAL EXPWY. SUITE 1000  
 DALLAS, TX 75206 972.235.3031  
 TX REG. ENGINEERING FIRM F-14439  
 TX REG. SURVEYING FIRM LS-101938-05

**PLAN & PROFILE LAYOUT**  
**WATER MAIN W1**  
**WATER LINES W1 & W2**  
**SOUTHEAST SECTOR**  
**CITY OF CELINA, COLLIN COUNTY, TEXAS**

DESIGN	DRAWN	DATE	JOB NO.	SHEET NO.
JCI/JLH	JCI/JLH	AUGUST 2015	3551-14.141	<b>6</b>

JHLSCHER  
 08/26/2015 - 7:48AM  
 J:\DWG-35\3551-14.141\DWG\C3020XA\3551-14.141.LAYOUT.DWG

WATER LINES W1 & W2 SOUTHEAST SECTOR (W-201411-01)



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY CHRISTOPHER J. CHA, P.E. 112732 ON 08/25/2015. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

NO.	DATE	REVISION

8350 N. CENTRAL EXPWY. SUITE 1000  
 DALLAS, TX 75206 972.235.3031  
 TX REG. ENGINEERING FIRM F-14439  
 TX REG. SURVEYING FIRM LS-101938-05

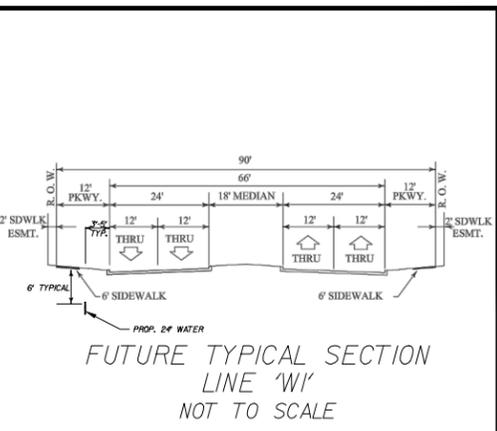
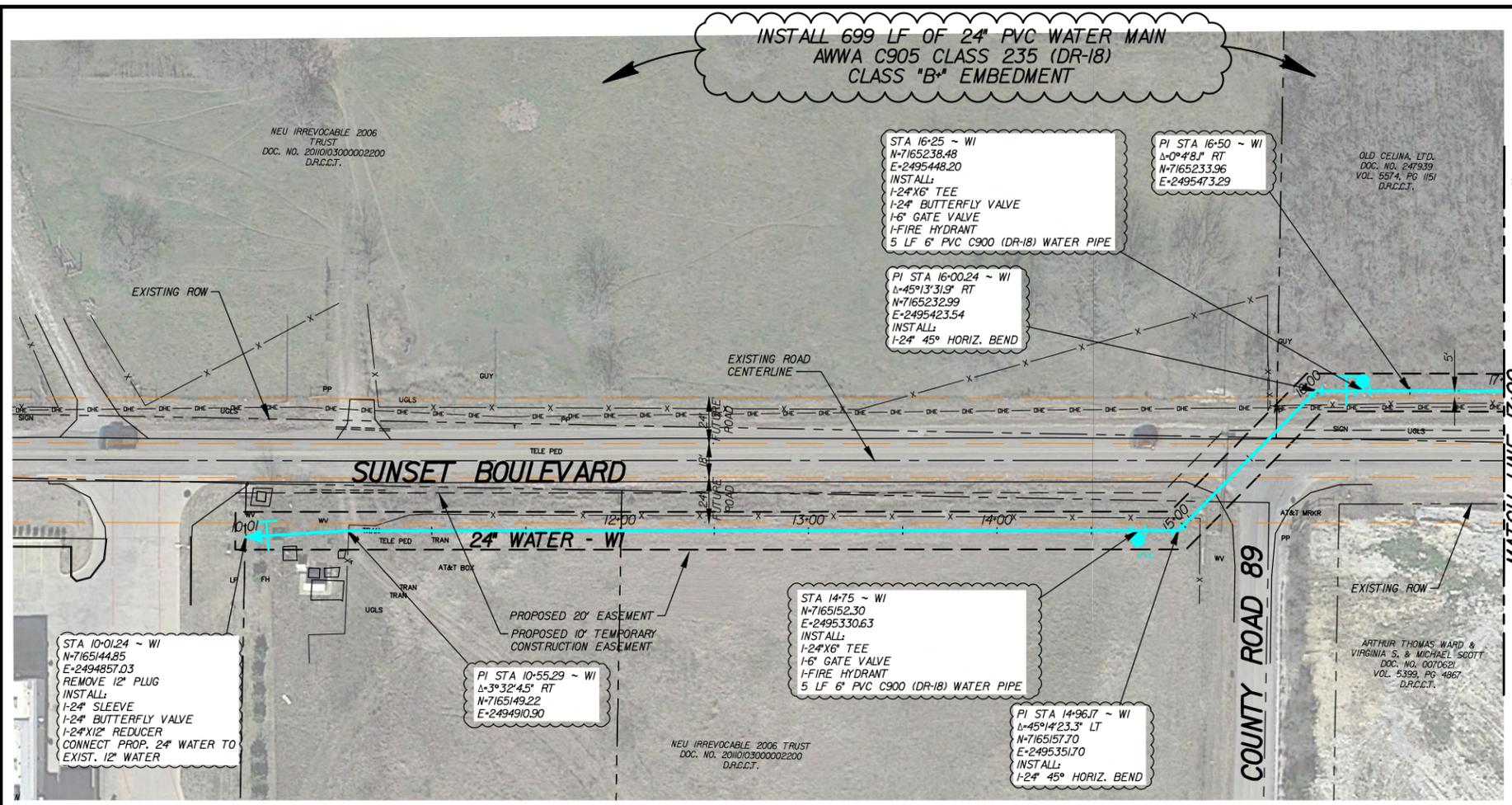
**PLAN & PROFILE LAYOUT**  
**WATER MAIN W2**  
**WATER LINES W1 & W2**  
**SOUTHEAST SECTOR**  
**CITY OF CELINA, COLLIN COUNTY, TEXAS**

DESIGN	DRAWN	DATE	JOB NO.	SHEET NO.
JCI/JLH	JCI/JLH	AUGUST 2015	3551-14.141	<b>7</b>

JHLSCHER  
 08/26/2015 - 7:48AM  
 J:\DWG-35\3551-14.141\DWG\C3020XX\3551-14.141LA.YOUT.DWG

WATER LINES W1 & W2 SOUTHEAST SECTOR (W-201411-07)



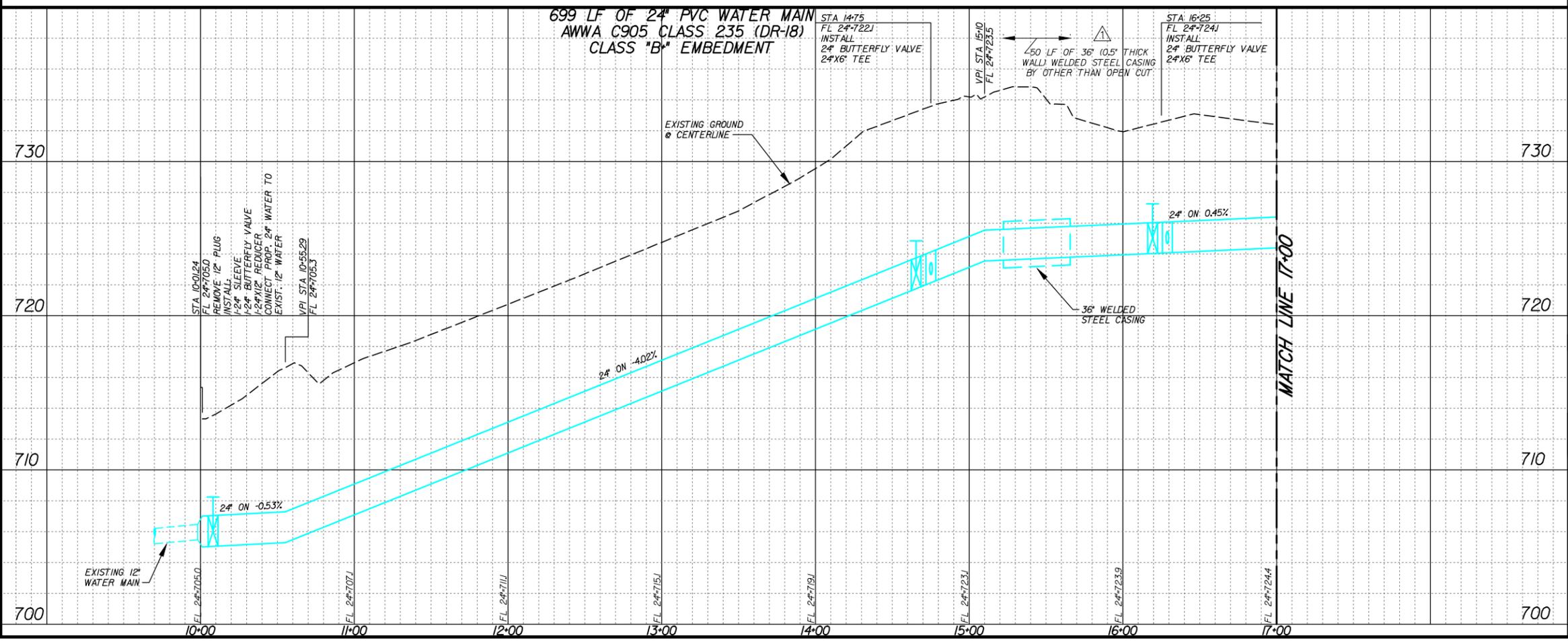


**LEGEND**

— PROPOSED WATER LINE  
— FUTURE EDGE OF PAVEMENT

**NOTE:**

ALL ELEVATIONS ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ELEVATIONS SHOWN ON THESE PLANS.



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY CHRISTOPHER J. CHA, P.E. 112732 ON 08/25/2015. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

NO.	DATE	REVISION
▲	05/19/2015	ADDENDUM #1

8350 N. CENTRAL EXPWY. SUITE 1000  
DALLAS, TX 75206 972.235.3031  
TX REG. ENGINEERING FIRM F-14439  
TX REG. SURVEYING FIRM LS-101938-05

**PROPOSED 24" WATER MAIN - W1**  
**PLAN & PROFILE**  
**STA 10+00 TO 17+00**

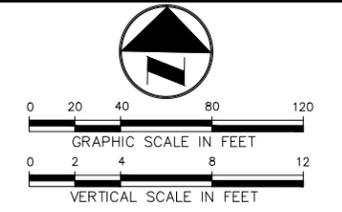
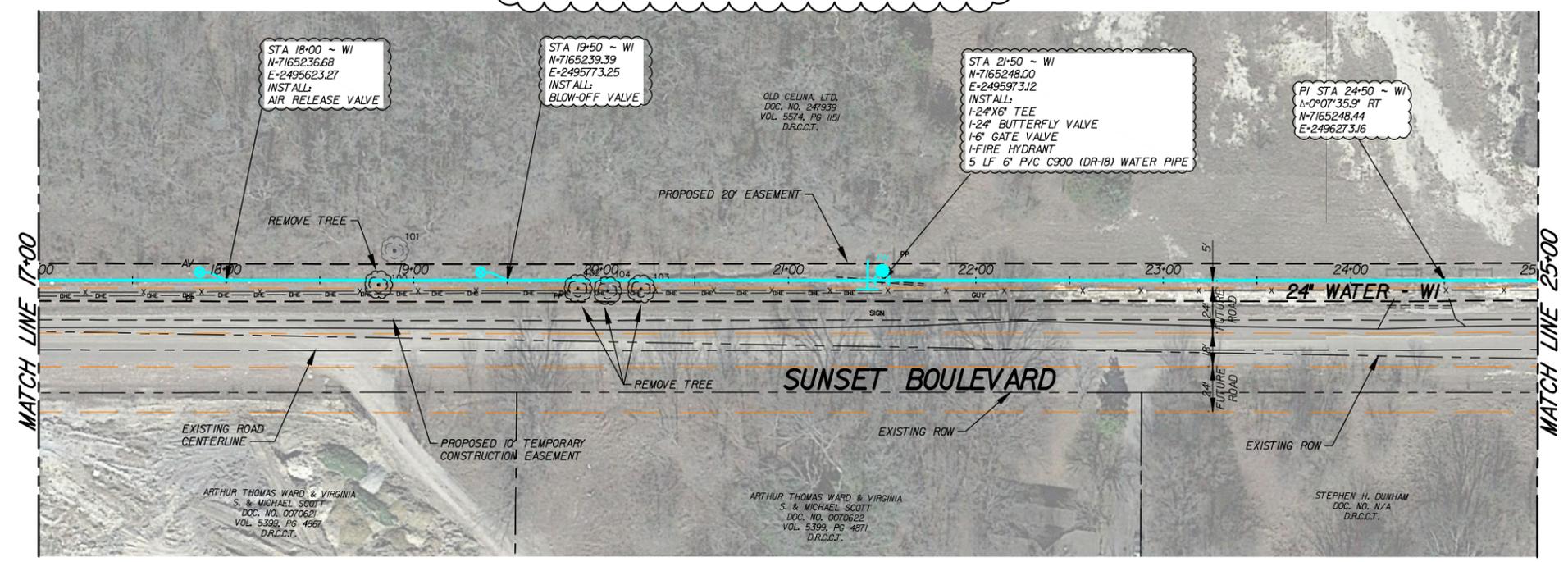
**WATER LINES W1 & W2**  
**SOUTHEAST SECTOR**  
**CITY OF CELINA, COLLIN COUNTY, TEXAS**

DESIGN	DRAWN	DATE	JOB NO.	SHEET NO.
JCI/JLH	JCI/JLH	AUGUST 2015	3551-14.141	<b>W-1</b>

JHLSCHER  
 08/26/2015 - 7:49AM  
 J:\DWG-35\3551-14.141\DWG\C3020XX\3551-14.141.W1.DWG

WATER LINES W1 & W2 SOUTHEAST SECTOR (W-201411-01)

INSTALL 800 LF OF 24" PVC WATER MAIN  
AWWA C905 CLASS 235 (DR-18)  
CLASS "B" EMBEDMENT



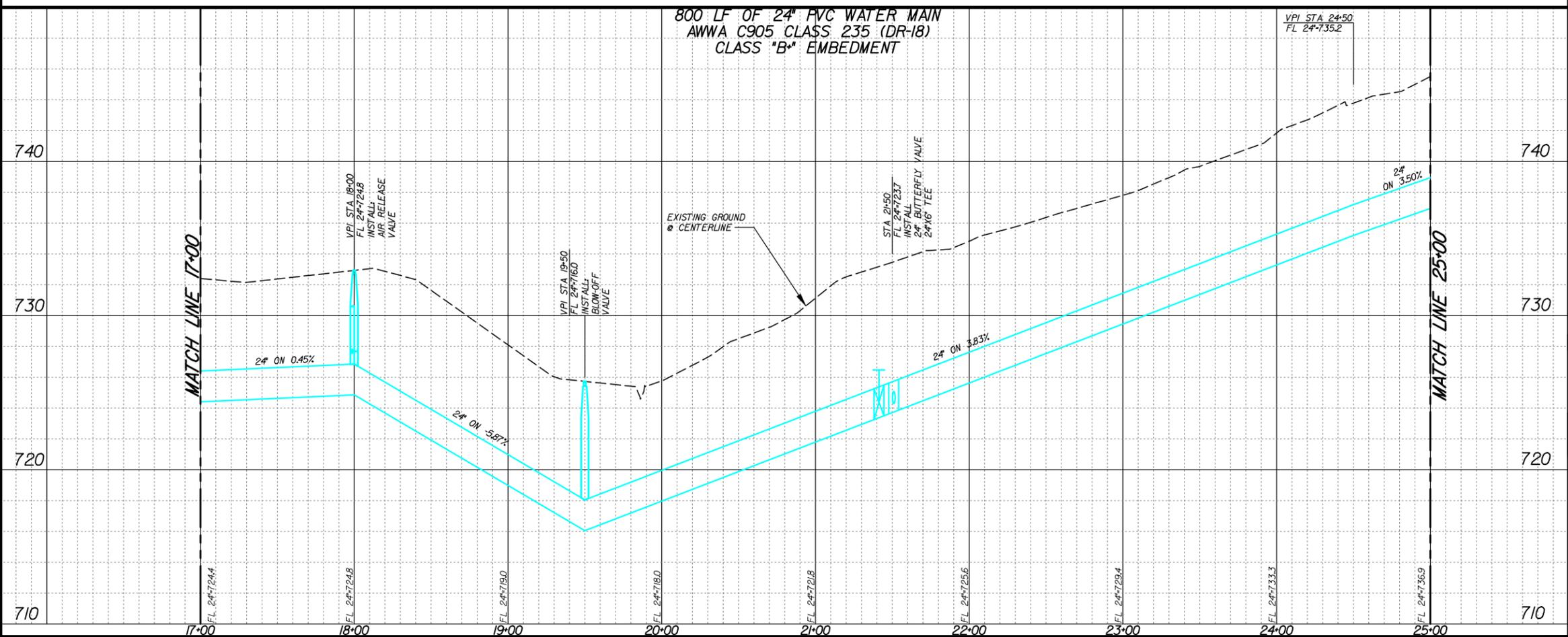
**LEGEND**

— PROPOSED WATER LINE

- - - FUTURE EDGE OF PAVEMENT

**NOTE:**

ALL ELEVATIONS ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ELEVATIONS SHOWN ON THESE PLANS.



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY CHRISTOPHER J. CHA, P.E. 112732 ON 08/25/2015. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

NO.	DATE	REVISION

**Pacheco Koch** 8350 N. CENTRAL EXPY. SUITE 1000  
DALLAS, TX 75206 972.235.3031  
TX REG. ENGINEERING FIRM F-14439  
TX REG. SURVEYING FIRM LS-101938-05

**PROPOSED 24" WATER MAIN - W1  
PLAN & PROFILE  
STA 17+00 TO 25+00**

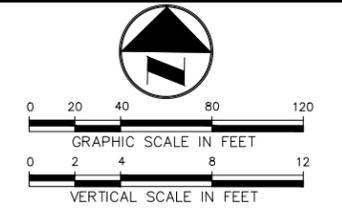
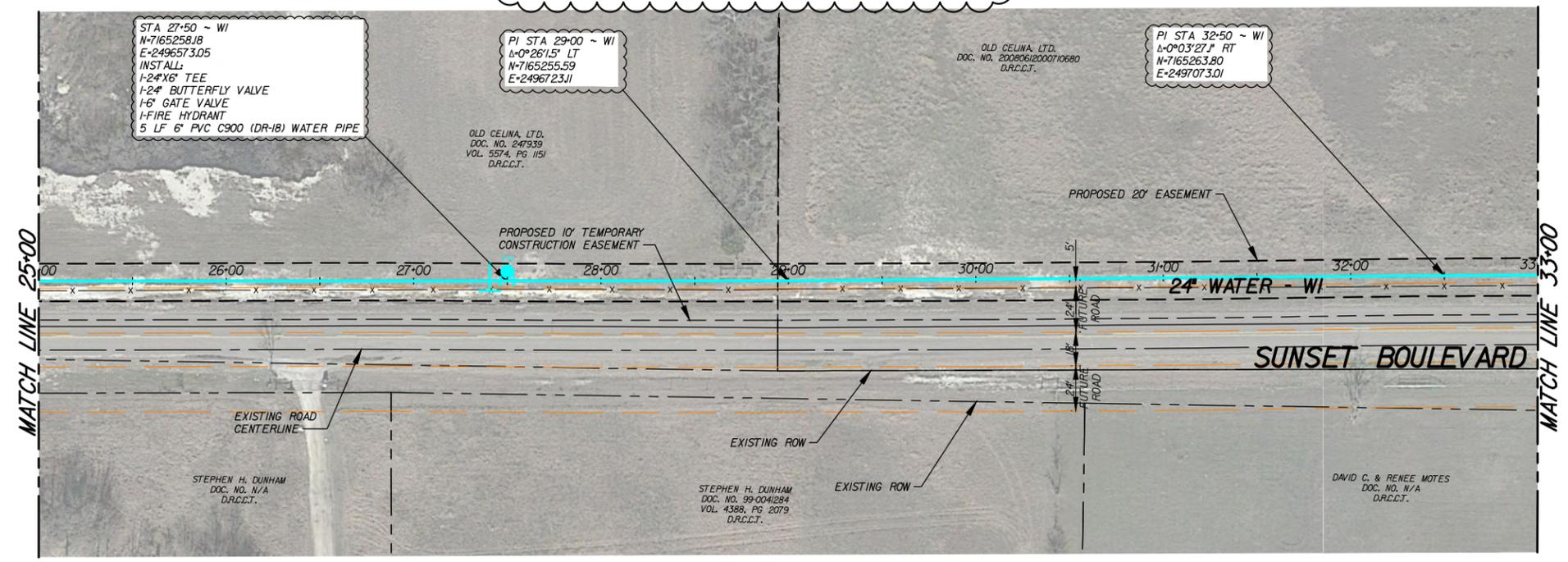
**WATER LINES W1 & W2  
SOUTHEAST SECTOR  
CITY OF CELINA, COLLIN COUNTY, TEXAS**

DESIGN	DRAWN	DATE	JOB NO.	SHEET NO.
JCI/JLH	JCI/JLH	AUGUST 2015	3551-14.141	<b>W-2</b>

JHLSCHER 08/26/2015 7:49AM J:\DWG-35\3551-14.141\DWG\C3020XX\3551-14.141\W1.DWG

WATER LINES W1 & W2 SOUTHEAST SECTOR (W-201411-01)

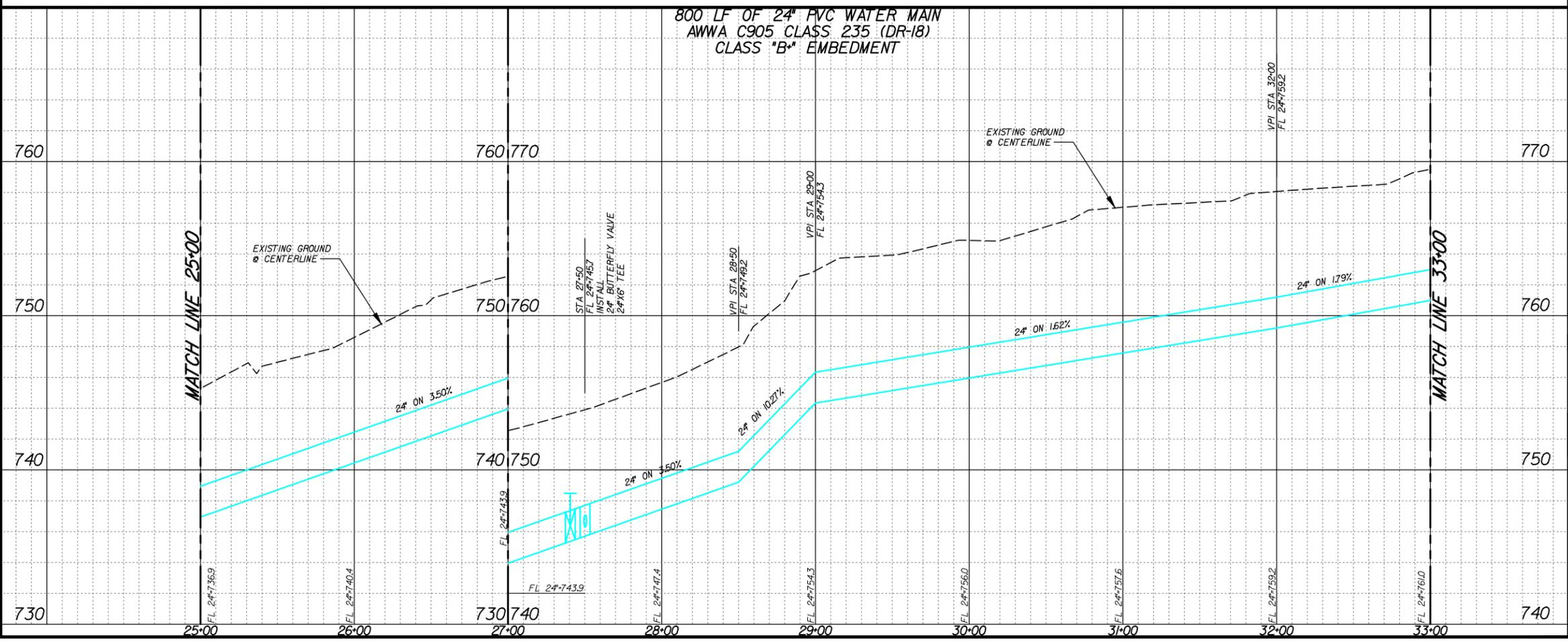
INSTALL 800 LF OF 24" PVC WATER MAIN  
AWWA C905 CLASS 235 (DR-18)  
CLASS "B" EMBEDMENT



LEGEND

- PROPOSED WATER LINE
- FUTURE EDGE OF PAVEMENT

**NOTE:**  
ALL ELEVATIONS ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ELEVATIONS SHOWN ON THESE PLANS.



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY CHRISTOPHER J. CHA, P.E. 112732 ON 08/25/2015. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

NO.	DATE	REVISION

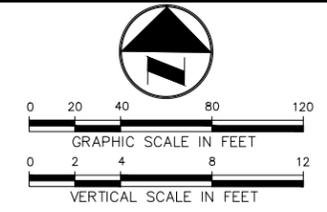
**Pacheco Koch** 8350 N. CENTRAL EXPWY. SUITE 1000  
DALLAS, TX 75206 972.235.3031  
TX REG. ENGINEERING FIRM F-14439  
TX REG. SURVEYING FIRM LS-101938-05

<b>PROPOSED 24" WATER MAIN - W1 PLAN &amp; PROFILE STA 25+00 TO 33+00</b>				
<b>WATER LINES W1 &amp; W2 SOUTHEAST SECTOR CITY OF CELINA, COLLIN COUNTY, TEXAS</b>				
DESIGN	DRAWN	DATE	JOB NO.	SHEET NO.
JCI/JLH	JCI/JLH	AUGUST 2015	3551-14.141	<b>W-3</b>

HILSCHER  
08/26/2015 - 7:49AM  
J: DWG-35\3551-14.141.DWG\3551-14.141.W1.DWG

WATER LINES W1 & W2 SOUTHEAST SECTOR (W-201411-01)

INSTALL 800 LF OF 24" PVC WATER MAIN  
 AWWA C905 CLASS 235 (DR-18)  
 CLASS "B" EMBEDMENT

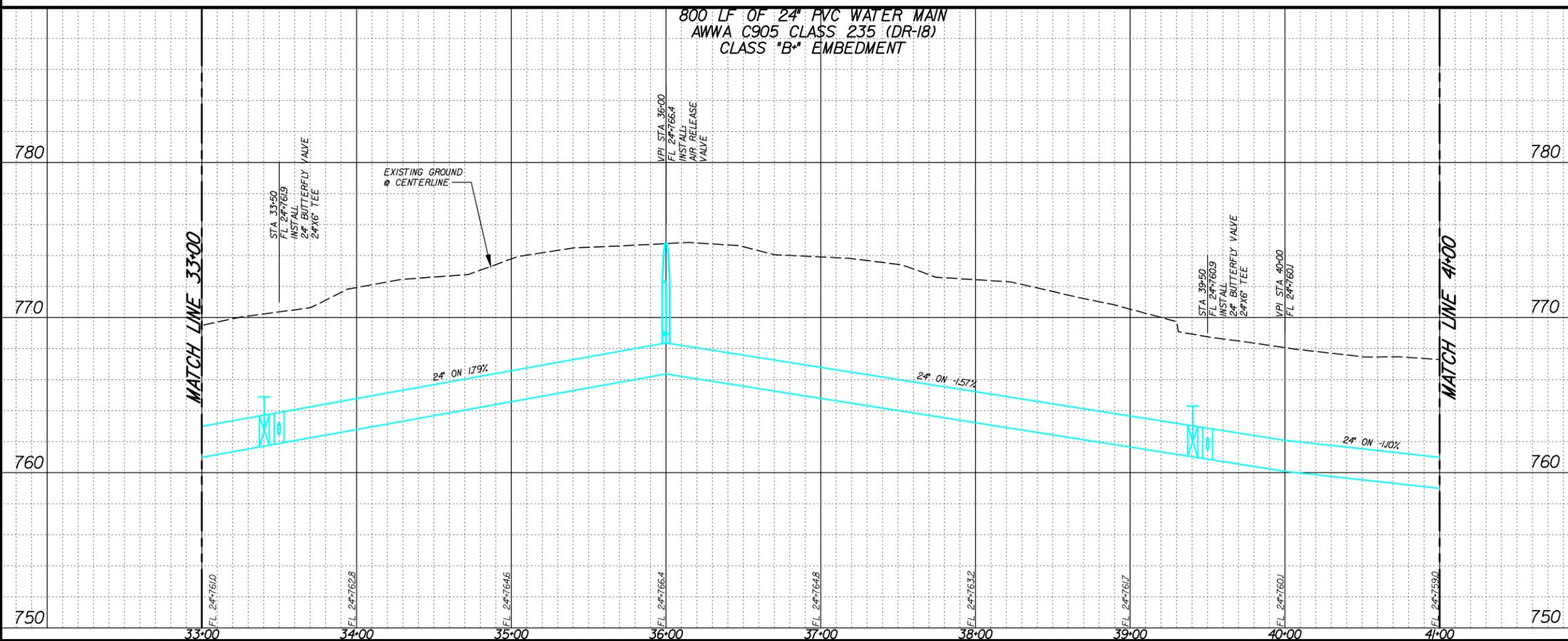
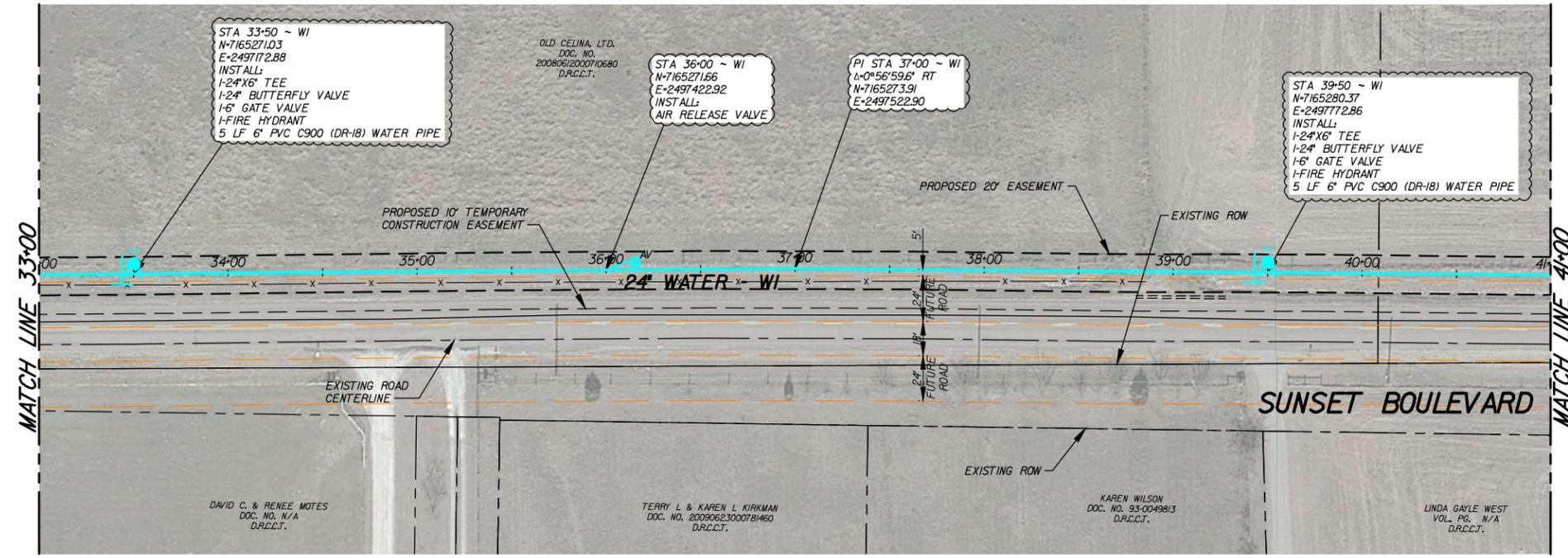


LEGEND

- PROPOSED WATER LINE
- - - FUTURE EDGE OF PAVEMENT

NOTE:

ALL ELEVATIONS ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ELEVATIONS SHOWN ON THESE PLANS.



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY CHRISTOPHER J. CHA, P.E. 112732 ON 08/25/2015. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

NO.	DATE	REVISION

**Pacheco Koch**  
 8350 N. CENTRAL EXPWY. SUITE 1000  
 DALLAS, TX 75206 972.235.3031  
 TX REG. ENGINEERING FIRM F-14439  
 TX REG. SURVEYING FIRM LS-101938-05

**PROPOSED 24" WATER MAIN - W1  
 PLAN & PROFILE  
 STA 33+00 TO 41+00**

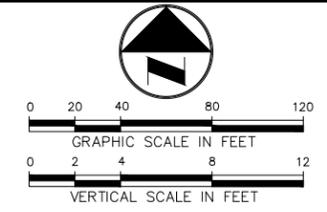
**WATER LINES W1 & W2  
 SOUTHEAST SECTOR  
 CITY OF CELINA, COLLIN COUNTY, TEXAS**

DESIGN	DRAWN	DATE	JOB NO.	SHEET NO.
JCI/JLH	JCI/JLH	AUGUST 2015	3551-14.141	<b>W-4</b>

JHLSCHER  
 08/26/2015 - 7:49AM  
 J:\DWG-35\3551-14.141\DWG\C30202XX\3551-14.141\W1.DWG

WATER LINES W1 & W2 SOUTHEAST SECTOR (W-201411-01)

INSTALL 800 LF OF 24" PVC WATER MAIN  
AWWA C905 CLASS 235 (DR-18)  
CLASS "B" EMBEDMENT

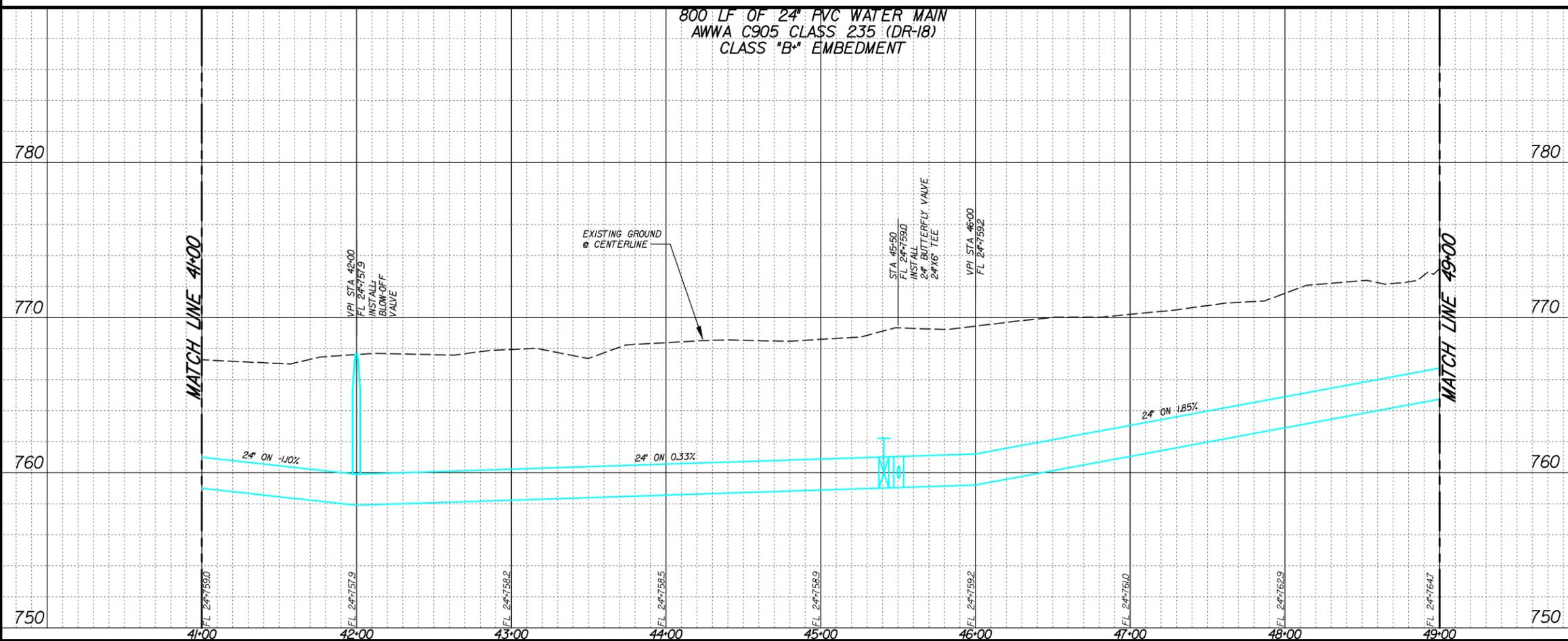
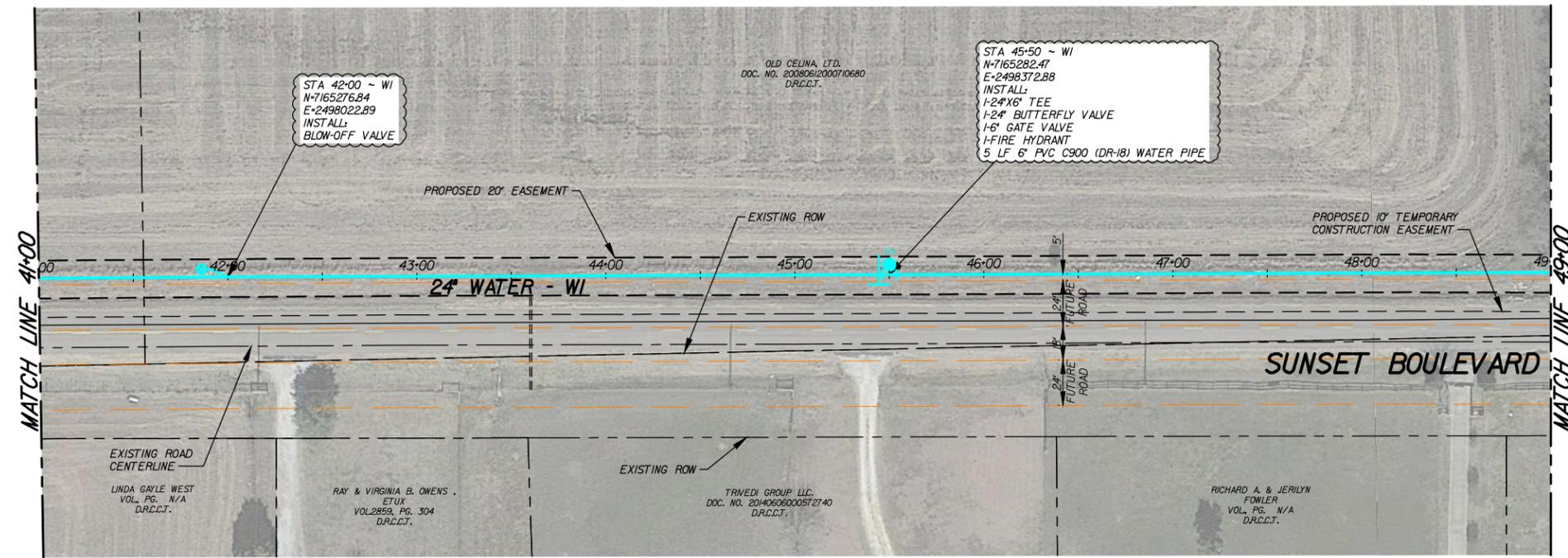


LEGEND

- PROPOSED WATER LINE
- FUTURE EDGE OF PAVEMENT

NOTE:

ALL ELEVATIONS ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ELEVATIONS SHOWN ON THESE PLANS.



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY CHRISTOPHER J. CHA, P.E. 112732 ON 08/25/2015. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

NO.	DATE	REVISION

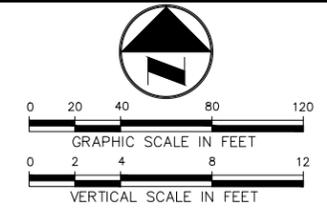
**Pacheco Koch**  
8350 N. CENTRAL EXPWY. SUITE 1000  
DALLAS, TX 75206 972.235.3031  
TX REG. ENGINEERING FIRM F-14439  
TX REG. SURVEYING FIRM LS-101938-05

**PROPOSED 24" WATER MAIN - W1  
PLAN & PROFILE  
STA 41+00 TO 49+00**

**WATER LINES W1 & W2  
SOUTHEAST SECTOR  
CITY OF CELINA, COLLIN COUNTY, TEXAS**

DESIGN	DRAWN	DATE	JOB NO.	SHEET NO.
JCI/JLH	JCI/JLH	AUGUST 2015	3551-14.141	<b>W-5</b>

INSTALL 800 LF OF 24" PVC WATER MAIN  
 AWWA C905 CLASS 235 (DR-18)  
 CLASS "B" EMBEDMENT

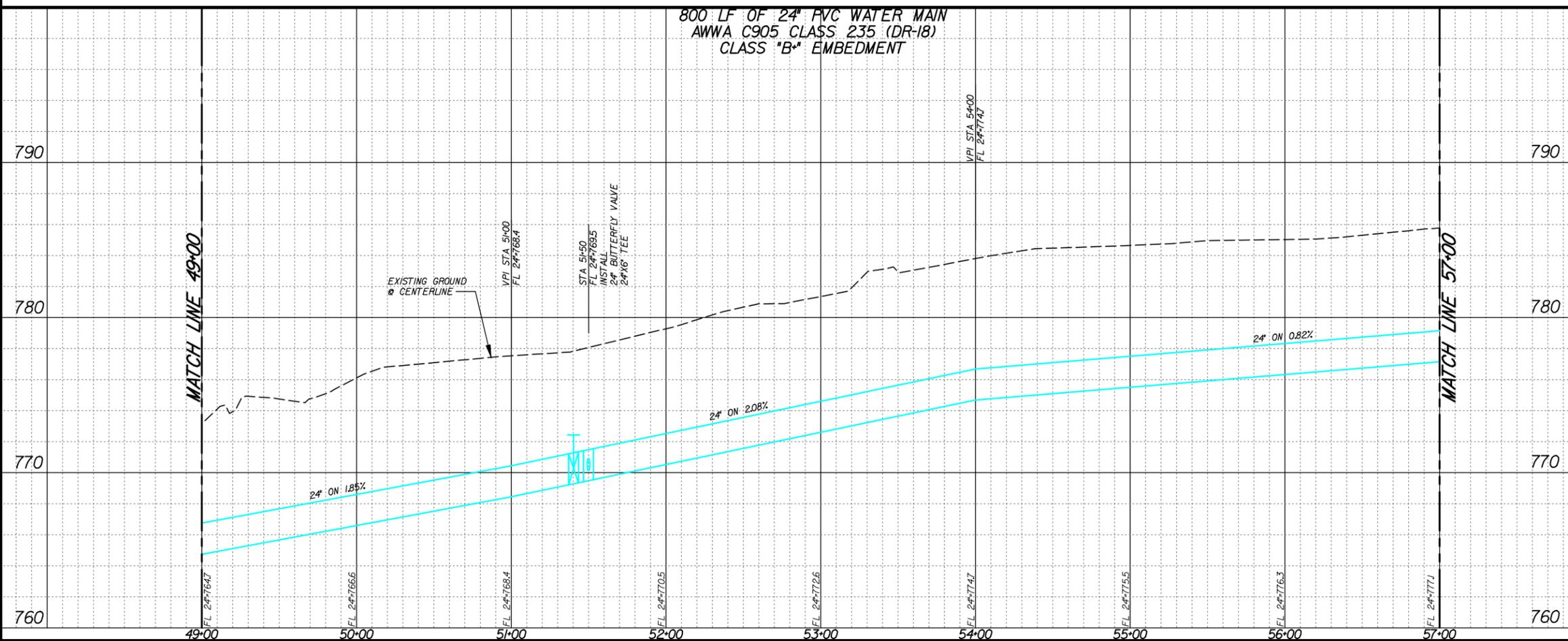
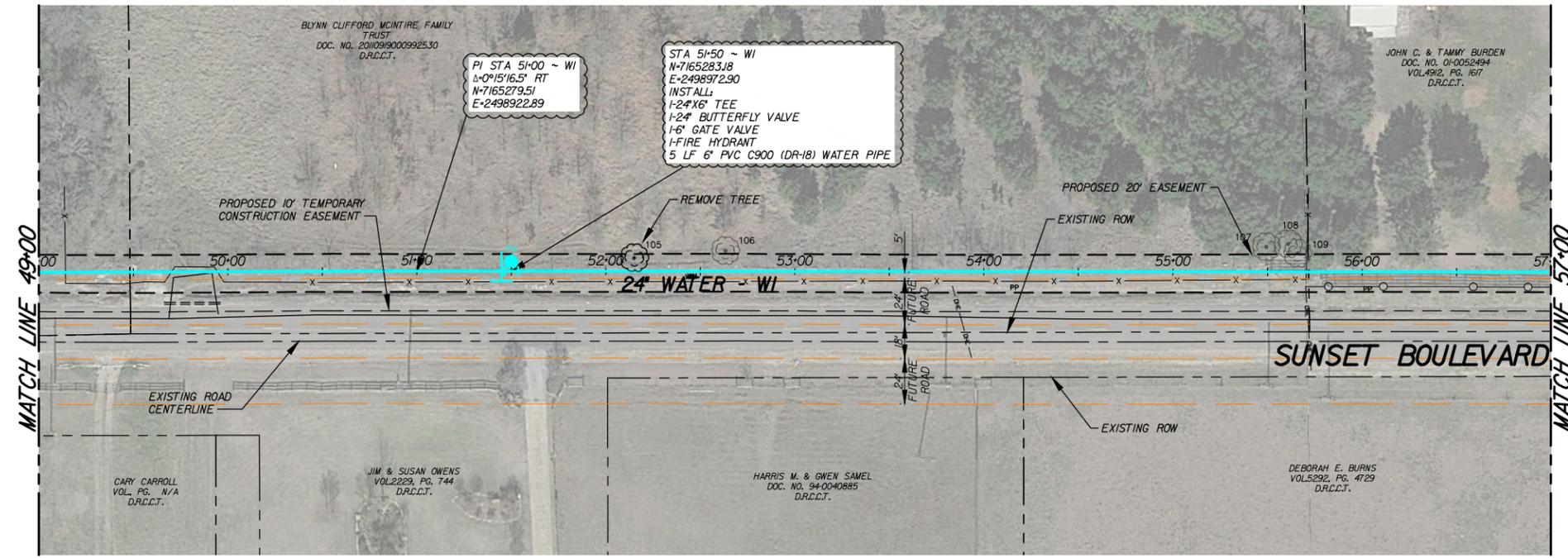


LEGEND

- PROPOSED WATER LINE
- FUTURE EDGE OF PAVEMENT

NOTE:

ALL ELEVATIONS ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ELEVATIONS SHOWN ON THESE PLANS.



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY CHRISTOPHER J. CHA, P.E. 112732 ON 08/25/2015. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

NO.	DATE	REVISION

**Pacheco Koch** 8350 N. CENTRAL EXPWY. SUITE 1000  
 DALLAS, TX 75206 972.235.3031  
 TX REG. ENGINEERING FIRM F-14439  
 TX REG. SURVEYING FIRM LS-101938-05

**PROPOSED 24" WATER MAIN - W1  
 PLAN & PROFILE  
 STA 49+00 TO 57+00**

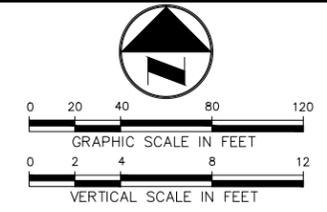
**WATER LINES W1 & W2  
 SOUTHEAST SECTOR  
 CITY OF CELINA, COLLIN COUNTY, TEXAS**

DESIGN	DRAWN	DATE	JOB NO.	SHEET NO.
JCI/JLH	JCI/JLH	AUGUST 2015	3551-14.141	<b>W-6</b>

JHLSCHER  
 08/26/2015 - 7:49AM  
 J:\DWG-35\3551-14.141\DWG\C302020X\3551-14.141\W1.DWG

WATER LINES W1 & W2 SOUTHEAST SECTOR (W-201411-01)

INSTALL 750 LF OF 24" PVC WATER MAIN  
AWWA C905 CLASS 235 (DR-18)  
CLASS "B" EMBEDMENT

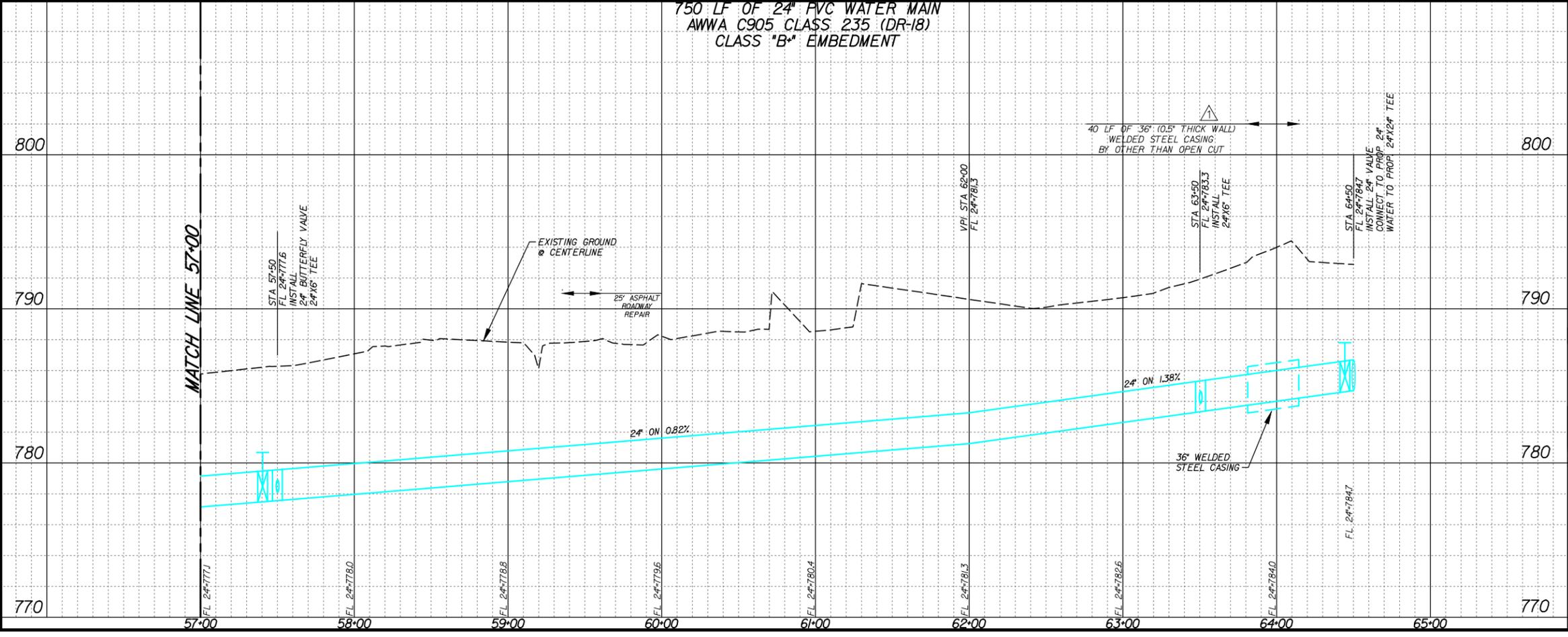
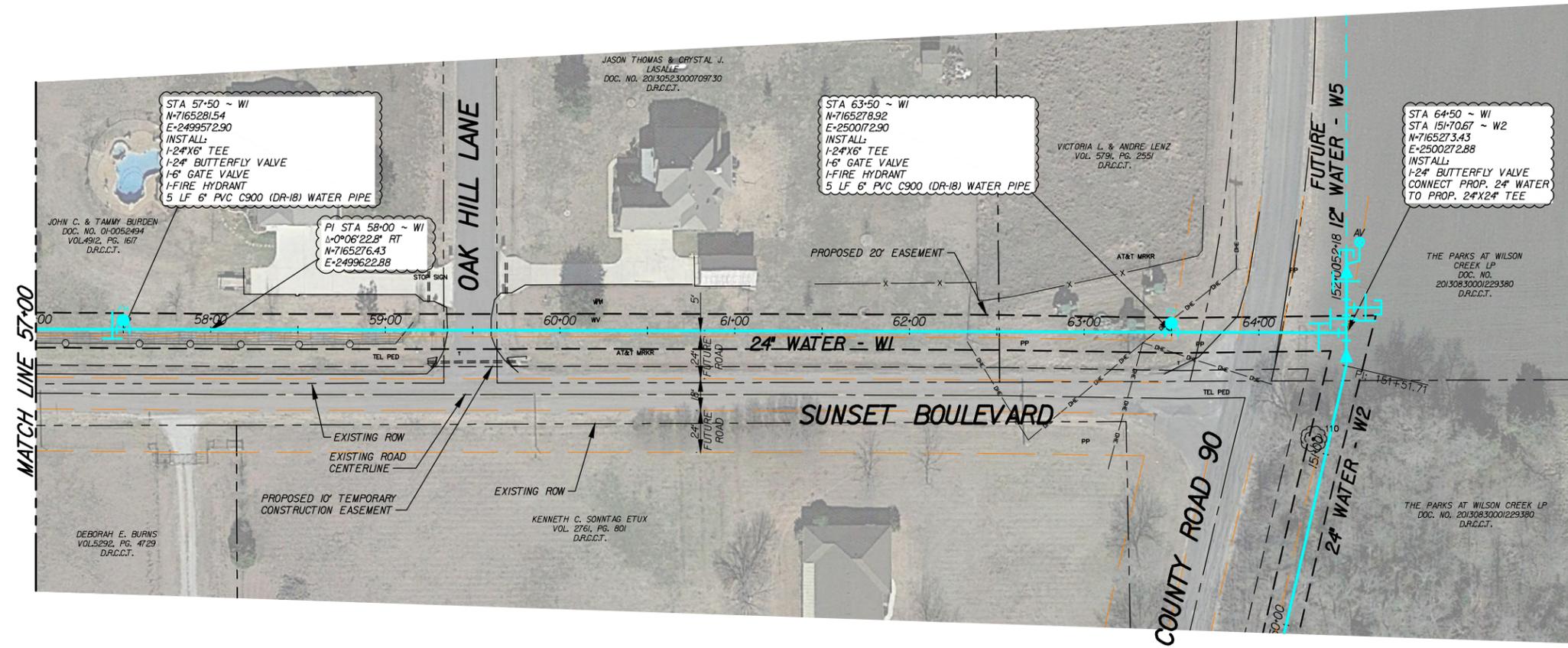


LEGEND

- PROPOSED WATER LINE
- FUTURE EDGE OF PAVEMENT

NOTE:

ALL ELEVATIONS ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ELEVATIONS SHOWN ON THESE PLANS.



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY CHRISTOPHER J. CHA, P.E. 112732 ON 08/25/2015. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

NO.	DATE	REVISION
1	05/19/2015	ADDENDUM

**Pacheco Koch** 8350 N. CENTRAL EXPWY. SUITE 1000  
DALLAS, TX 75206 972.235.3031  
TX REG. ENGINEERING FIRM F-14439  
TX REG. SURVEYING FIRM LS-101938-05

**PROPOSED 24" WATER MAIN - W1  
PLAN & PROFILE  
STA 57+00 TO 64+50**

**WATER LINES W1 & W2  
SOUTHEAST SECTOR  
CITY OF CELINA, COLLIN COUNTY, TEXAS**

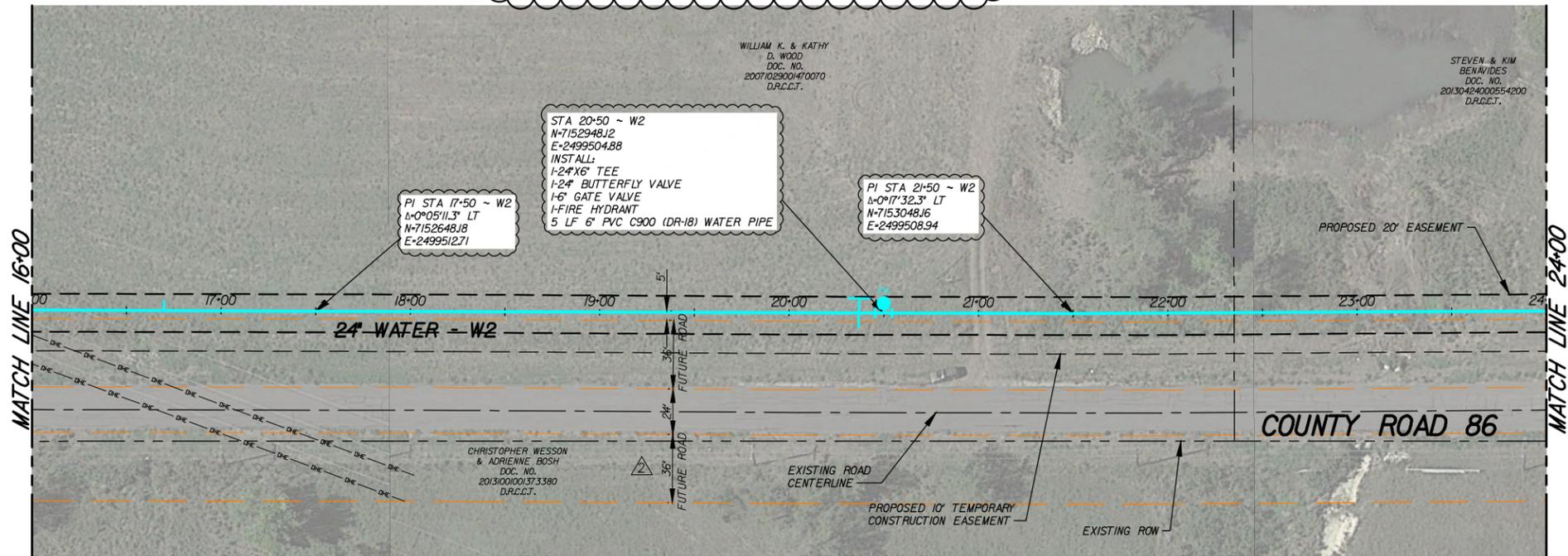
DESIGN	DRAWN	DATE	JOB NO.	SHEET NO.
JCI/JLH	JCI/JLH	AUGUST 2015	3551-14.141	<b>W-7</b>

JHLSCHER  
08/26/2015 - 7:49AM  
J:\DWG-35\3551-14.141\DWG\C3020XX\3551-14.141\W1.DWG

WATER LINES W1 & W2 SOUTHEAST SECTOR (W-201411-01)



INSTALL 800 LF OF 24" PVC WATER MAIN  
AWWA C905 CLASS 235 (DR-18)  
CLASS "B" EMBEDMENT



PI STA 17+50 ~ W2  
N-7152648.18  
E-2499512.71

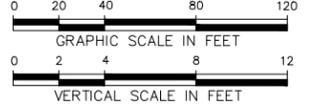
STA 20+50 ~ W2  
N-7152948.12  
E-2499504.88  
INSTALL:  
1-24" X6" TEE  
1-24" BUTTERFLY VALVE  
1-6" GATE VALVE  
1-FIRE HYDRANT  
5 LF 6" PVC C900 (DR-18) WATER PIPE

PI STA 21+50 ~ W2  
N-7153048.16  
E-2499508.94

WILLIAM K. & KATHY  
D. WOOD  
DOC. NO.  
20071029001470070  
D.P.C.C.T.

STEVEN & KIM  
BEHAVIORS  
DOC. NO.  
20130424000554200  
D.P.C.C.T.

CHRISTOPHER WESSON  
& ADRIENNE BOSH  
DOC. NO.  
201300001373380  
D.P.C.C.T.



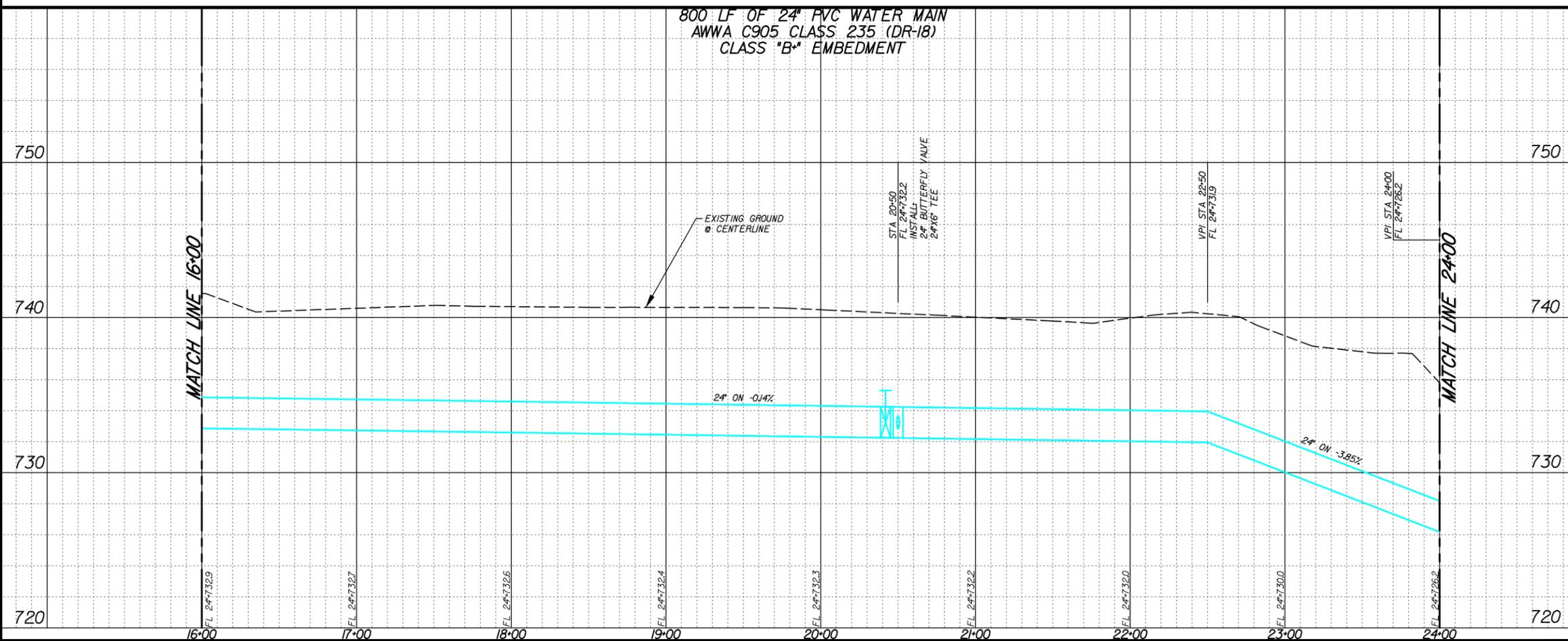
LEGEND

- PROPOSED WATER LINE
- - - FUTURE EDGE OF PAVEMENT

NOTE:

ALL ELEVATIONS ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ELEVATIONS SHOWN ON THESE PLANS.

800 LF OF 24" PVC WATER MAIN  
AWWA C905 CLASS 235 (DR-18)  
CLASS "B" EMBEDMENT



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY CHRISTOPHER J. CHA, P.E. 112732 ON 08/25/2015. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

NO.	DATE	REVISION
1	07/27/2015	LABEL CORRECTION FROM 48" TO 36" FUTURE ROADWAY

**Pacheco Koch**  
8350 N. CENTRAL EXPWY. SUITE 1000  
DALLAS, TX 75206 972.235.3031  
TX REG. ENGINEERING FIRM F-14439  
TX REG. SURVEYING FIRM LS-101938-05

**PROPOSED 24" WATER MAIN - W2  
PLAN & PROFILE  
STA 16+00 TO 24+00**

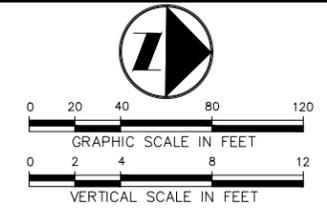
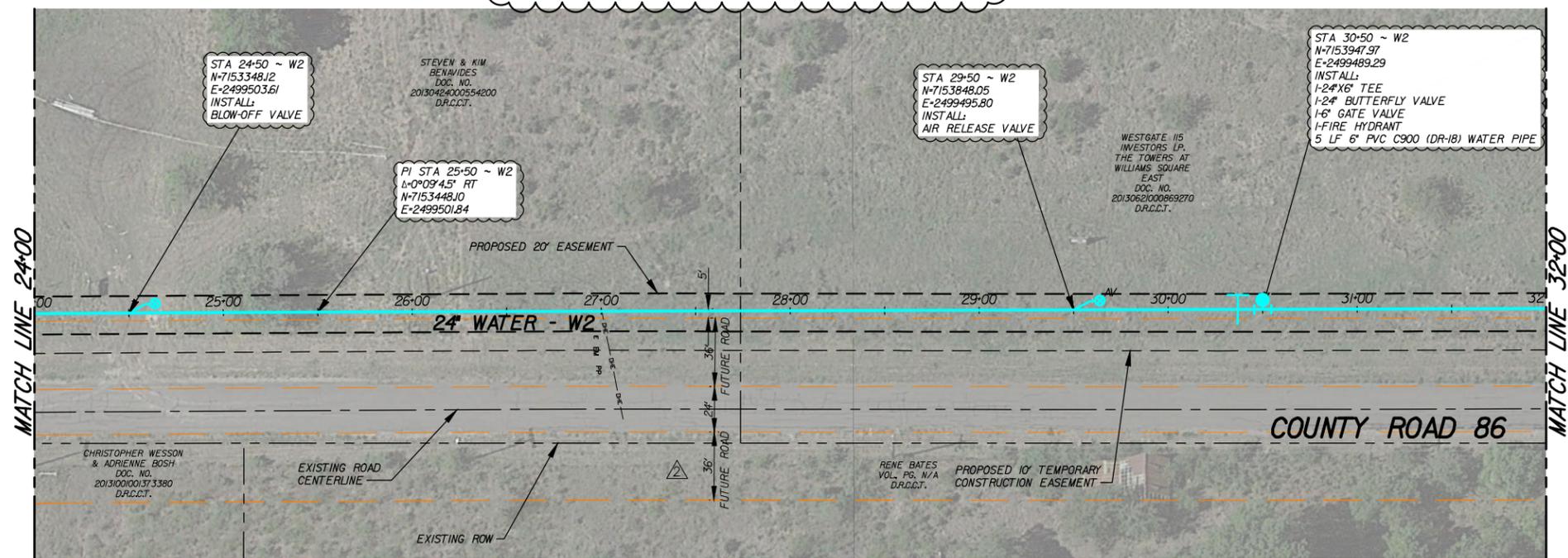
**WATER LINES W1 & W2  
SOUTHEAST SECTOR  
CITY OF CELINA, COLLIN COUNTY, TEXAS**

DESIGN	DRAWN	DATE	JOB NO.	SHEET NO.
JCI/JLH	JCI/JLH	AUGUST 2015	3551-14.141	<b>W-9</b>

JHLSCHER  
08/26/2015 - 7:50AM  
J:\DWG-35\3551-14.141\DWG\C3020XX\3551-14.141W2.DWG

WATER LINES W1 & W2 SOUTHEAST SECTOR (W-201411-01)

INSTALL 800 LF OF 24" PVC WATER MAIN  
AWWA C905 CLASS 235 (DR-18)  
CLASS "B" EMBEDMENT

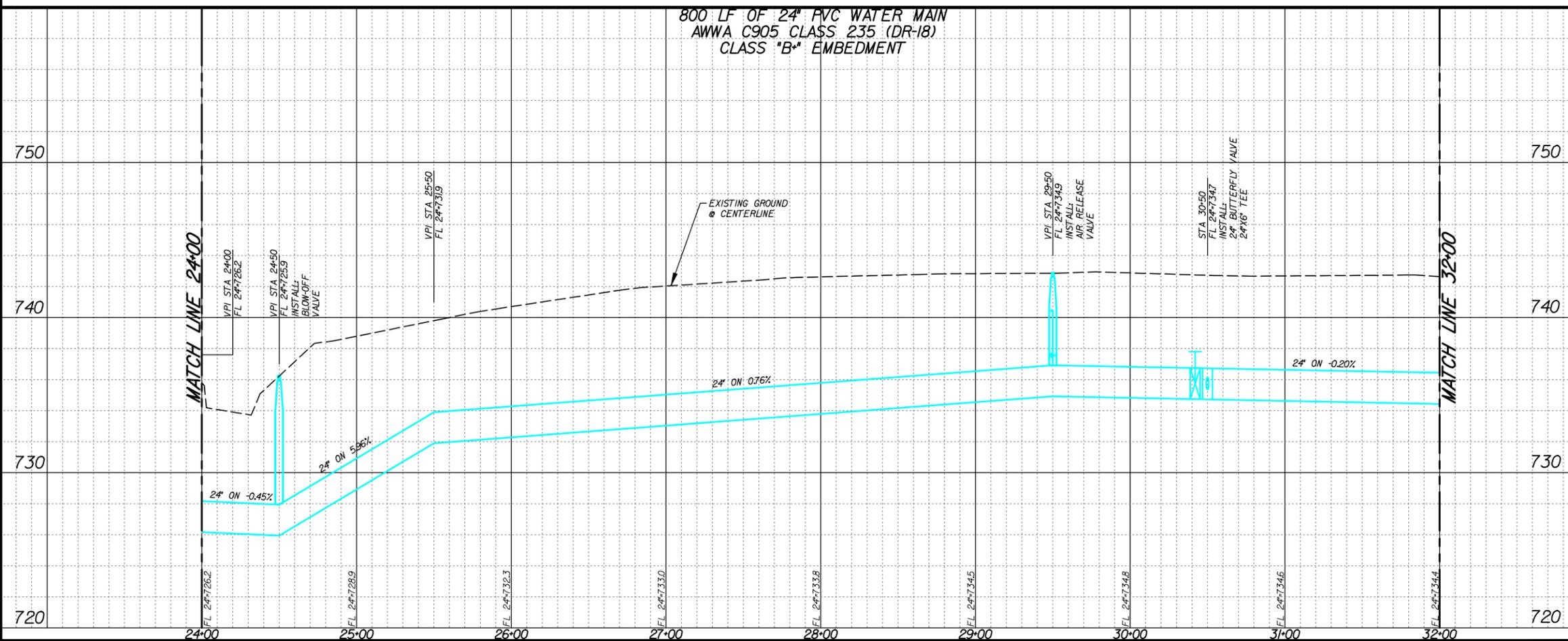


LEGEND

- PROPOSED WATER LINE
- FUTURE EDGE OF PAVEMENT

NOTE:

ALL ELEVATIONS ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ELEVATIONS SHOWN ON THESE PLANS.



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY CHRISTOPHER J. CHA, P.E. 112732 ON 08/25/2015. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

NO.	DATE	REVISION
1	07/27/2015	LABEL CORRECTION FROM 48" TO 36" FUTURE ROADWAY

**Pacheco Koch**  
8350 N. CENTRAL EXPY. SUITE 1000  
DALLAS, TX 75206 972.235.3031  
TX REG. ENGINEERING FIRM F-14439  
TX REG. SURVEYING FIRM LS-101938-05

**PROPOSED 24" WATER MAIN - W2  
PLAN & PROFILE  
STA 24+00 TO 32+00**

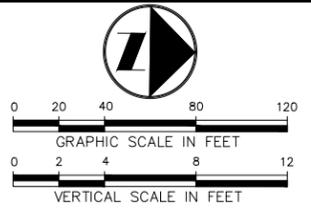
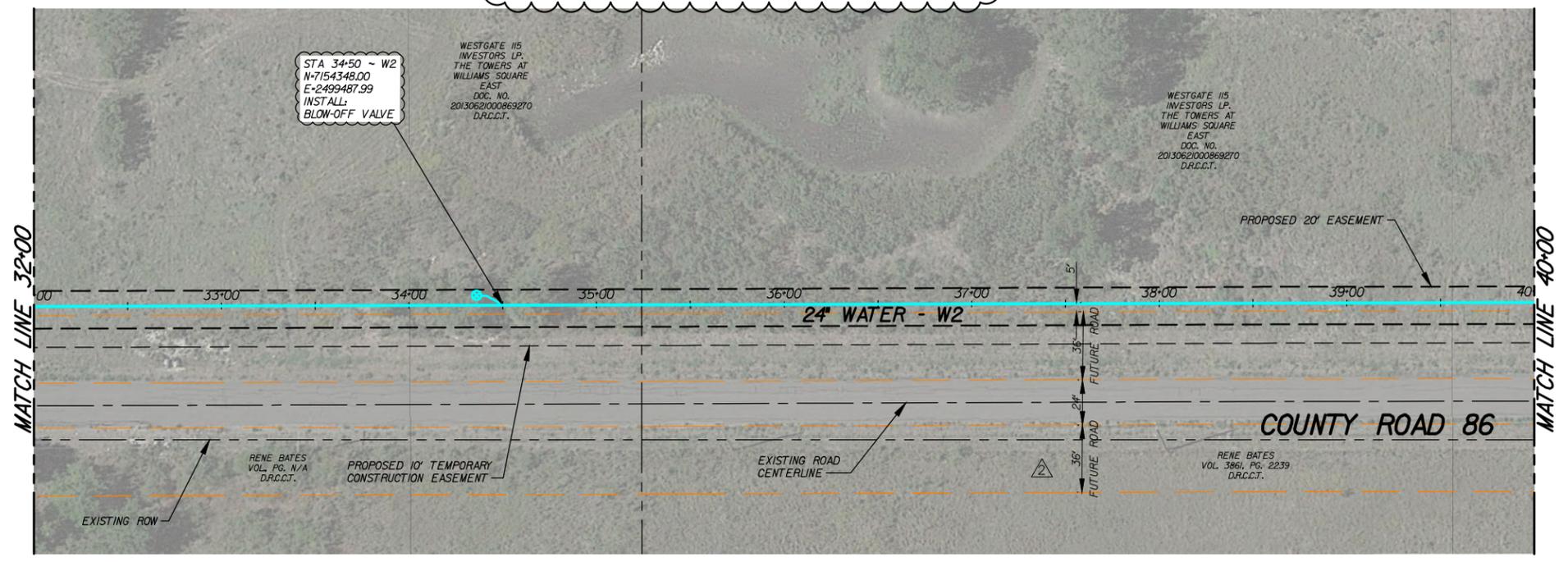
**WATER LINES W1 & W2  
SOUTHEAST SECTOR  
CITY OF CELINA, COLLIN COUNTY, TEXAS**

DESIGN	DRAWN	DATE	JOB NO.	SHEET NO.
JCI/JLH	JCI/JLH	AUGUST 2015	3551-14.141	<b>W-10</b>

JHLSCHER  
08/26/2015 - 7:50AM  
J:\DWG-35\3551-14.141\DWG\C3020XX\3551-14.141W2.DWG

WATER LINES W1 & W2 SOUTHEAST SECTOR (W-201411-01)

INSTALL 800 LF OF 24" PVC WATER MAIN  
AWWA C905 CLASS 235 (DR-18)  
CLASS "B" EMBEDMENT

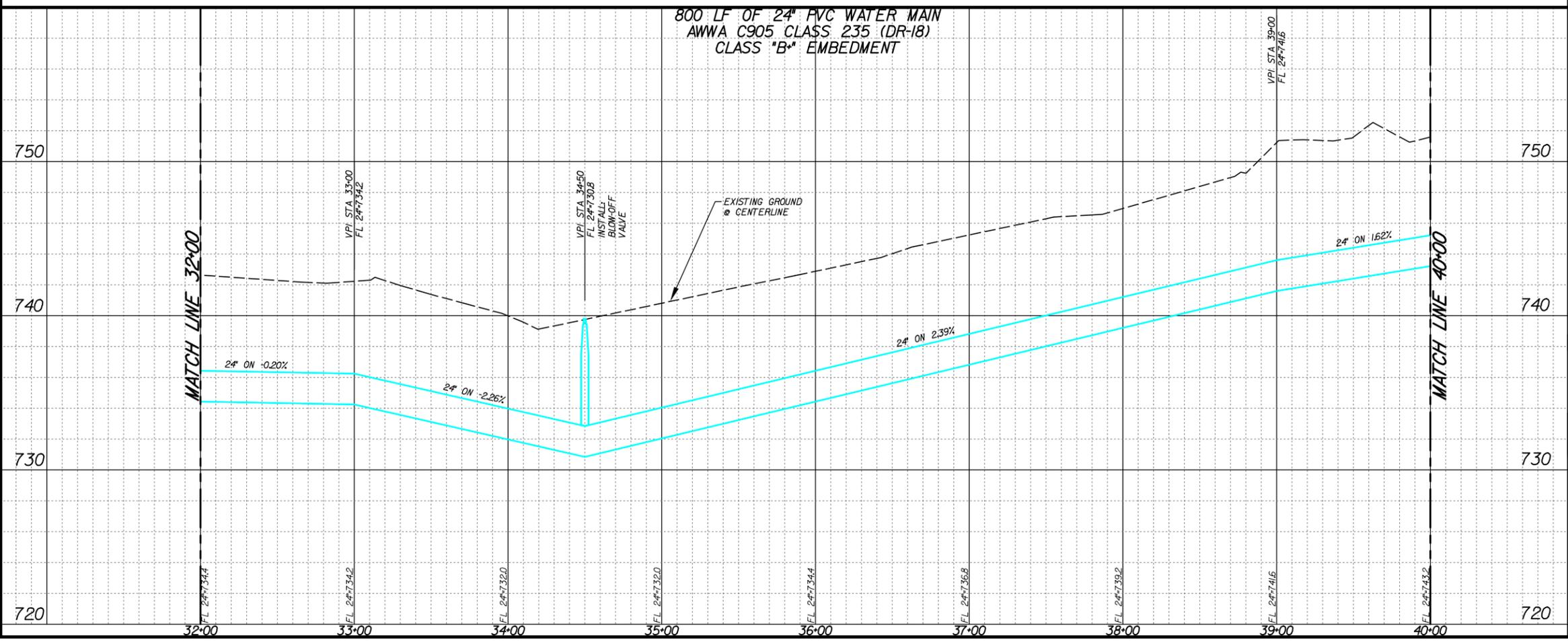


**LEGEND**

- PROPOSED WATER LINE
- - - FUTURE EDGE OF PAVEMENT

**NOTE:**

ALL ELEVATIONS ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ELEVATIONS SHOWN ON THESE PLANS.



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY CHRISTOPHER J. CHA, P.E. 112732 ON 08/25/2015. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

NO.	DATE	REVISION
1	07/27/2015	LABEL CORRECTION FROM 48" TO 36" FUTURE ROADWAY

**Pacheco Koch**  
8350 N. CENTRAL EXPWY. SUITE 1000  
DALLAS, TX 75206 972.235.3031  
TX REG. ENGINEERING FIRM F-14439  
TX REG. SURVEYING FIRM LS-101938-05

**PROPOSED 24" WATER MAIN - W2  
PLAN & PROFILE  
STA 32+00 TO 40+00**

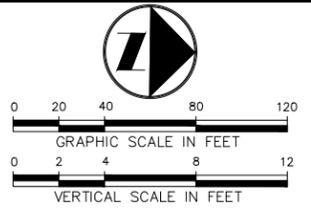
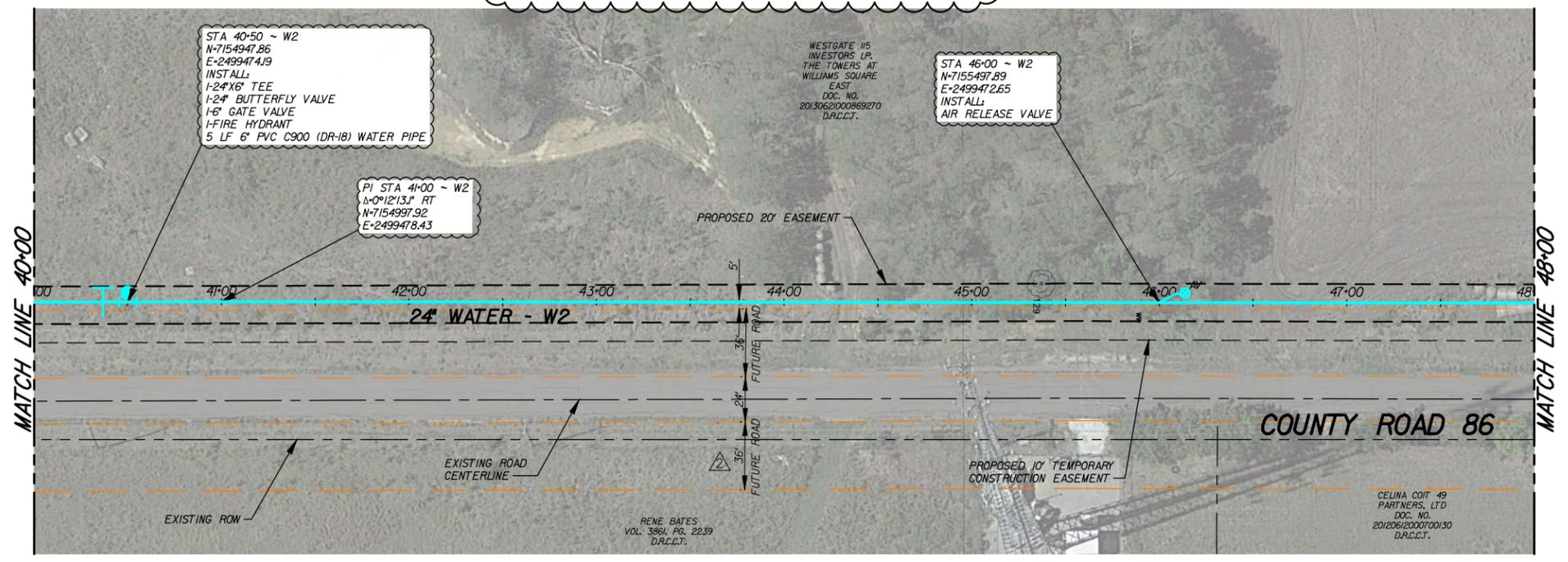
**WATER LINES W1 & W2  
SOUTHEAST SECTOR  
CITY OF CELINA, COLLIN COUNTY, TEXAS**

DESIGN	DRAWN	DATE	JOB NO.	SHEET NO.
JCI/JLH	JCI/JLH	AUGUST 2015	3551-14.141	<b>W-11</b>

JHLSCHER 08/26/2015 - 7:50AM J:\DWG-35\3551-14.141\DWG\C3020XX\3551-14.141W2.DWG

WATER LINES W1 & W2 SOUTHEAST SECTOR (W-201411-01)

INSTALL 800 LF OF 24" PVC WATER MAIN  
AWWA C905 CLASS 235 (DR-18)  
CLASS "B" EMBEDMENT

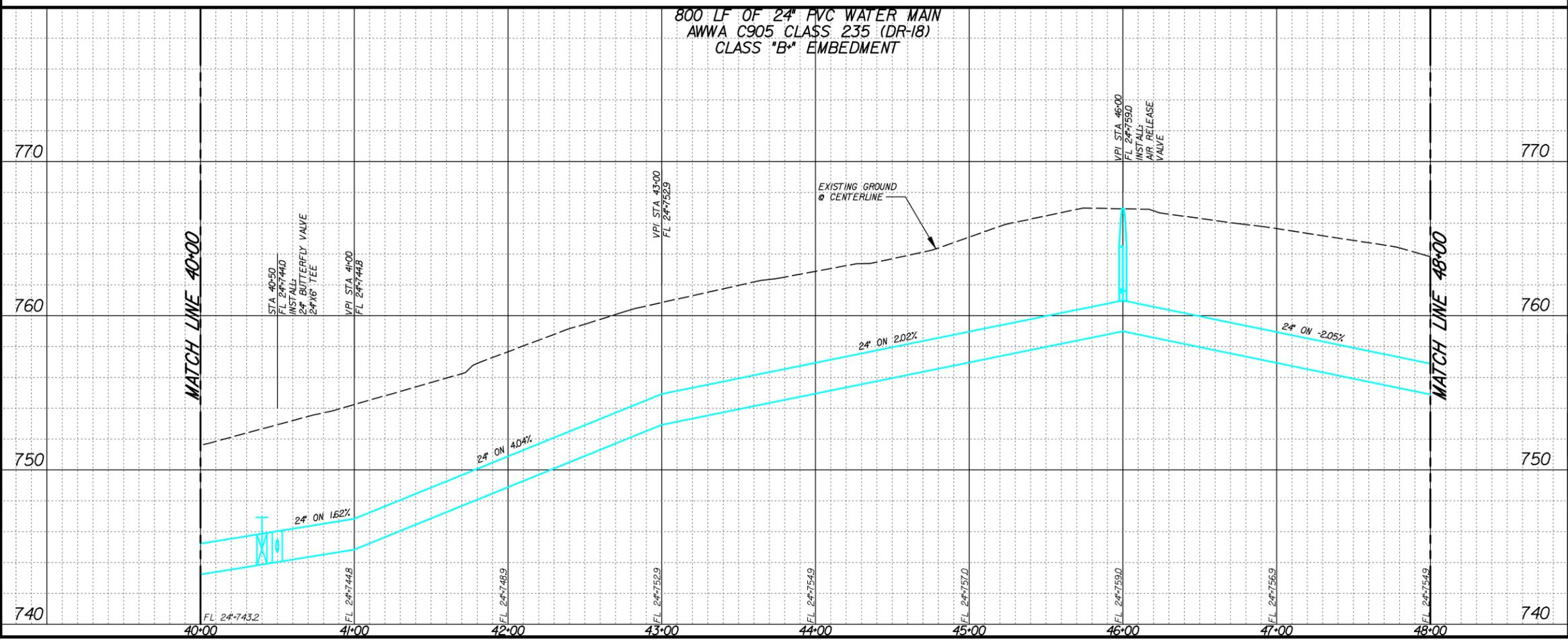


**LEGEND**

- PROPOSED WATER LINE
- - - FUTURE EDGE OF PAVEMENT

**NOTE:**

ALL ELEVATIONS ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ELEVATIONS SHOWN ON THESE PLANS.



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY CHRISTOPHER J. CHA, P.E. 112732 ON 08/25/2015. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

NO.	DATE	REVISION
1	07/27/2015	LABEL CORRECTION FROM 48' TO 36' FUTURE ROADWAY

**Pacheco Koch** 8350 N. CENTRAL EXPWY. SUITE 1000 DALLAS, TX 75206 972.235.3031 TX REG. ENGINEERING FIRM F-14439 TX REG. SURVEYING FIRM LS-101938-05

**PROPOSED 24" WATER MAIN - W2  
PLAN & PROFILE  
STA 40+00 TO 48+00**

**WATER LINES W1 & W2  
SOUTHEAST SECTOR**

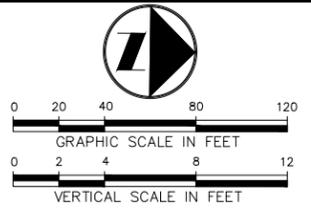
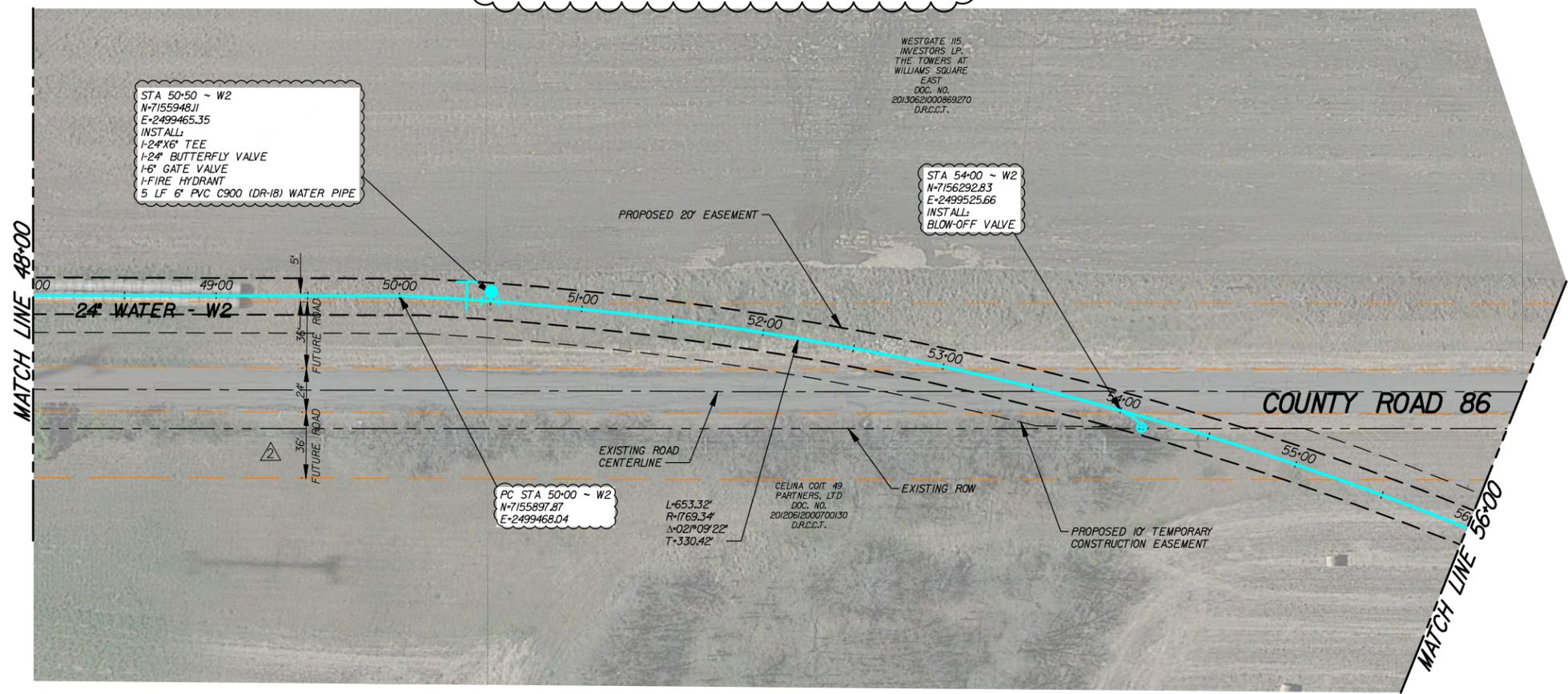
**CITY OF CELINA, COLLIN COUNTY, TEXAS**

DESIGN	DRAWN	DATE	JOB NO.	SHEET NO.
JCI/JLH	JCI/JLH	AUGUST 2015	3551-14.141	<b>W-12</b>

JHLSCHER 08/26/2015 7:50AM J:\DWG-35\3551-14.141\DWG\C302020X\3551-14.141W2.DWG

WATER LINES W1 & W2 SOUTHEAST SECTOR (W-201411-01)

INSTALL 800 LF OF 24" PVC WATER MAIN  
AWWA C905 CLASS 235 (DR-18)  
CLASS "B" EMBEDMENT

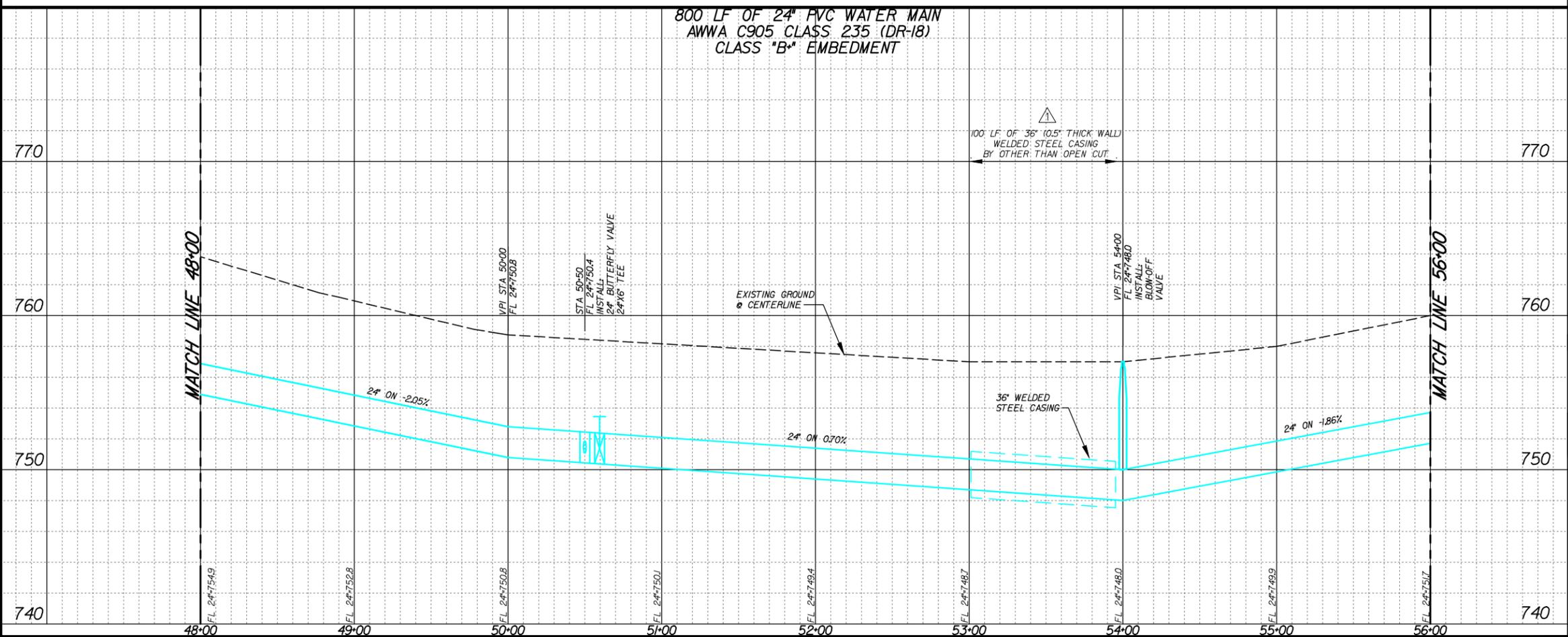


LEGEND

- PROPOSED WATER LINE
- FUTURE EDGE OF PAVEMENT

NOTE:

1. ALL ELEVATIONS ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ELEVATIONS SHOWN ON THESE PLANS.
2. EXISTING GROUND PROFILE TAKEN FROM USGS CONTOURS FROM STA 50+00 TO STA 68+00



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY CHRISTOPHER J. CHA, P.E. 112732 ON 08/25/2015. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

NO.	DATE	REVISION
△	07/27/2015	LABEL CORRECTION FROM 48' TO 36' FUTURE ROADWAY
△	05/19/2015	ADDENDUM #1

**Pacheco Koch** 8350 N. CENTRAL EXPWY. SUITE 1000  
DALLAS, TX 75206 972.235.3031  
TX REG. ENGINEERING FIRM F-14439  
TX REG. SURVEYING FIRM LS-101938-05

**PROPOSED 24" WATER MAIN - W2  
PLAN & PROFILE  
STA 48+00 TO 56+00**

**WATER LINES W1 & W2  
SOUTHEAST SECTOR**

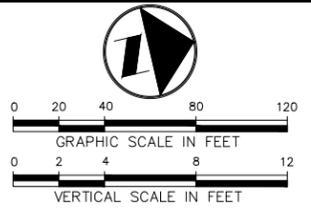
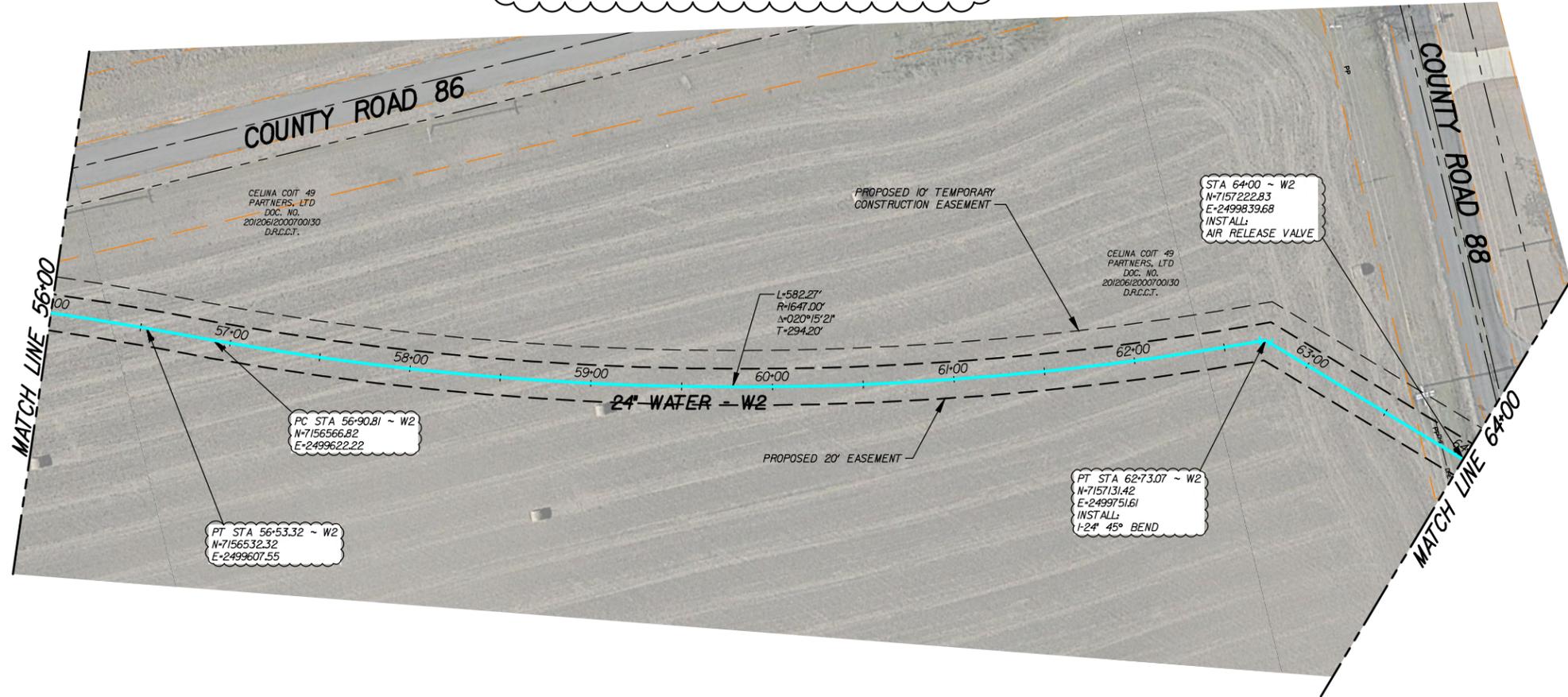
**CITY OF CELINA, COLLIN COUNTY, TEXAS**

DESIGN	DRAWN	DATE	JOB NO.	SHEET NO.
JCI/JLH	JCI/JLH	AUGUST 2015	3551-14.141	<b>W-13</b>

HILSCHER  
08/26/2015 - 7:51AM  
J:\DWG-35\3551-14.141\DWG\C30202XX\3551-14.141W2.DWG

WATER LINES W1 & W2 SOUTHEAST SECTOR (W-201411-01)

INSTALL 800 LF OF 24" PVC WATER MAIN  
 AWWA C905 CLASS 235 (DR-18)  
 CLASS "B" EMBEDMENT



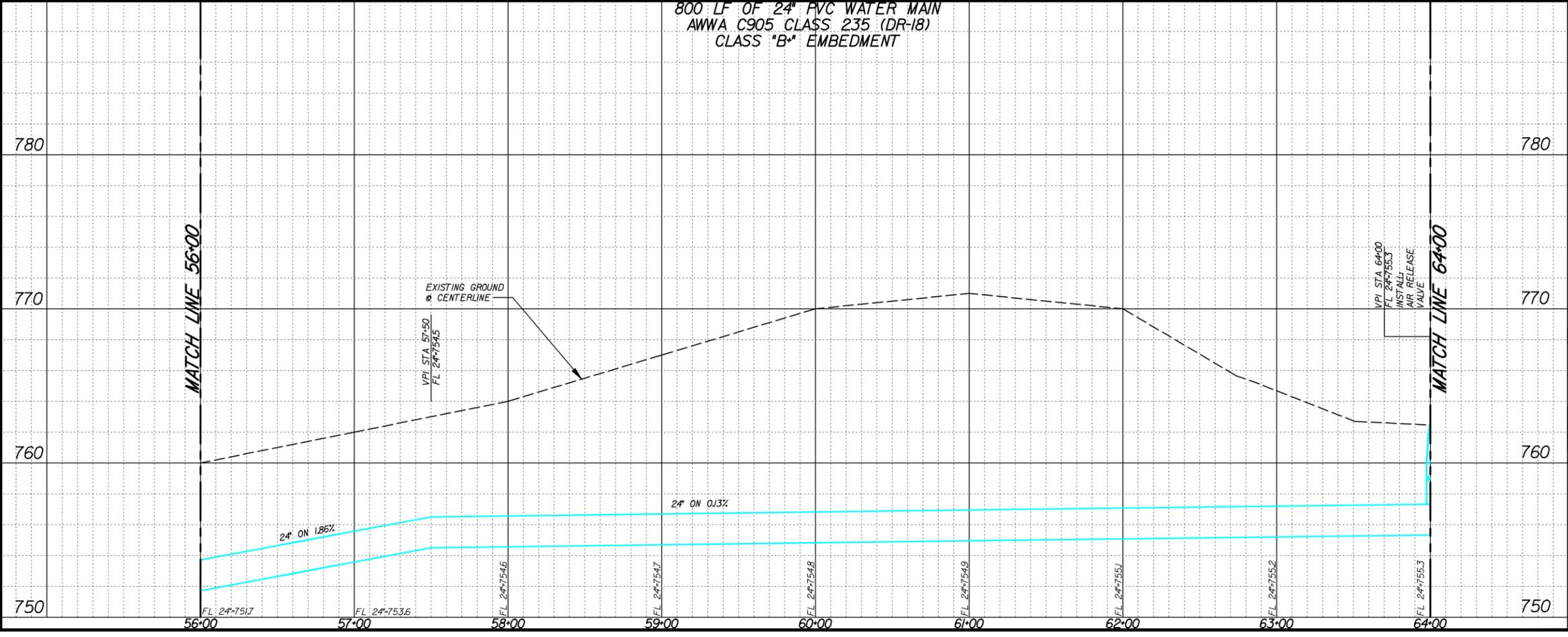
**LEGEND**

— PROPOSED WATER LINE  
 - - - FUTURE EDGE OF PAVEMENT

**NOTE:**

1. ALL ELEVATIONS ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ELEVATIONS SHOWN ON THESE PLANS.

2. EXISTING GROUND PROFILE TAKEN FROM USGS CONTOURS FROM STA 50+00 TO STA 68+00



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY CHRISTOPHER J. CHA, P.E. 112732 ON 08/25/2015. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

NO.	DATE	REVISION

**Pacheco Koch** 8350 N. CENTRAL EXPWY. SUITE 1000  
 DALLAS, TX 75206 972.235.3031  
 TX REG. ENGINEERING FIRM F-14439  
 TX REG. SURVEYING FIRM LS-101938-05

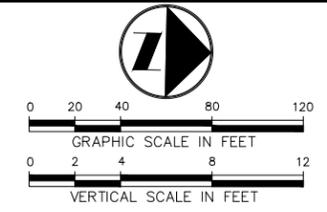
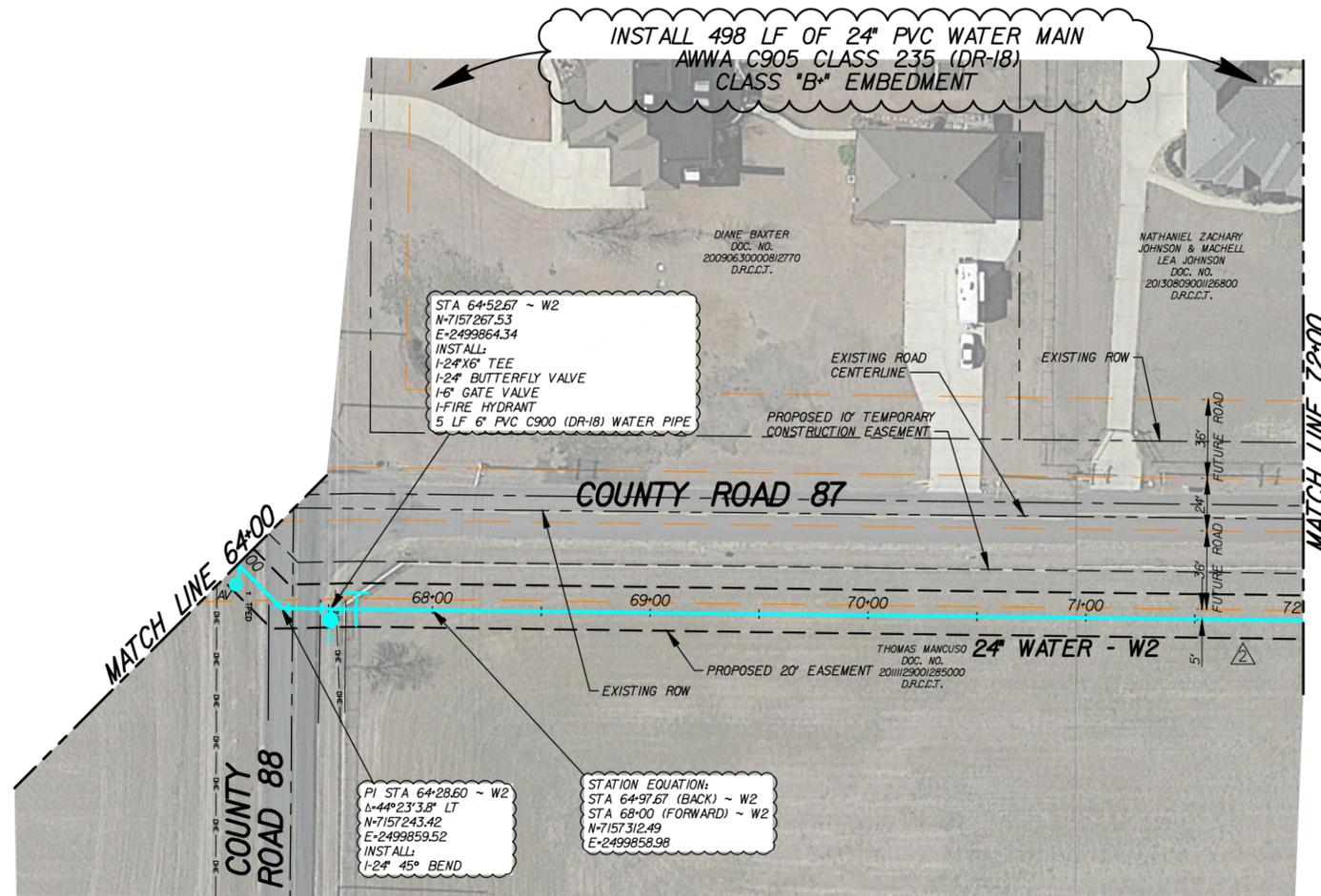
**PROPOSED 24" WATER MAIN - W2  
 PLAN & PROFILE  
 STA 56+00 TO 64+00**

**WATER LINES W1 & W2  
 SOUTHEAST SECTOR  
 CITY OF CELINA, COLLIN COUNTY, TEXAS**

DESIGN	DRAWN	DATE	JOB NO.	SHEET NO.
JCI/JLH	JCI/JLH	AUGUST 2015	3551-14.141	<b>W-14</b>

JHLSCHER  
 08/26/2015 - 7:51AM  
 J:\DWG-35\3551-14.141\DWG\C302020XX\3551-14.141W2.DWG

WATER LINES W1 & W2 SOUTHEAST SECTOR (W-201411-01)

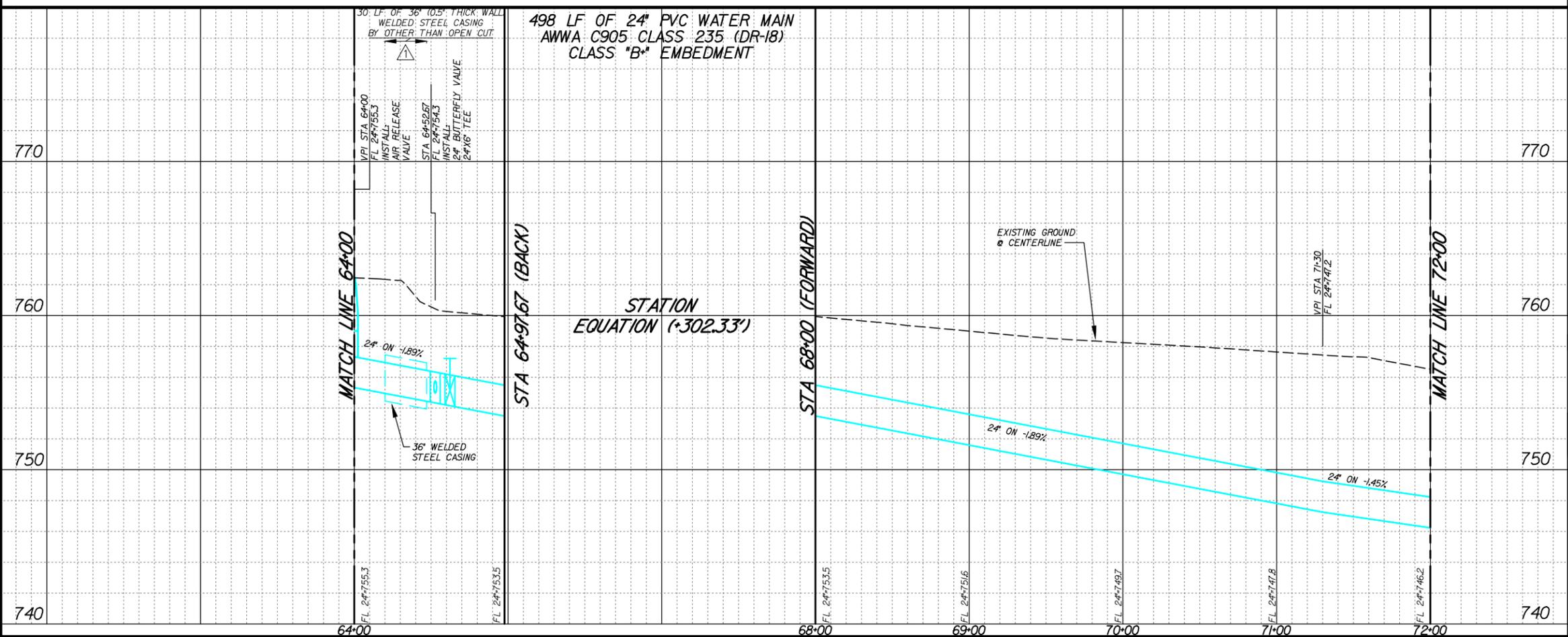


**LEGEND**

<span style="color: cyan;">—</span>	PROPOSED WATER LINE
<span style="color: orange;">---</span>	FUTURE EDGE OF PAVEMENT

**NOTE:**

1. ALL ELEVATIONS ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ELEVATIONS SHOWN ON THESE PLANS.
2. EXISTING GROUND PROFILE TAKEN FROM USGS CONTOURS FROM STA 50+00 TO STA 68+00



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY CHRISTOPHER J. CHA, P.E. 112732 ON 08/25/2015. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

NO.	DATE	REVISION
△	07/27/2015	LABEL CORRECTION FROM 48" TO 36" FUTURE ROADWAY
△	05/19/2015	ADDENDUM #1

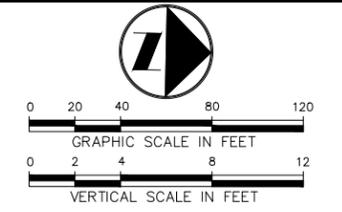
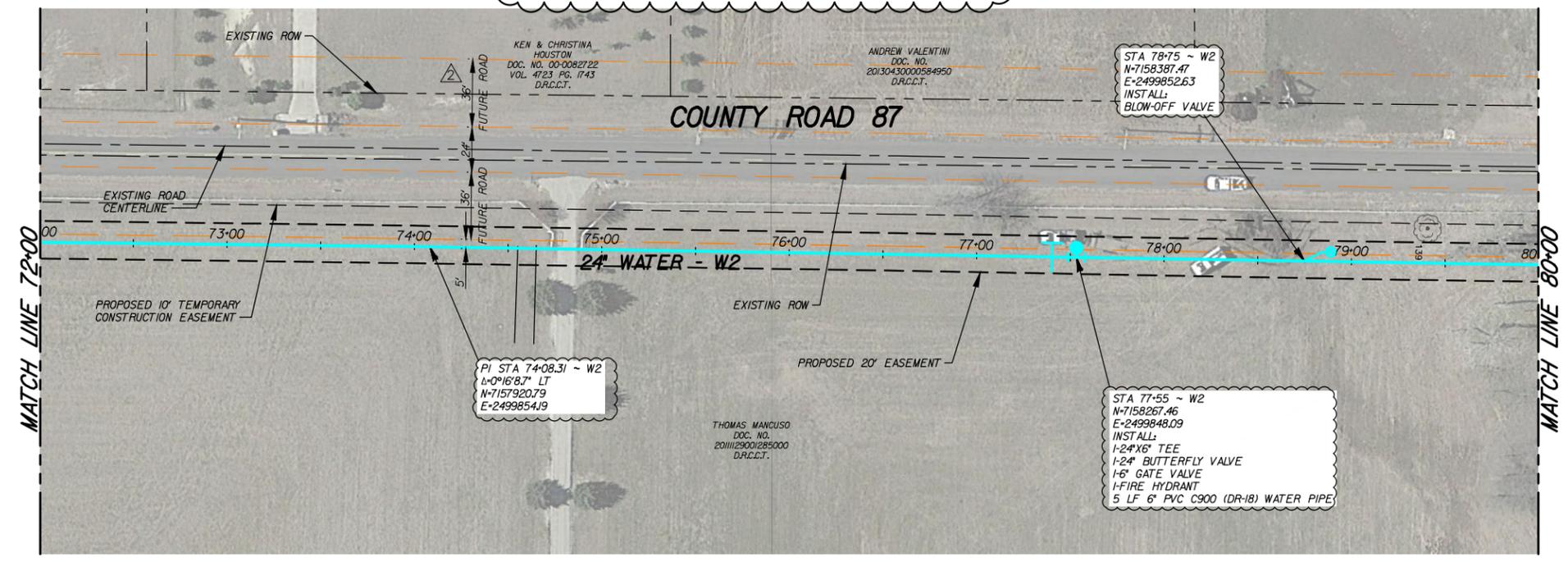
**Pacheco Koch** 8350 N. CENTRAL EXPWY. SUITE 1000  
DALLAS, TX 75206 972.235.3031  
TX REG. ENGINEERING FIRM F-14439  
TX REG. SURVEYING FIRM LS-101938-05

<b>PROPOSED 24" WATER MAIN - W2 PLAN &amp; PROFILE STA 64+00 TO 72+00</b>				
<b>WATER LINES W1 &amp; W2 SOUTHEAST SECTOR</b>				
<b>CITY OF CELINA, COLLIN COUNTY, TEXAS</b>				
DESIGN	DRAWN	DATE	JOB NO.	SHEET NO.
JCI/JLH	JCI/JLH	AUGUST 2015	3551-14.141	<b>W-15</b>

JHLSCHER 08/26/2015 7:51AM J:\DWG-35\3551-14.141\DWG\C3020XX\3551-14.141W2.DWG

WATER LINES W1 & W2 SOUTHEAST SECTOR (W-201411-01)

INSTALL 800 LF OF 24" PVC WATER MAIN  
AWWA C905 CLASS 235 (DR-18)  
CLASS "B" EMBEDMENT



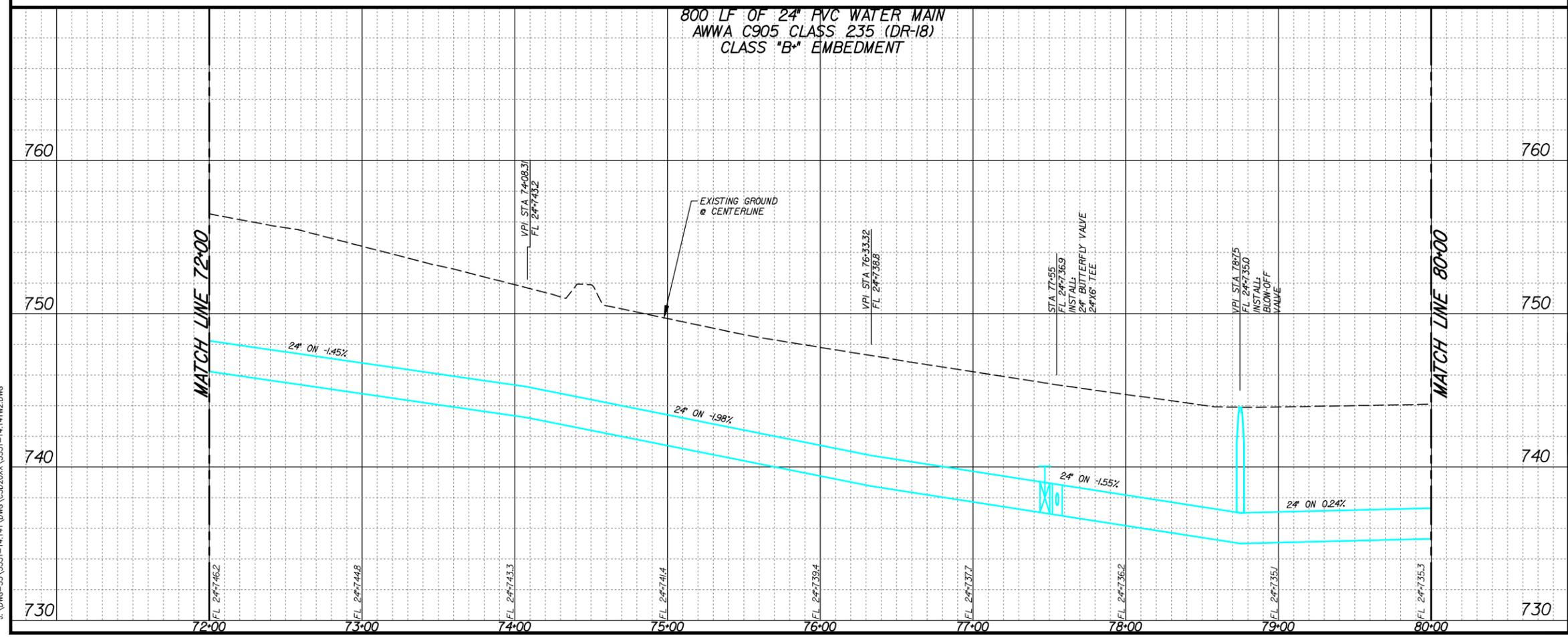
**LEGEND**

— PROPOSED WATER LINE

- - - FUTURE EDGE OF PAVEMENT

**NOTE:**

ALL ELEVATIONS ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ELEVATIONS SHOWN ON THESE PLANS.



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY CHRISTOPHER J. CHA, P.E. 112732 ON 08/25/2015. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

NO.	DATE	REVISION
1	07/27/2015	LABEL CORRECTION FROM 48" TO 36" FUTURE ROADWAY

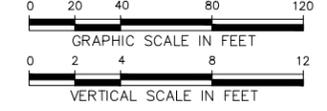
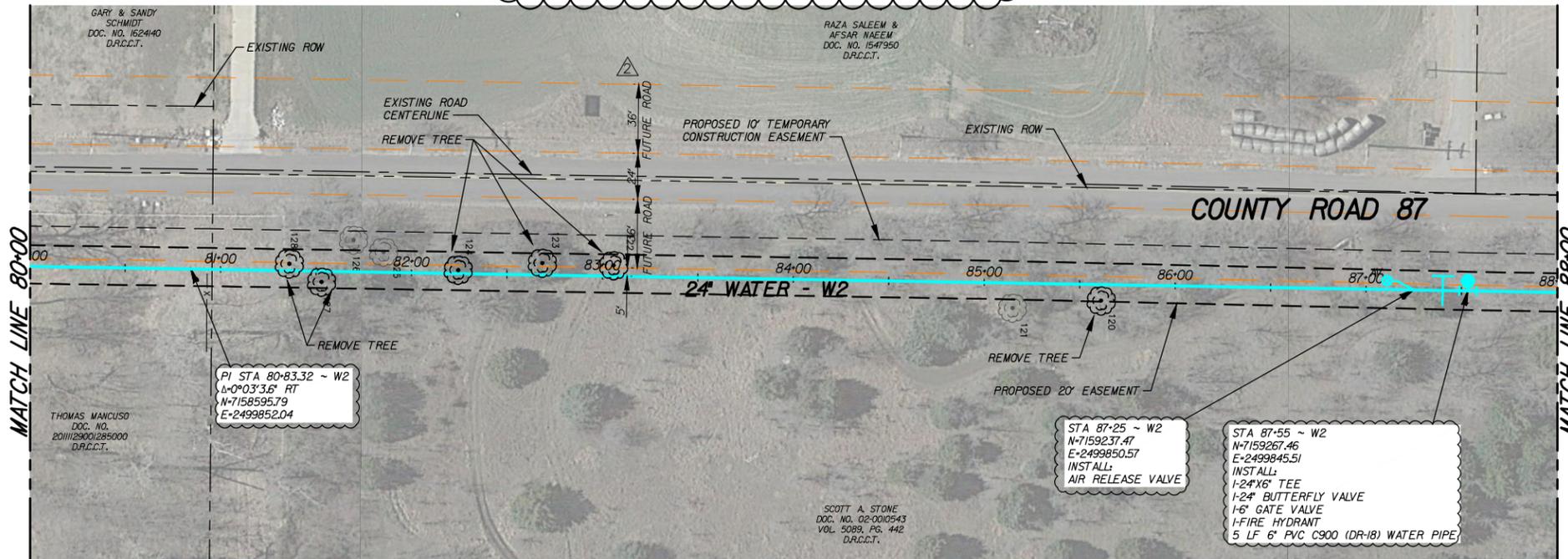
**Pacheco Koch** 8350 N. CENTRAL EXPWY. SUITE 1000  
DALLAS, TX 75206 972.235.3031  
TX REG. ENGINEERING FIRM F-14439  
TX REG. SURVEYING FIRM LS-101938-05

<b>PROPOSED 24" WATER MAIN - W2 PLAN &amp; PROFILE STA 72+00 TO 80+00</b>				
<b>WATER LINES W1 &amp; W2 SOUTHEAST SECTOR</b>				
<b>CITY OF CELINA, COLLIN COUNTY, TEXAS</b>				
DESIGN	DRAWN	DATE	JOB NO.	SHEET NO.
JCI/JLH	JCI/JLH	AUGUST 2015	3551-14.141	<b>W-16</b>

JHLSCHER  
08/26/2015 - 7:51AM  
J:\DWG-35\3551-14.141\DWG\C3020XX\3551-14.141W2.DWG

WATER LINES W1 & W2 SOUTHEAST SECTOR (W-201411-01)

INSTALL 800 LF OF 24" PVC WATER MAIN  
AWWA C905 CLASS 235 (DR-18)  
CLASS "B" EMBEDMENT



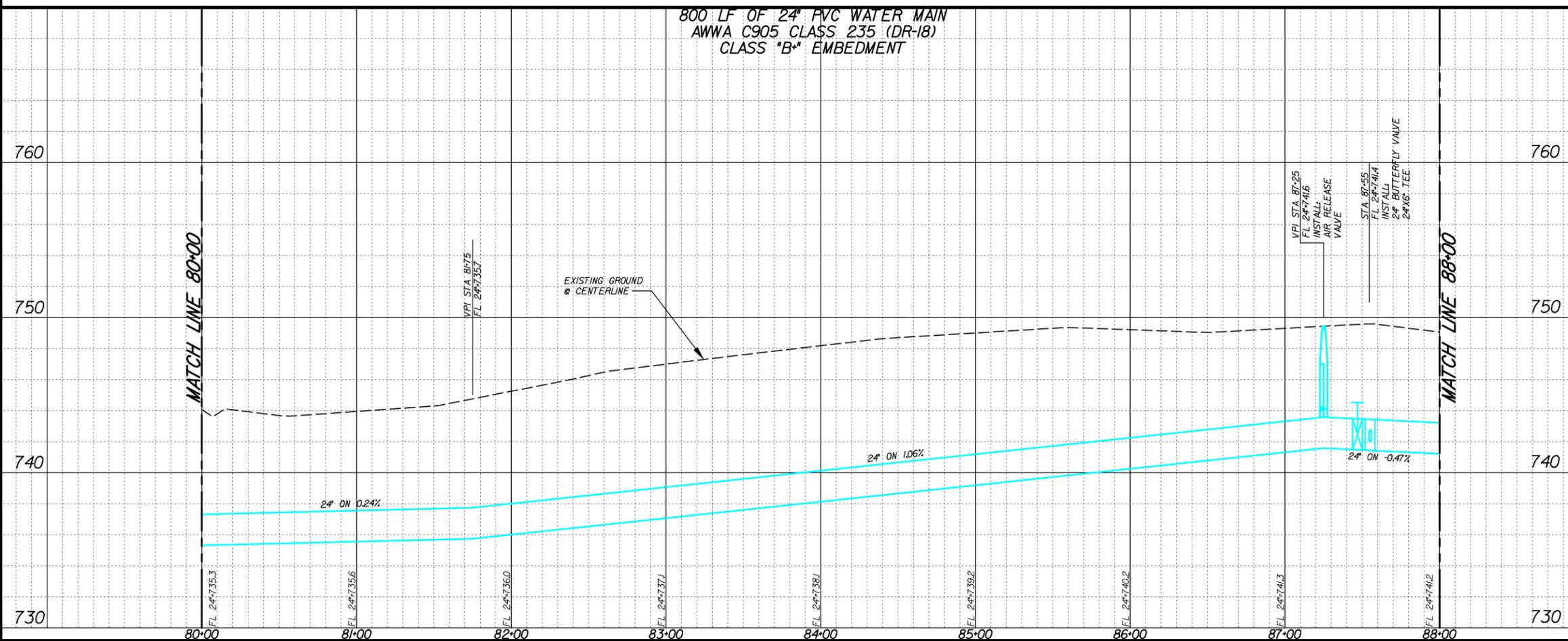
LEGEND

- PROPOSED WATER LINE
- - - FUTURE EDGE OF PAVEMENT

NOTE:

ALL ELEVATIONS ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ELEVATIONS SHOWN ON THESE PLANS.

800 LF OF 24" PVC WATER MAIN  
AWWA C905 CLASS 235 (DR-18)  
CLASS "B" EMBEDMENT



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY CHRISTOPHER J. CHA, P.E. 112732 ON 08/25/2015. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

NO.	DATE	REVISION
1	07/27/2015	LABEL CORRECTION FROM 48" TO 36" FUTURE ROADWAY

**Pacheco Koch**  
8350 N. CENTRAL EXPY. SUITE 1000  
DALLAS, TX 75206 972.235.3031  
TX REG. ENGINEERING FIRM F-14439  
TX REG. SURVEYING FIRM LS-101938-05

**PROPOSED 24" WATER MAIN - W2  
PLAN & PROFILE  
STA 80+00 TO 88+00**

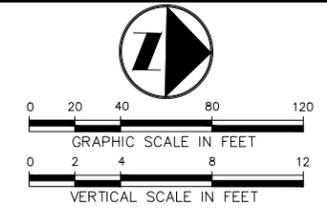
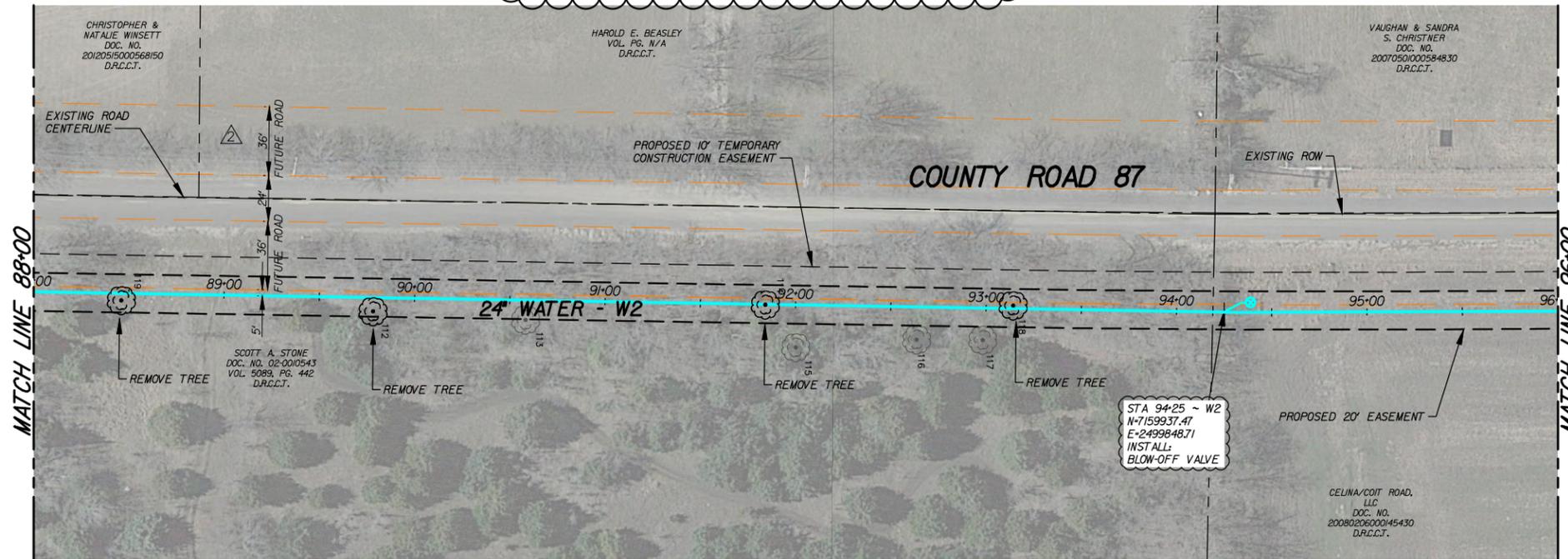
**WATER LINES W1 & W2  
SOUTHEAST SECTOR  
CITY OF CELINA, COLLIN COUNTY, TEXAS**

DESIGN	DRAWN	DATE	JOB NO.	SHEET NO.
JCI/JLH	JCI/JLH	AUGUST 2015	3551-14.141	<b>W-17</b>

JLH/SCHER  
08/26/2015 - 7:51AM  
J:\DWG-35\3551-14.141\DWG\C3020XX\3551-14.141W2.DWG

WATER LINES W1 & W2 SOUTHEAST SECTOR (W-201411-01)

INSTALL 800 LF OF 24" PVC WATER MAIN  
AWWA C905 CLASS 235 (DR-18)  
CLASS "B" EMBEDMENT



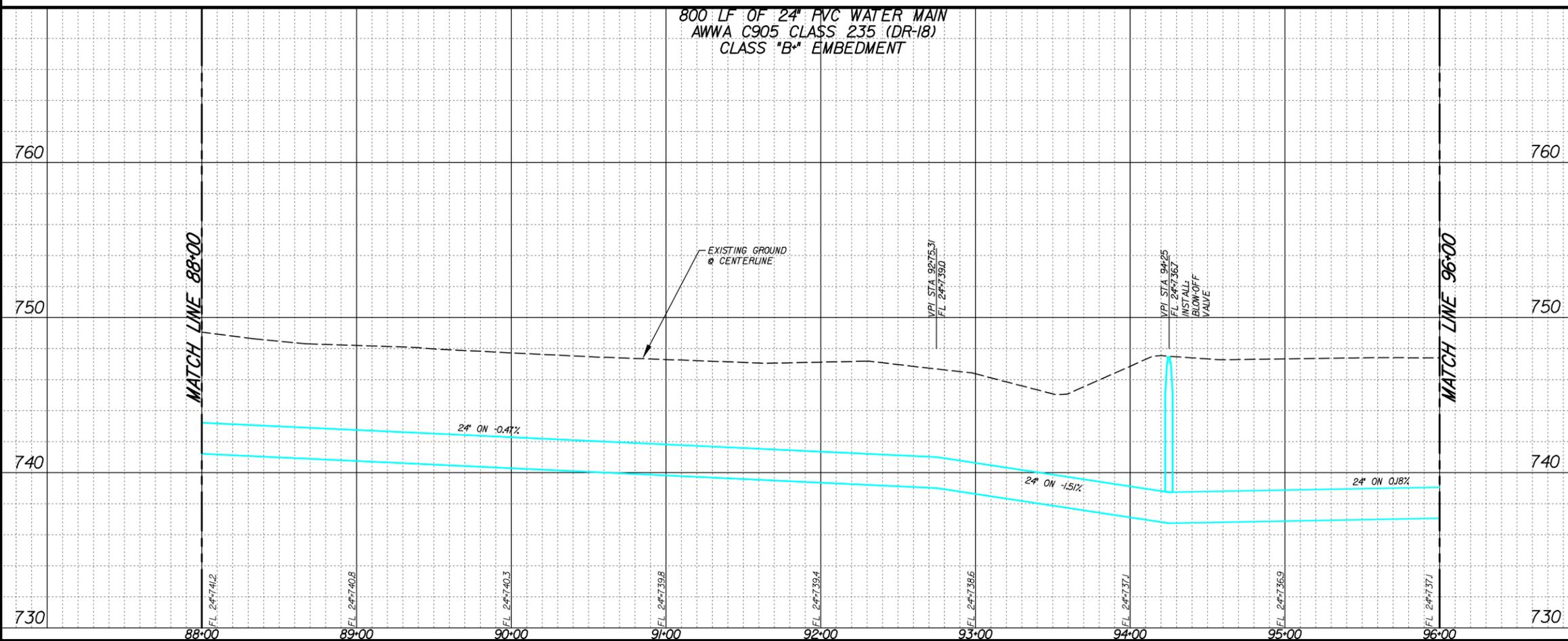
LEGEND

- PROPOSED WATER LINE
- - - FUTURE EDGE OF PAVEMENT

NOTE:

ALL ELEVATIONS ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ELEVATIONS SHOWN ON THESE PLANS.

800 LF OF 24" PVC WATER MAIN  
AWWA C905 CLASS 235 (DR-18)  
CLASS "B" EMBEDMENT



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY CHRISTOPHER J. CHA, P.E. 112732 ON 08/25/2015. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

NO.	DATE	REVISION
1	07/27/2015	LABEL CORRECTION FROM 48" TO 36" FUTURE ROADWAY

**Pacheco Koch**  
8350 N. CENTRAL EXPY. SUITE 1000  
DALLAS, TX 75206 972.235.3031  
TX REG. ENGINEERING FIRM F-14439  
TX REG. SURVEYING FIRM LS-101938-05

**PROPOSED 24" WATER MAIN - W2  
PLAN & PROFILE  
STA 88+00 TO 96+00**

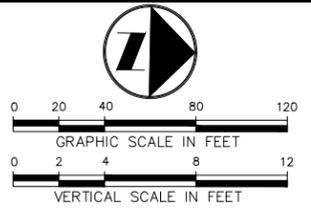
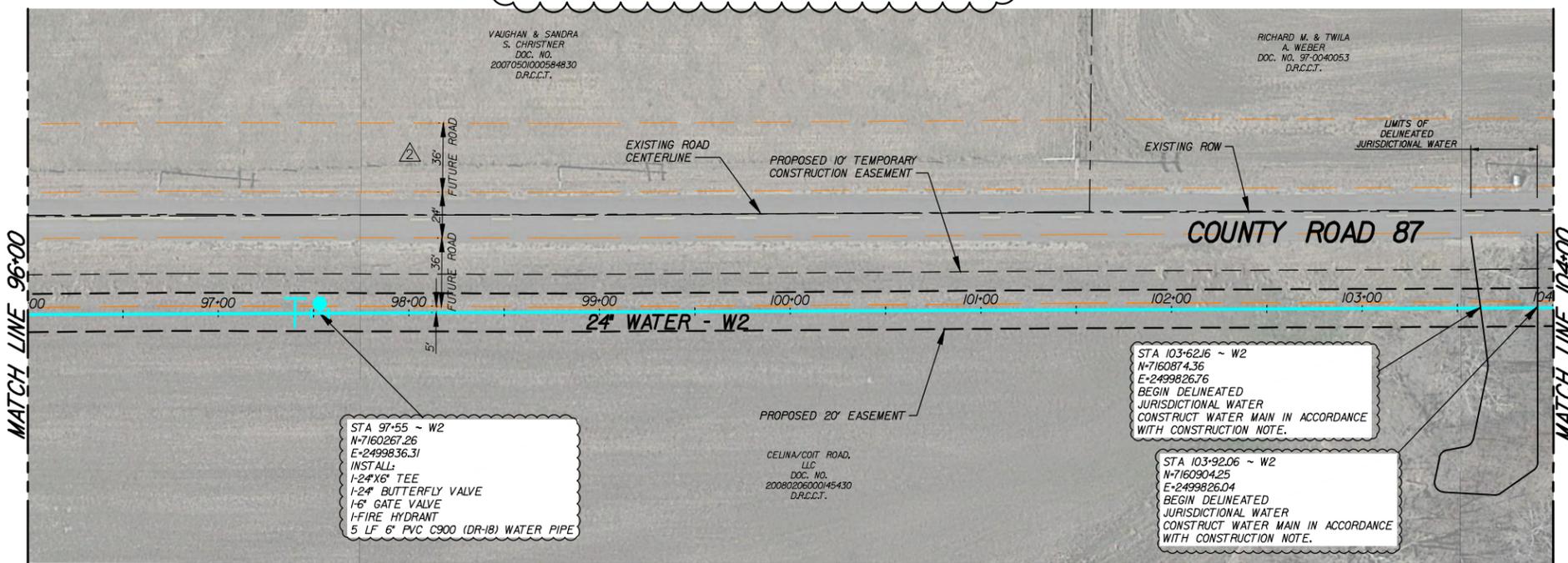
**WATER LINES W1 & W2  
SOUTHEAST SECTOR  
CITY OF CELINA, COLLIN COUNTY, TEXAS**

DESIGN	DRAWN	DATE	JOB NO.	SHEET NO.
JCI/JLH	JCI/JLH	AUGUST 2015	3551-14.141	<b>W-18</b>

JHLSCHER  
08/26/2015 - 7:51AM  
J:\DWG-35\3551-14.141\DWG\C3020XX\3551-14.141W2.DWG

WATER LINES W1 & W2 SOUTHEAST SECTOR (W-201411-01)

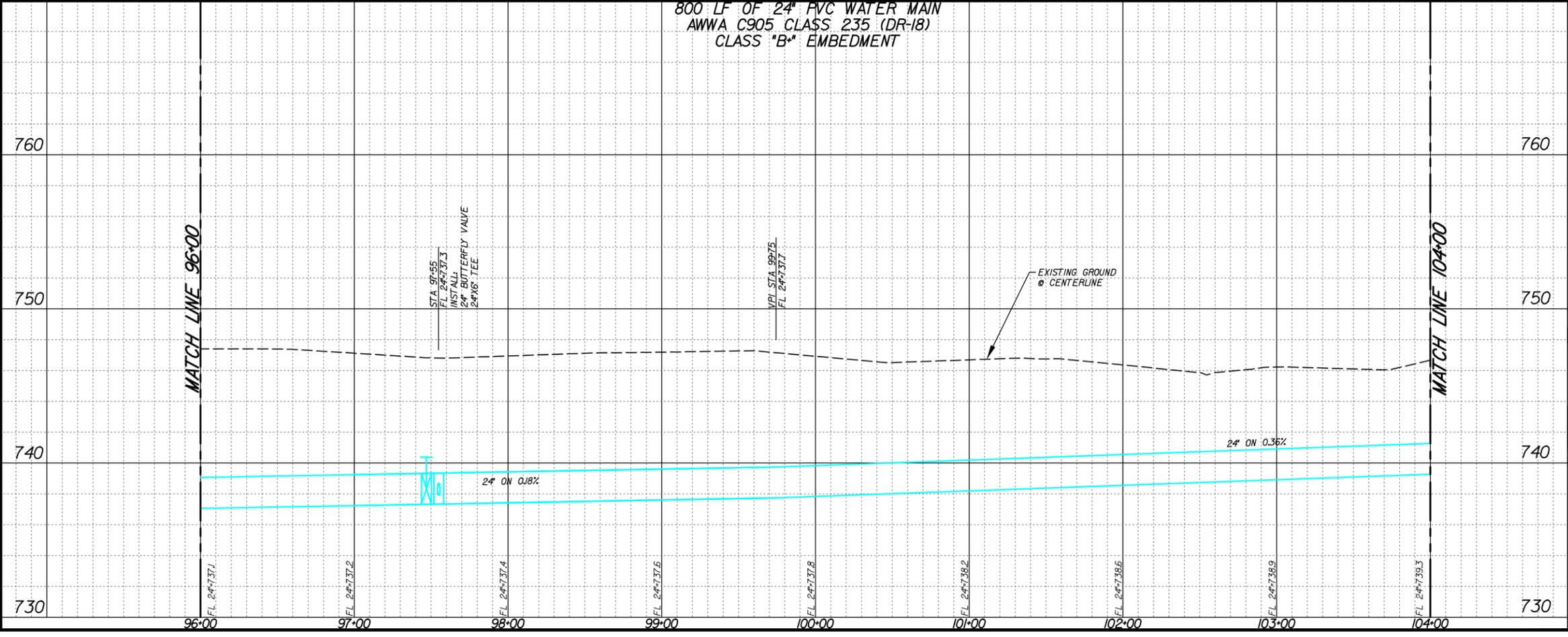
INSTALL 800 LF OF 24" PVC WATER MAIN  
AWWA C905 CLASS 235 (DR-18)  
CLASS "B" EMBEDMENT



**LEGEND**  
 — PROPOSED WATER LINE  
 - - - FUTURE EDGE OF PAVEMENT

**NOTE:**  
 ALL ELEVATIONS ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ELEVATIONS SHOWN ON THESE PLANS.

**CONSTRUCTION NOTE:**  
 DELINEATED JURISDICTIONAL WATER, AT THE LOCATION SHOWN, WATER MAIN SHALL BE CONSTRUCTED BY ONE OF THE FOLLOWING METHODS:  
 1. OPEN-CUT DRY  
 2. DAM AND PUMP-AROUND  
 3. BY OTHER THAN OPEN CUT (HDD, BORE, ETC.)  
 WORK SHALL BE PAID FOR UNDER TEMPORARY EROSION, SEDIMENTATION AND WATER POLLUTION PREVENTION (SWPPP) AND 24" PVC C-905 CLASS 235, DR-18 WATER MAIN PIPE. NO SEPARATE PAY WILL BE MADE FOR BY OTHER THAN OPEN CUT.



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY CHRISTOPHER J. CHA, P.E. 112732 ON 08/25/2015. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

NO.	DATE	REVISION
1	07/27/2015	LABEL CORRECTION FROM 48" TO 36" FUTURE ROADWAY

**Pacheco Koch**  
 8350 N. CENTRAL EXPWY. SUITE 1000  
 DALLAS, TX 75206 972.235.3031  
 TX REG. ENGINEERING FIRM F-14439  
 TX REG. SURVEYING FIRM LS-101938-05

**PROPOSED 24" WATER MAIN - W2  
 PLAN & PROFILE  
 STA 96+00 TO 104+00**

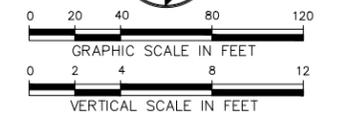
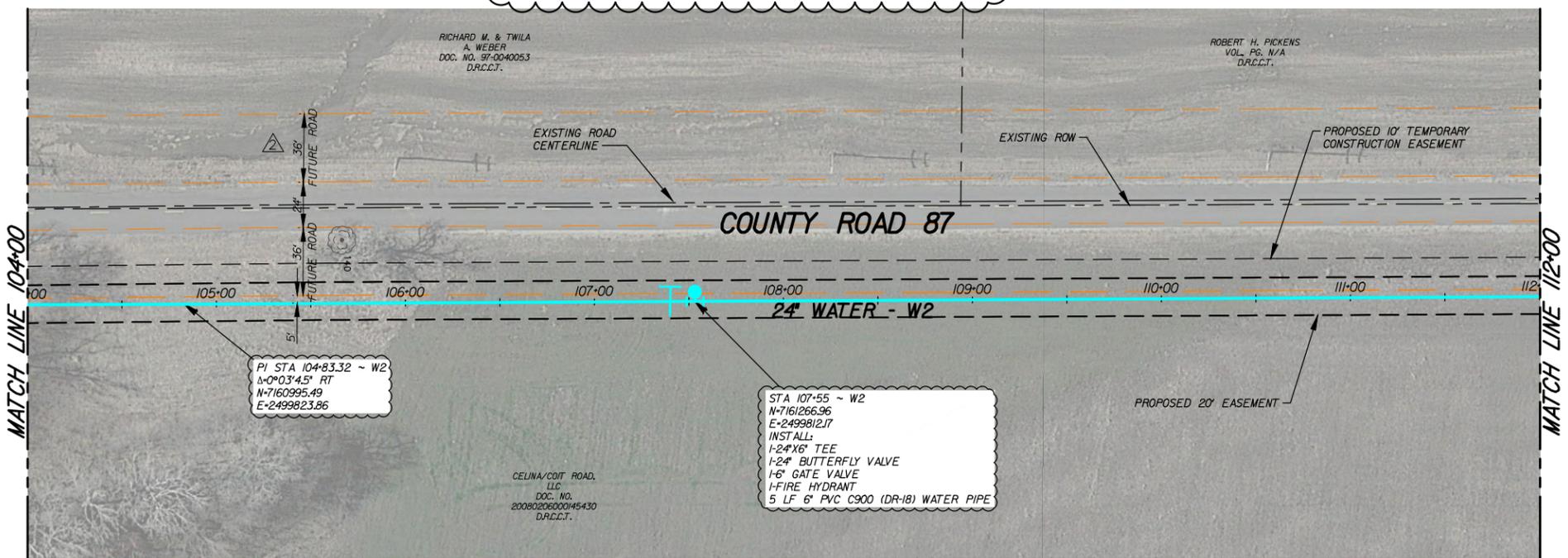
**WATER LINES W1 & W2  
 SOUTHEAST SECTOR  
 CITY OF CELINA, COLLIN COUNTY, TEXAS**

DESIGN	DRAWN	DATE	JOB NO.	SHEET NO.
JCI/JLH	JCI/JLH	AUGUST 2015	3551-14.141	<b>W-19</b>

JHLSCHER  
 08/26/2015 - 7:51AM  
 J:\DWG-35\3551-14.141\DWG\C3020XX\3551-14.141W2.DWG

WATER LINES W1 & W2 SOUTHEAST SECTOR (W-201411-01)

INSTALL 800 LF OF 24" PVC WATER MAIN  
AWWA C905 CLASS 235 (DR-18)  
CLASS "B" EMBEDMENT

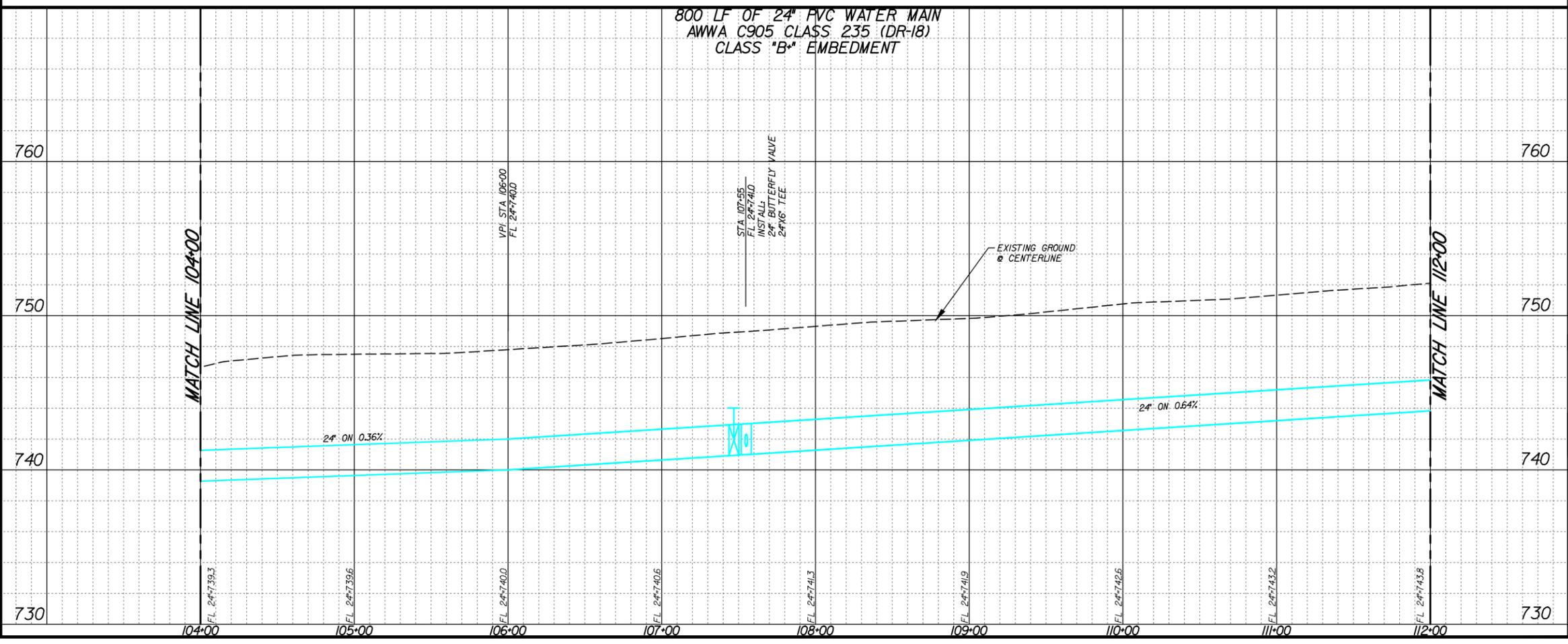


LEGEND

- PROPOSED WATER LINE
- - - FUTURE EDGE OF PAVEMENT

NOTE:

ALL ELEVATIONS ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ELEVATIONS SHOWN ON THESE PLANS.



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY CHRISTOPHER J. CHA, P.E. 112732 ON 08/25/2015. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

NO.	DATE	REVISION
1	07/27/2015	LABEL CORRECTION FROM 48" TO 36" FUTURE ROADWAY

**Pacheco Koch**  
8350 N. CENTRAL EXPY. SUITE 1000  
DALLAS, TX 75206 972.235.3031  
TX REG. ENGINEERING FIRM F-14439  
TX REG. SURVEYING FIRM LS-101938-05

**PROPOSED 24" WATER MAIN - W2  
PLAN & PROFILE  
STA 104+00 TO 112+00**

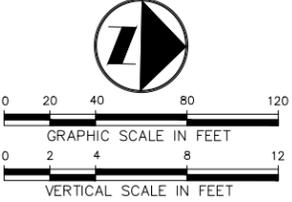
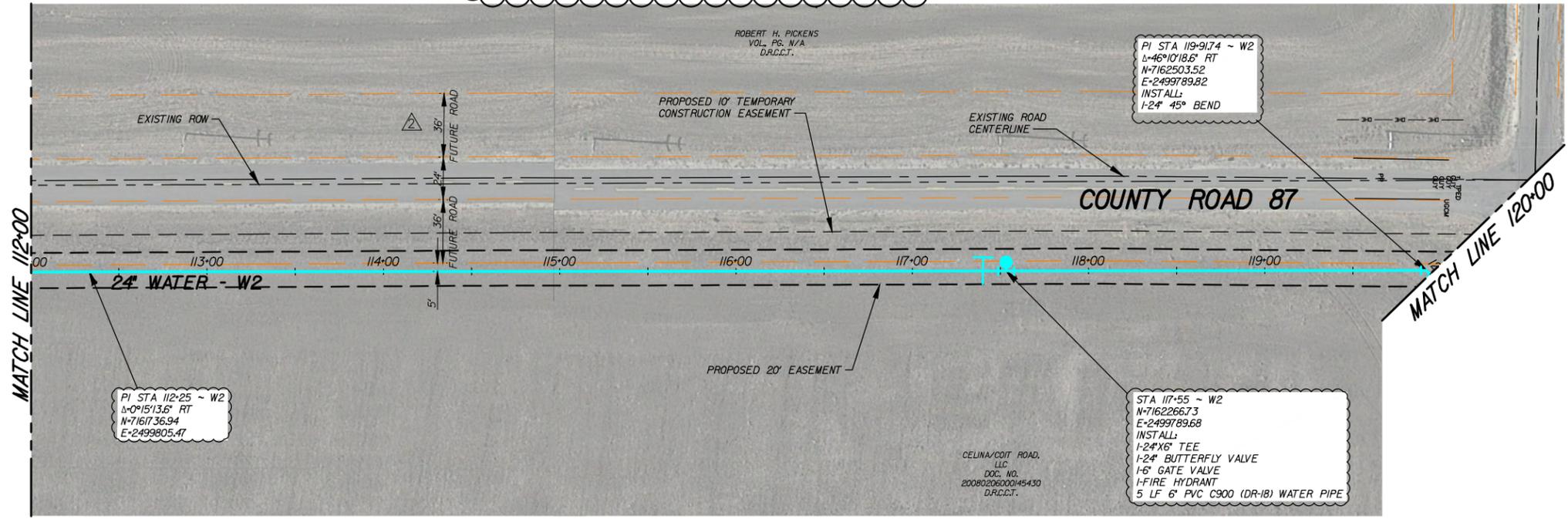
**WATER LINES W1 & W2  
SOUTHEAST SECTOR  
CITY OF CELINA, COLLIN COUNTY, TEXAS**

DESIGN	DRAWN	DATE	JOB NO.	SHEET NO.
JCI/JLH	JCI/JLH	AUGUST 2015	3551-14.141	<b>W-20</b>

JHLSCHER 08/26/2015 7:52AM J:\DWG-35\3551-14.141\DWG\C30202XX\3551-14.141W2.DWG

WATER LINES W1 & W2 SOUTHEAST SECTOR (W-201411-01)

INSTALL 800 LF OF 24" PVC WATER MAIN  
AWWA C905 CLASS 235 (DR-18)  
CLASS "B" EMBEDMENT

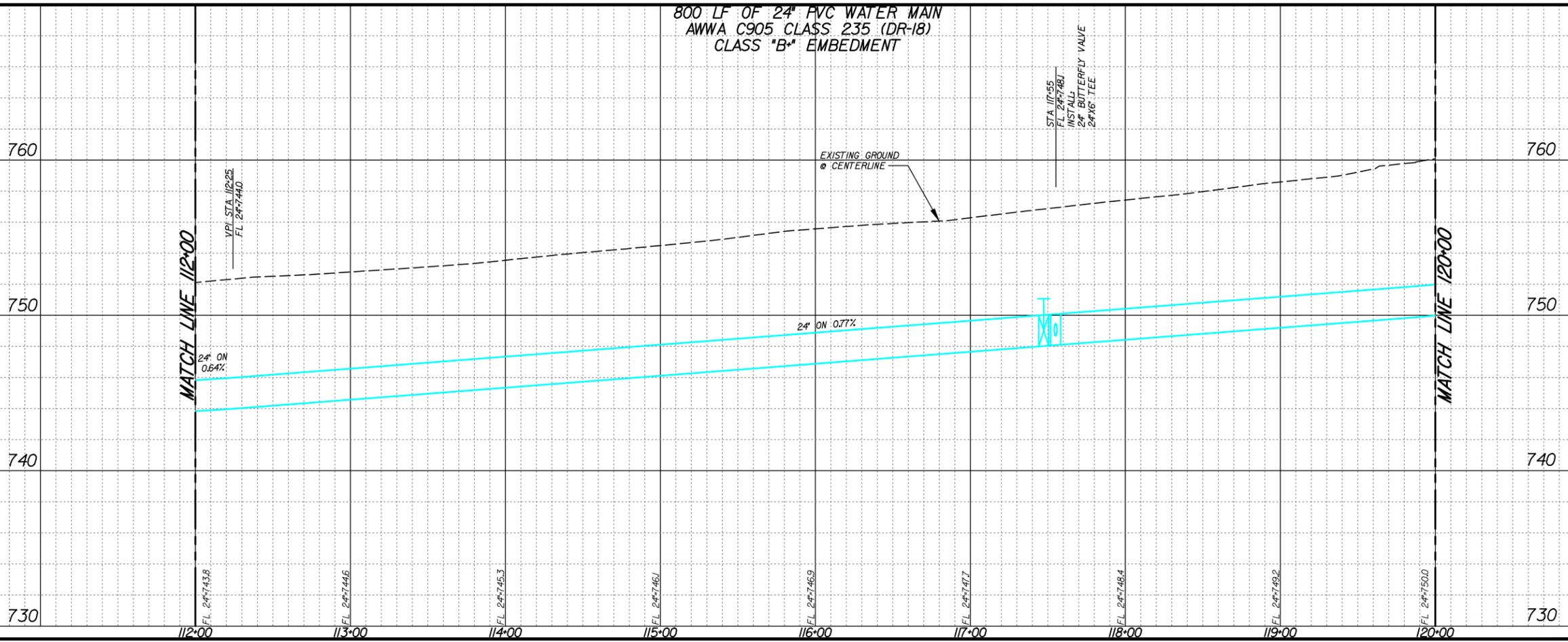


**LEGEND**

— PROPOSED WATER LINE  
- - - FUTURE EDGE OF PAVEMENT

**NOTE:**

ALL ELEVATIONS ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ELEVATIONS SHOWN ON THESE PLANS.



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY CHRISTOPHER J. CHA, P.E. 112732 ON 08/25/2015. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

NO.	DATE	REVISION
1	07/27/2015	LABEL CORRECTION FROM 48" TO 36" FUTURE ROADWAY

**Pacheco Koch** 8350 N. CENTRAL EXPWY. SUITE 1000  
DALLAS, TX 75206 972.235.3031  
TX REG. ENGINEERING FIRM F-14439  
TX REG. SURVEYING FIRM LS-101938-05

**PROPOSED 24" WATER MAIN - W2  
PLAN & PROFILE  
STA 112+00 TO 120+00**

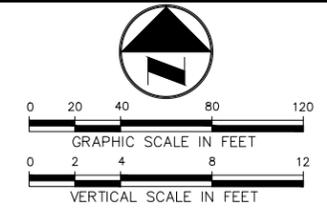
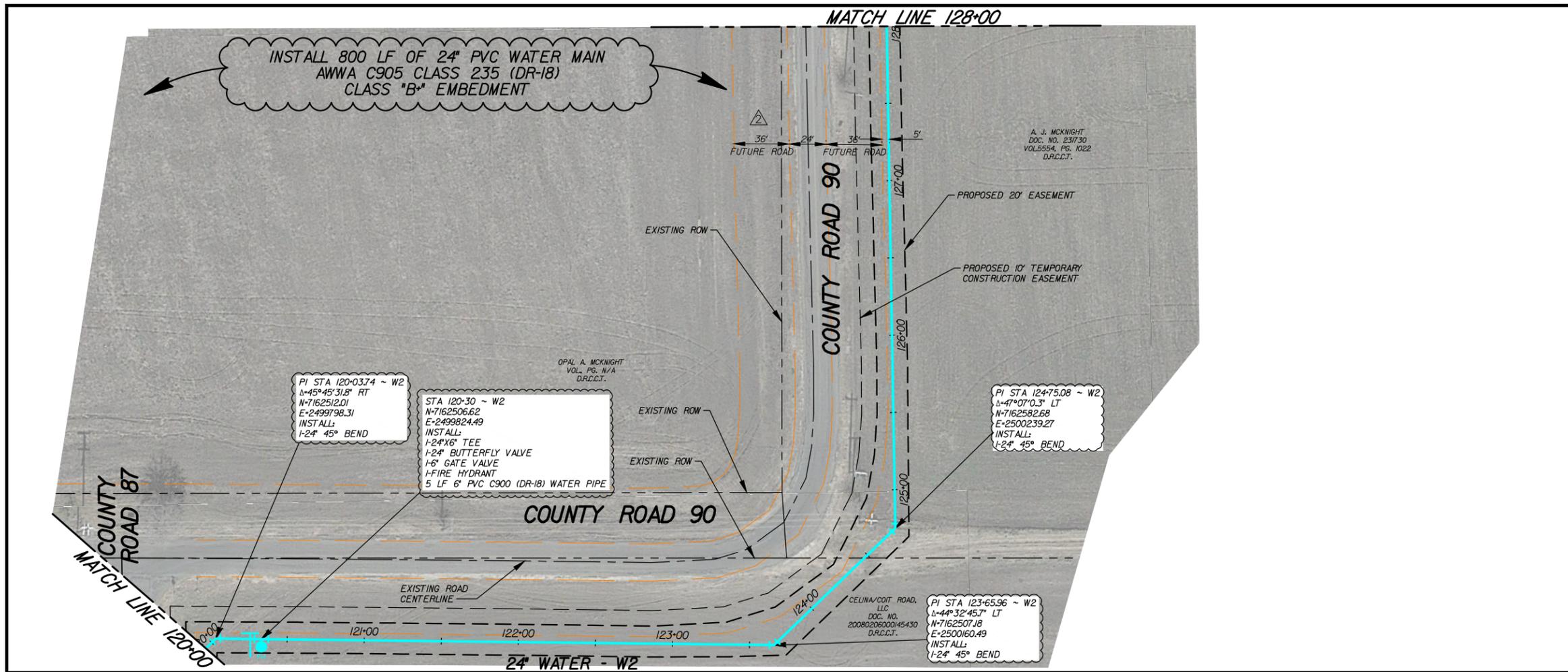
**WATER LINES W1 & W2  
SOUTHEAST SECTOR**

**CITY OF CELINA, COLLIN COUNTY, TEXAS**

DESIGN	DRAWN	DATE	JOB NO.	SHEET NO.
JCI/JLH	JCI/JLH	AUGUST 2015	3551-14.141	<b>W-21</b>

JHLSCHER 08/26/2015 7:52AM J:\DWG-35\3551-14.141\DWG\C302020X\3551-14.141W2.DWG

WATER LINES W1 & W2 SOUTHEAST SECTOR (W-201411-01)



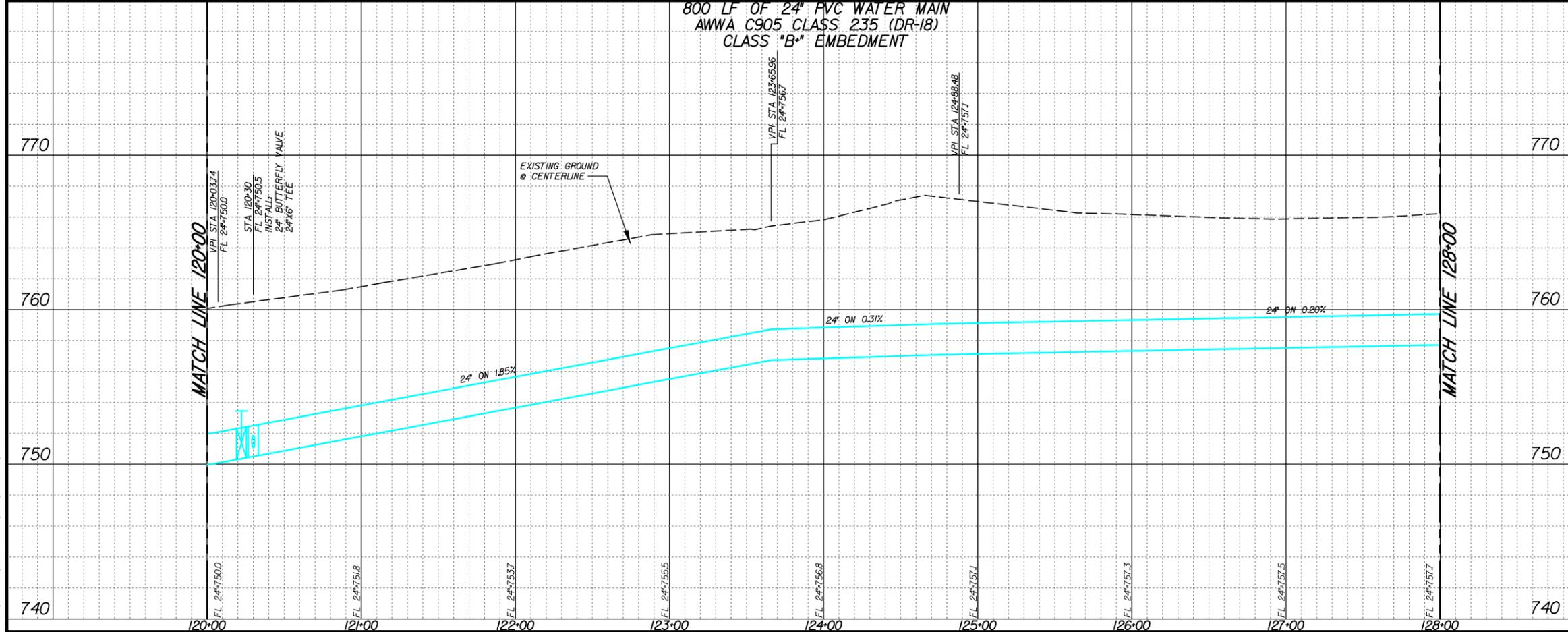
**LEGEND**

— PROPOSED WATER LINE

- - - FUTURE EDGE OF PAVEMENT

**NOTE:**

ALL ELEVATIONS ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ELEVATIONS SHOWN ON THESE PLANS.



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY CHRISTOPHER J. CHA, P.E. 112732 ON 08/25/2015. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

NO.	DATE	REVISION
1	07/27/2015	LABEL CORRECTION FROM 48" TO 36" FUTURE ROADWAY

**Pacheco Koch**  
8350 N. CENTRAL EXPWY. SUITE 1000  
DALLAS, TX 75206 972.235.3031  
TX REG. ENGINEERING FIRM F-14439  
TX REG. SURVEYING FIRM LS-101938-05

**PROPOSED 24" WATER MAIN - W2  
PLAN & PROFILE  
STA 120+00 TO 128+00**

**WATER LINES W1 & W2  
SOUTHEAST SECTOR**

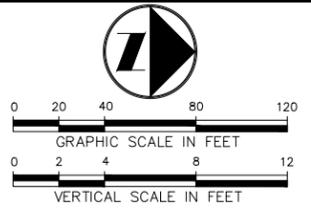
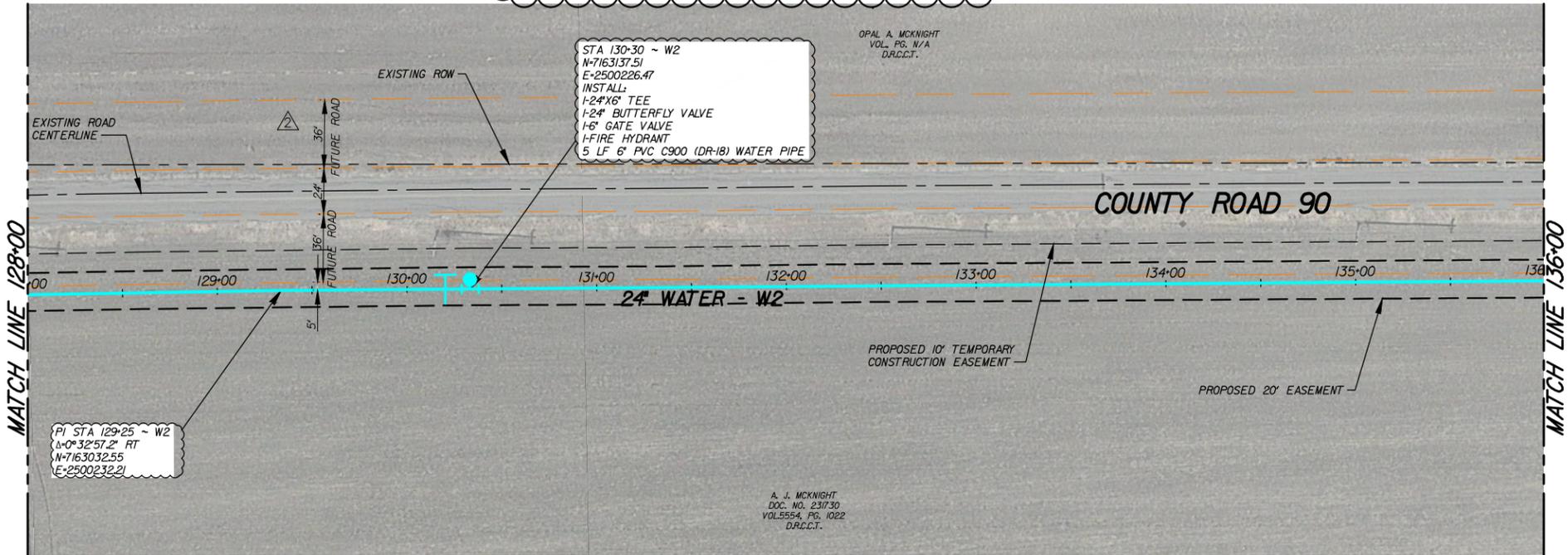
**CITY OF CELINA, COLLIN COUNTY, TEXAS**

DESIGN	DRAWN	DATE	JOB NO.	SHEET NO.
JCI/JLH	JCI/JLH	AUGUST 2015	3551-14.141	<b>W-22</b>

JHLSCHER  
08/26/2015 - 7:52AM  
J:\DWG-35\3551-14.141\DWG\C302020X\3551-14.141W2.DWG

WATER LINES W1 & W2 SOUTHEAST SECTOR (W-201411-01)

INSTALL 800 LF OF 24" PVC WATER MAIN  
AWWA C905 CLASS 235 (DR-18)  
CLASS "B" EMBEDMENT

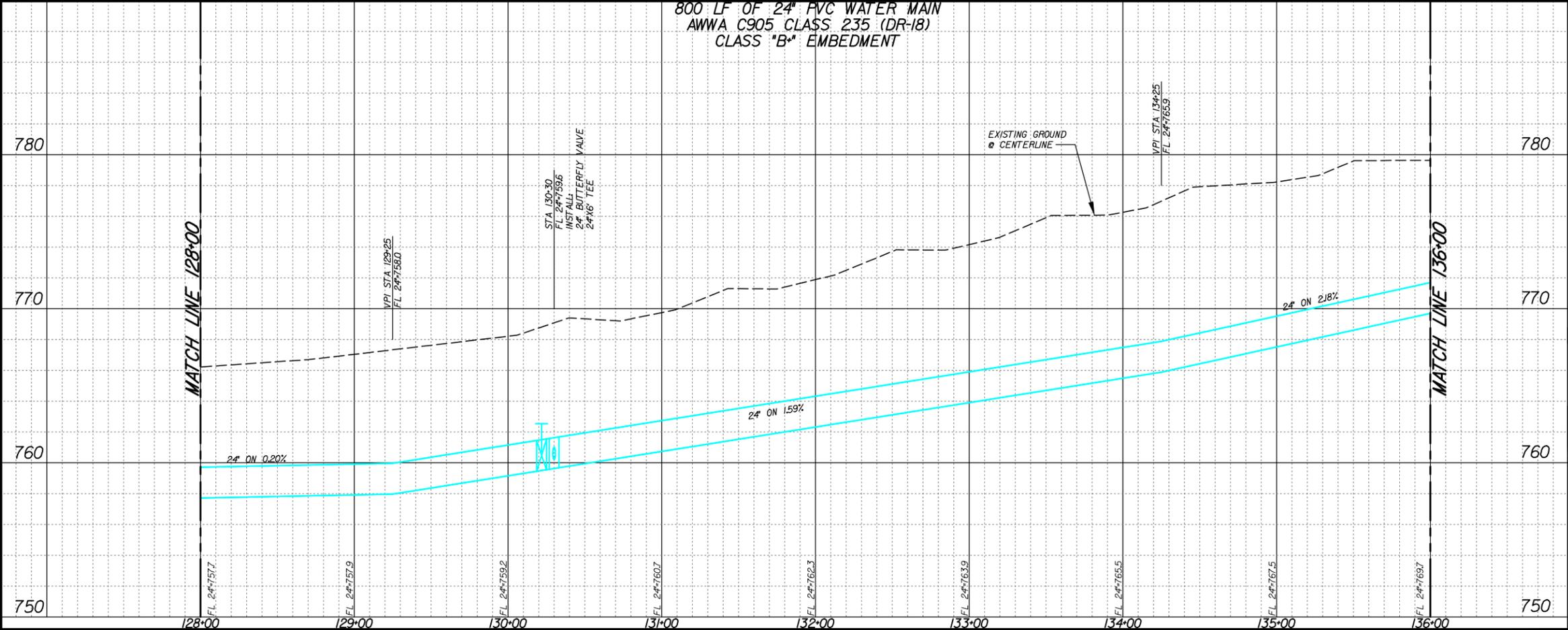


LEGEND

- PROPOSED WATER LINE
- - - FUTURE EDGE OF PAVEMENT

NOTE:

ALL ELEVATIONS ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ELEVATIONS SHOWN ON THESE PLANS.



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY CHRISTOPHER J. CHA, P.E. 112732 ON 08/25/2015. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

NO.	DATE	REVISION
1	07/27/2015	LABEL CORRECTION FROM 48" TO 36" FUTURE ROADWAY

**Pacheco Koch**  
8350 N. CENTRAL EXPWY. SUITE 1000  
DALLAS, TX 75206 972.235.3031  
TX REG. ENGINEERING FIRM F-14439  
TX REG. SURVEYING FIRM LS-101938-05

**PROPOSED 24" WATER MAIN - W2  
PLAN & PROFILE  
STA 128+00 TO 136+00**

**WATER LINES W1 & W2  
SOUTHEAST SECTOR**

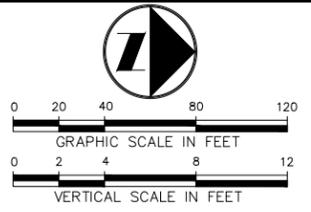
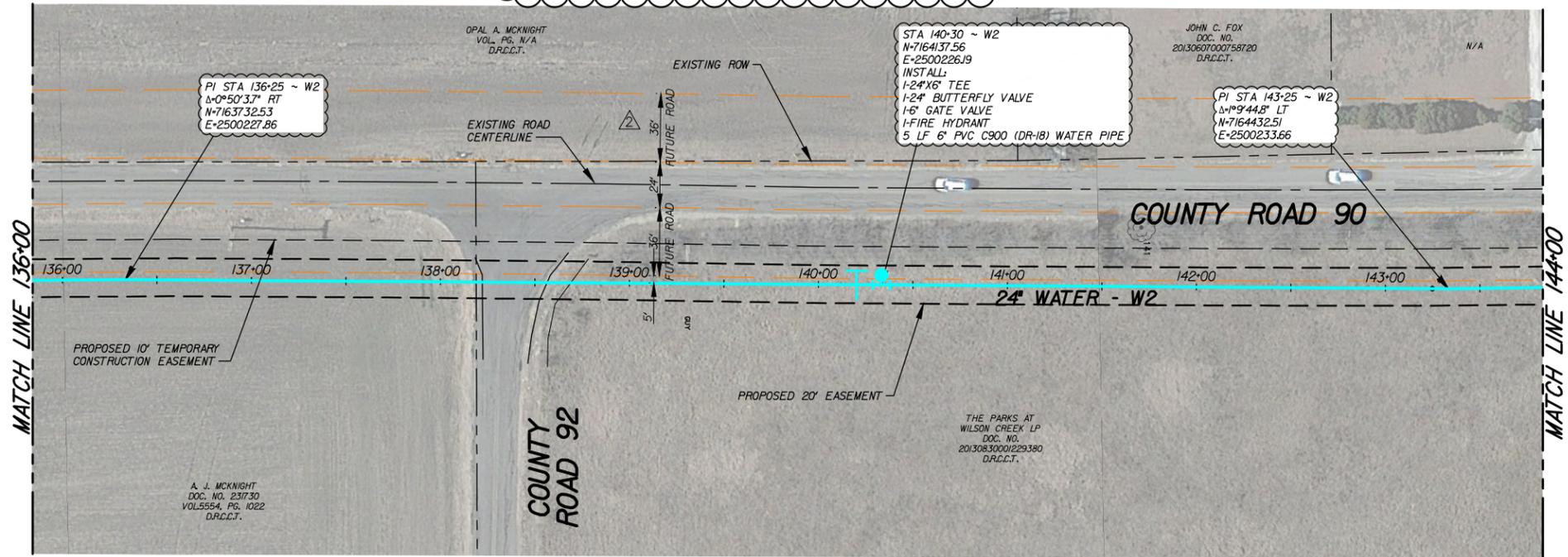
**CITY OF CELINA, COLLIN COUNTY, TEXAS**

DESIGN	DRAWN	DATE	JOB NO.	SHEET NO.
JCI/JLH	JCI/JLH	AUGUST 2015	3551-14.141	<b>W-23</b>

JHLSCHER  
08/26/2015 - 7:52AM  
J:\DWG-35\3551-14.141\DWG\C30202XX\3551-14.141W2.DWG

WATER LINES W1 & W2 SOUTHEAST SECTOR (W-201411-01)

INSTALL 800 LF OF 24" PVC WATER MAIN  
AWWA C905 CLASS 235 (DR-18)  
CLASS "B" EMBEDMENT



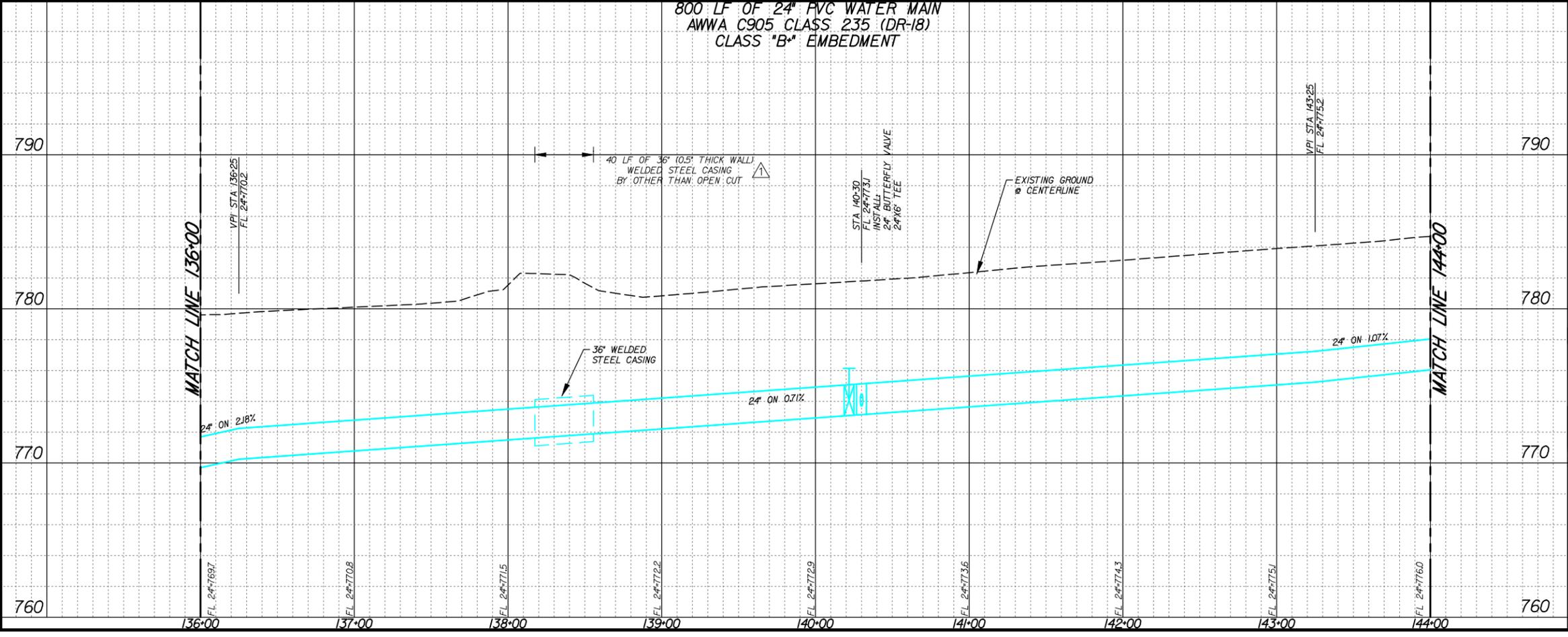
**LEGEND**

— PROPOSED WATER LINE

- - - FUTURE EDGE OF PAVEMENT

**NOTE:**

ALL ELEVATIONS ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ELEVATIONS SHOWN ON THESE PLANS.



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY CHRISTOPHER J. CHA, P.E. 112732 ON 08/25/2015. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

NO.	DATE	REVISION
△	07/27/2015	LABEL CORRECTION FROM 48" TO 36" FUTURE ROADWAY
△	05/19/2015	ADDENDUM #1

**Pacheco Koch** 8350 N. CENTRAL EXPWY. SUITE 1000  
DALLAS, TX 75206 972.235.3031  
TX REG. ENGINEERING FIRM F-14439  
TX REG. SURVEYING FIRM LS-101938-05

**PROPOSED 24" WATER MAIN - W2  
PLAN & PROFILE  
STA 136+00 TO 144+00**

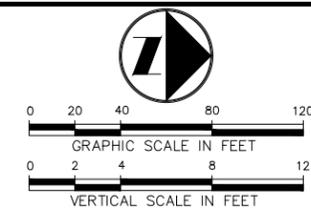
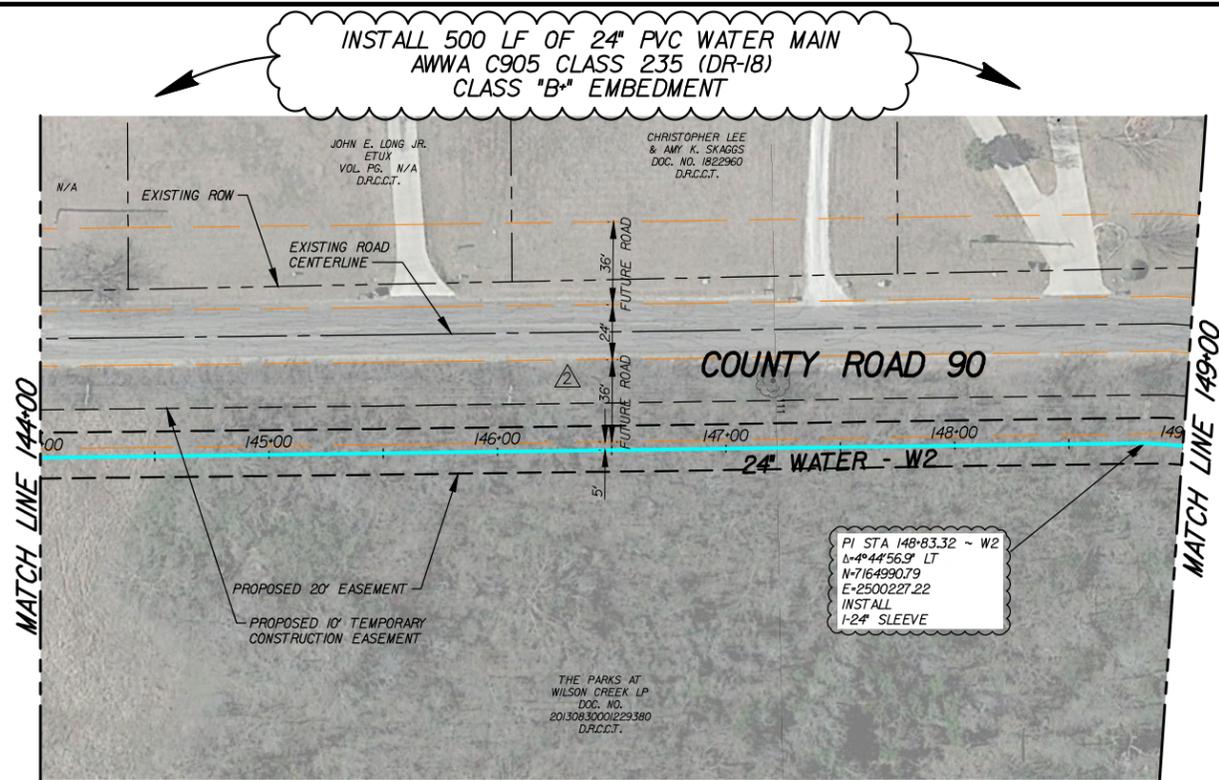
**WATER LINES W1 & W2  
SOUTHEAST SECTOR**

**CITY OF CELINA, COLLIN COUNTY, TEXAS**

DESIGN	DRAWN	DATE	JOB NO.	SHEET NO.
JCI/JLH	JCI/JLH	AUGUST 2015	3551-14.141	<b>W-24</b>

JHLSCHER  
08/26/2015 - 7:52AM  
J:\DWG-35\3551-14.141\DWG\C3020XX\3551-14.141W2.DWG

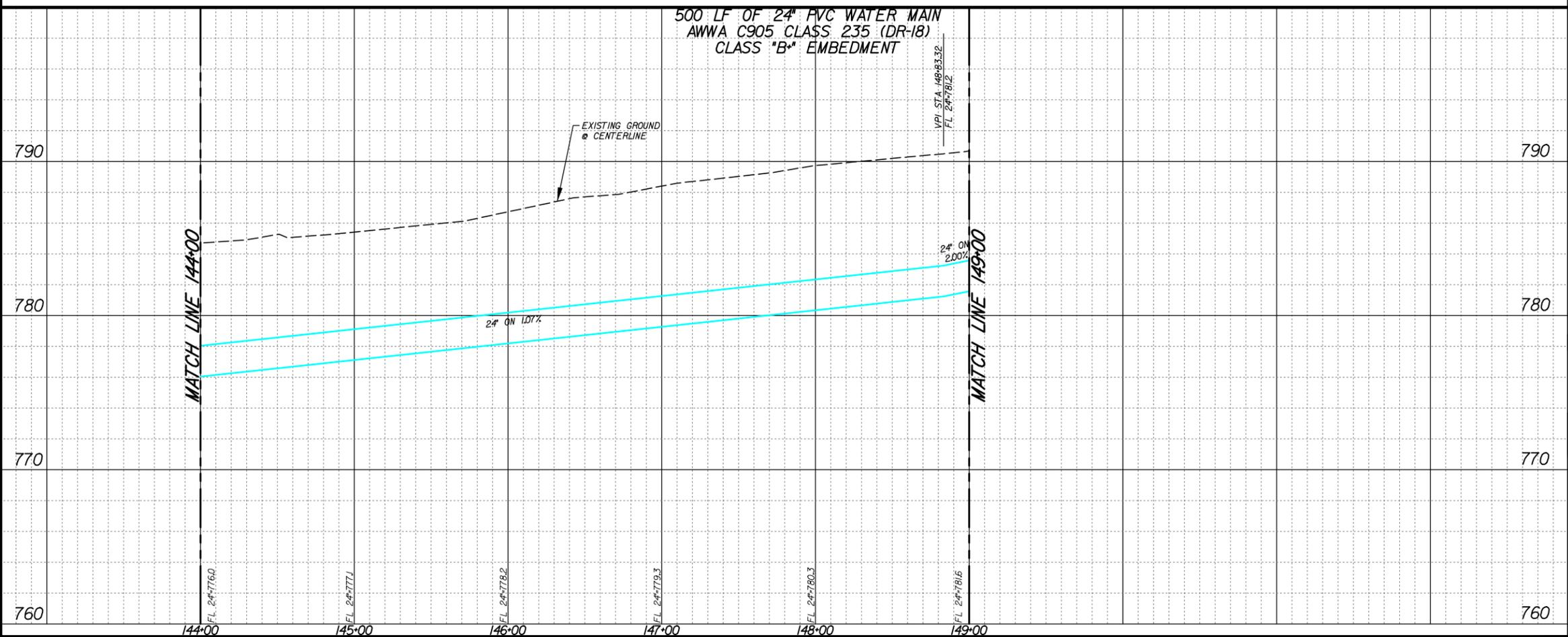
WATER LINES W1 & W2 SOUTHEAST SECTOR (W-201411-01)



**LEGEND**

- PROPOSED WATER LINE
- - - FUTURE EDGE OF PAVEMENT

**NOTE:**  
ALL ELEVATIONS ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ELEVATIONS SHOWN ON THESE PLANS.



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY CHRISTOPHER J. CHA, P.E. 112732 ON 08/25/2015. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

NO.	DATE	REVISION
1	07/27/2015	LABEL CORRECTION FROM 48" TO 36" FUTURE ROADWAY

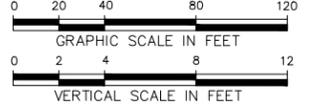
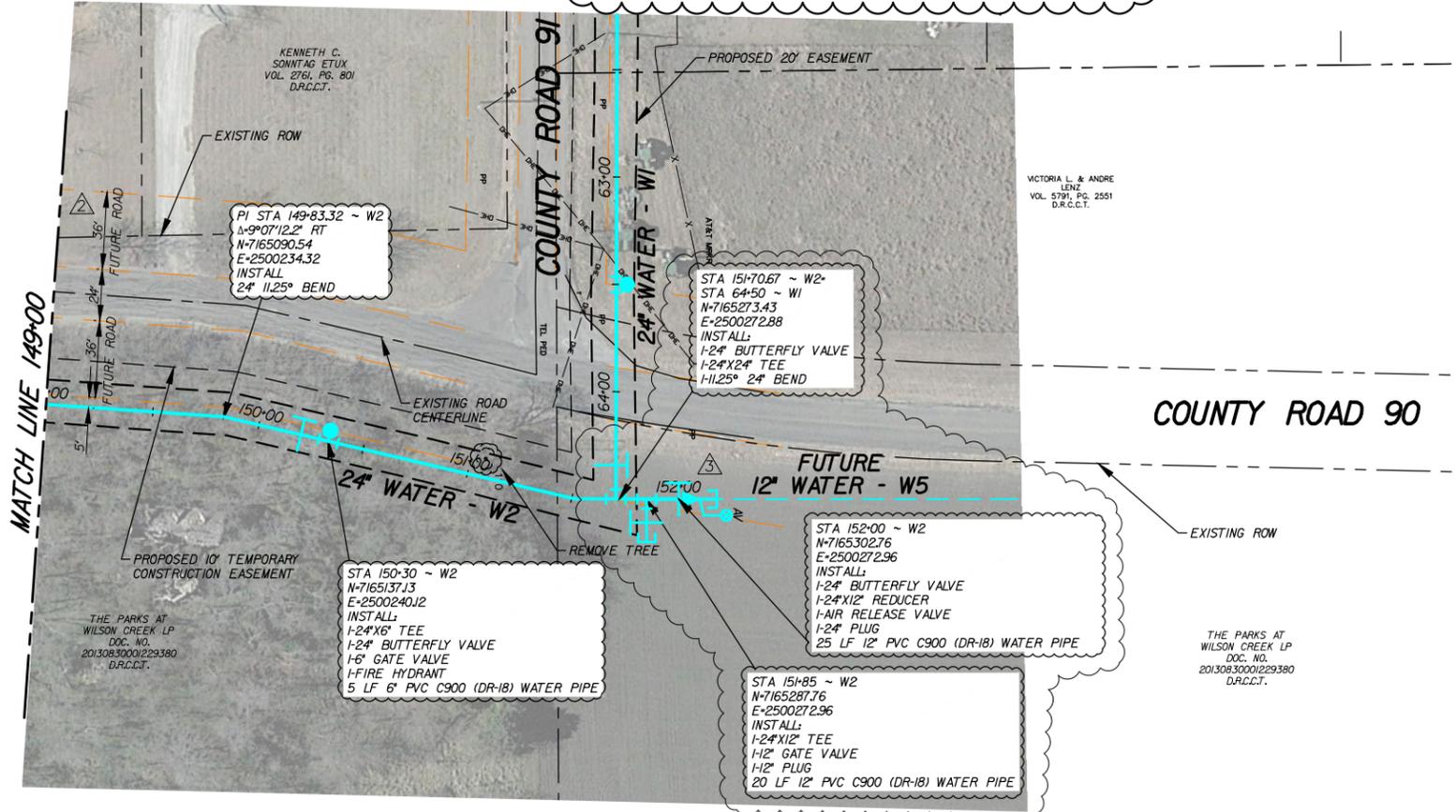
**Pacheco Koch**  
8350 N. CENTRAL EXPWY. SUITE 1000  
DALLAS, TX 75206 972.235.3031  
TX REG. ENGINEERING FIRM F-14439  
TX REG. SURVEYING FIRM LS-101938-05

<b>PROPOSED 24" WATER MAIN - W2 PLAN &amp; PROFILE STA 144+00 TO 149+00</b>				
<b>WATER LINES W1 &amp; W2 SOUTHEAST SECTOR</b>				
<b>CITY OF CELINA, COLLIN COUNTY, TEXAS</b>				
DESIGN	DRAWN	DATE	JOB NO.	SHEET NO.
JCI/JLH	JCI/JLH	AUGUST 2015	3551-14.141	<b>W-25</b>

JHLSCHER 08/26/2015 7:52AM J:\DWG-35\3551-14.141\DWG\C3020XX\3551-14.141W2.DWG

WATER LINES W1 & W2 SOUTHEAST SECTOR (W-201411-01)

INSTALL 288 LF OF 24" PVC WATER MAIN  
AWWA C905 CLASS 235 (DR-18)  
CLASS "B" EMBEDMENT

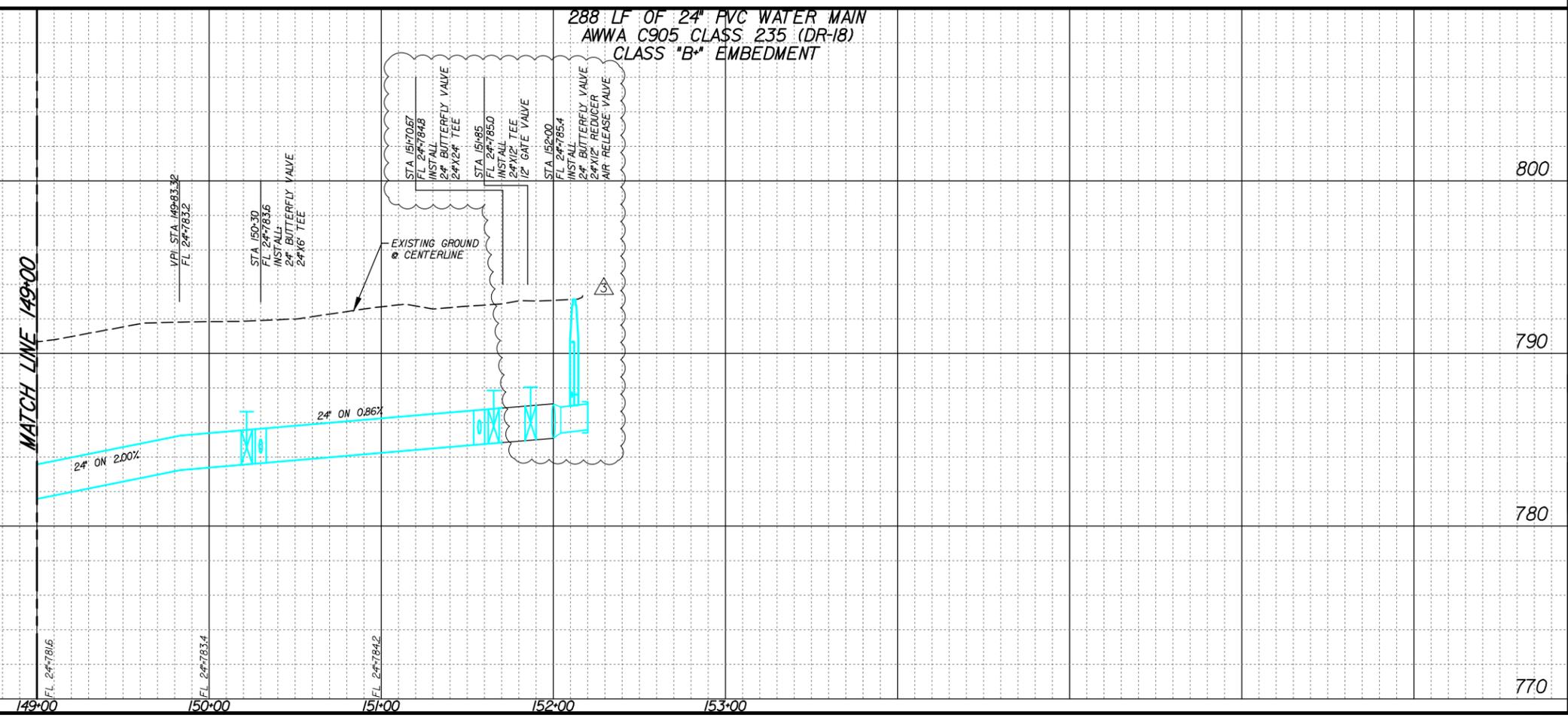


LEGEND

- PROPOSED WATER LINE
- - - FUTURE EDGE OF PAVEMENT

NOTE:

ALL ELEVATIONS ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ELEVATIONS SHOWN ON THESE PLANS.



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY CHRISTOPHER J. CHA, P.E. 112732 ON 08/25/2015. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

NO.	DATE	REVISION
1	08/25/2015	CHANGE ORDER #1
2	07/27/2015	LABEL CORRECTION FROM 48" TO 36" FUTURE ROADWAY

**Pacheco Koch**  
8350 N. CENTRAL EXPWY. SUITE 1000  
DALLAS, TX 75206 972.235.3031  
TX REG. ENGINEERING FIRM F-14439  
TX REG. SURVEYING FIRM LS-101938-05

**PROPOSED 24" WATER MAIN - W2  
PLAN & PROFILE  
STA 149+00 TO 151+70.67**

**WATER LINES W1 & W2  
SOUTHEAST SECTOR  
CITY OF CELINA, COLLIN COUNTY, TEXAS**

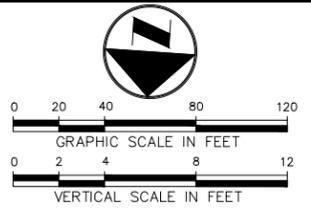
DESIGN	DRAWN	DATE	JOB NO.	SHEET NO.
JCI/JLH	JCI/JLH	AUGUST 2015	3551-14.141	<b>W-26</b>

HILSCHER  
08/26/2015 - 7:52AM  
J:\DWG-35\3551-14.141\DWG\C302020X\3551-14.141W2.DWG

WATER LINES W1 & W2 SOUTHEAST SECTOR (W-201411-01)

INSTALL 747 LF OF 12" PVC WATER MAIN  
AWWA C900 CLASS 235 (DR-18)  
CLASS "B" EMBEDMENT

NOTE:  
ALL FENCE TO BE REPLACED WITH EQUAL OR BETTER THAN EXISTING.  
REMOVAL AND REPLACEMENT OF FENCE SHALL BE CONSIDERED SUBSIDIARY  
TO BID ITEM 12" PVC C-900 CLASS 235, DR-18 WATER MAIN PIPE.

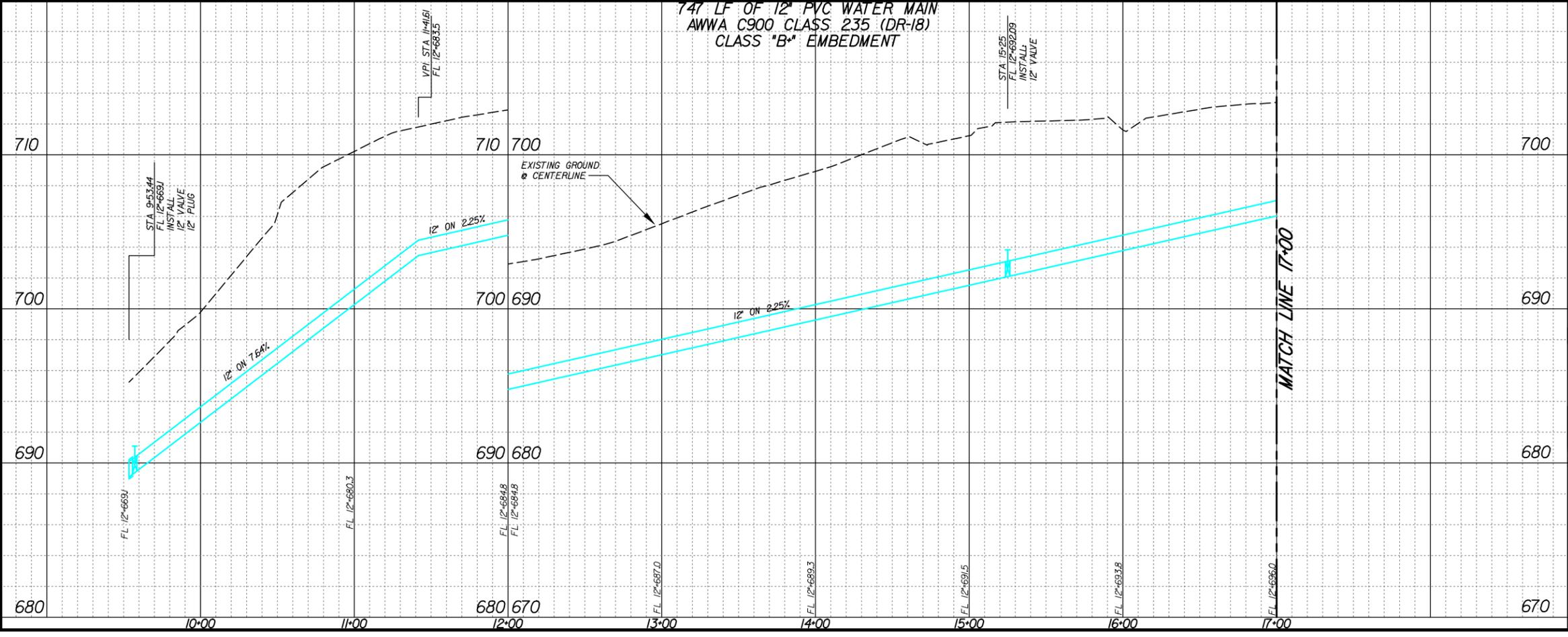
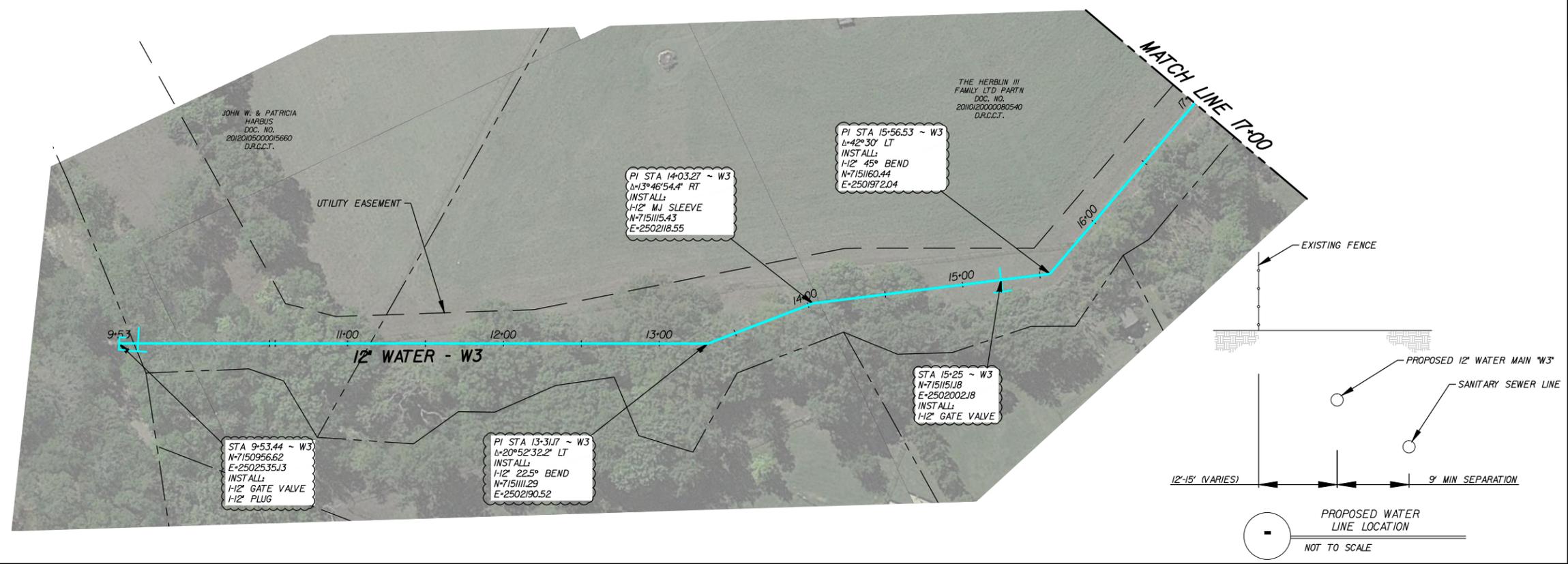


LEGEND

- PROPOSED WATER LINE
- - - FUTURE EDGE OF PAVEMENT

NOTE:

ALL ELEVATIONS ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ELEVATIONS SHOWN ON THESE PLANS.



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY CHRISTOPHER J. CHA, P.E. 112732 ON 08/25/2015. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

NO.	DATE	REVISION

**Pacheco Koch** 8350 N. CENTRAL EXPWY. SUITE 1000  
DALLAS, TX 75206 972.235.3031  
TX REG. ENGINEERING FIRM F-14439  
TX REG. SURVEYING FIRM LS-101938-05

**PROPOSED 12" & 16" WATER MAIN - W3  
PLAN & PROFILE  
STA 9+53.44 TO 17+00**

**WATER LINES W1 & W2  
SOUTHEAST SECTOR  
CITY OF CELINA, COLLIN COUNTY, TEXAS**

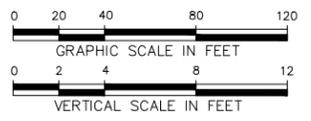
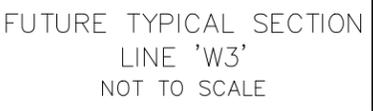
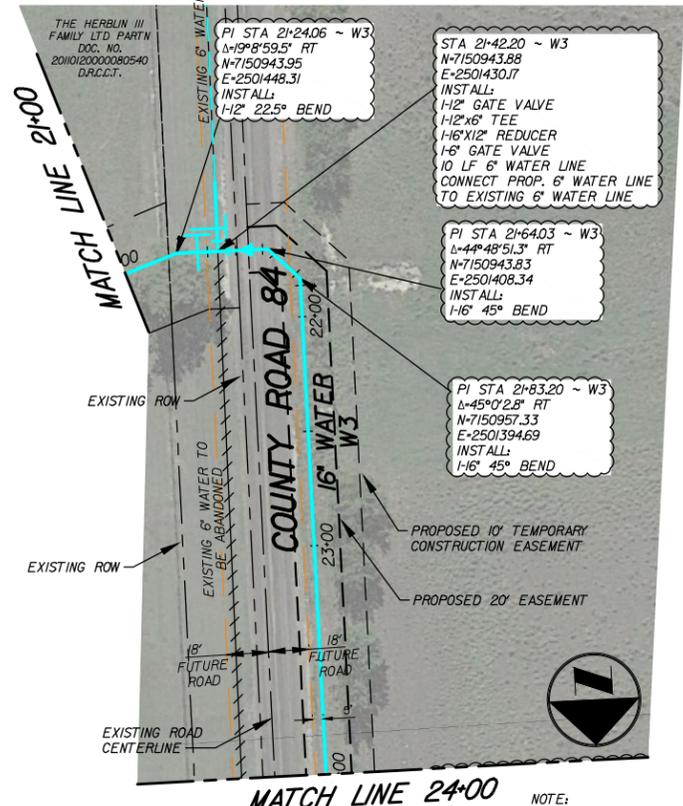
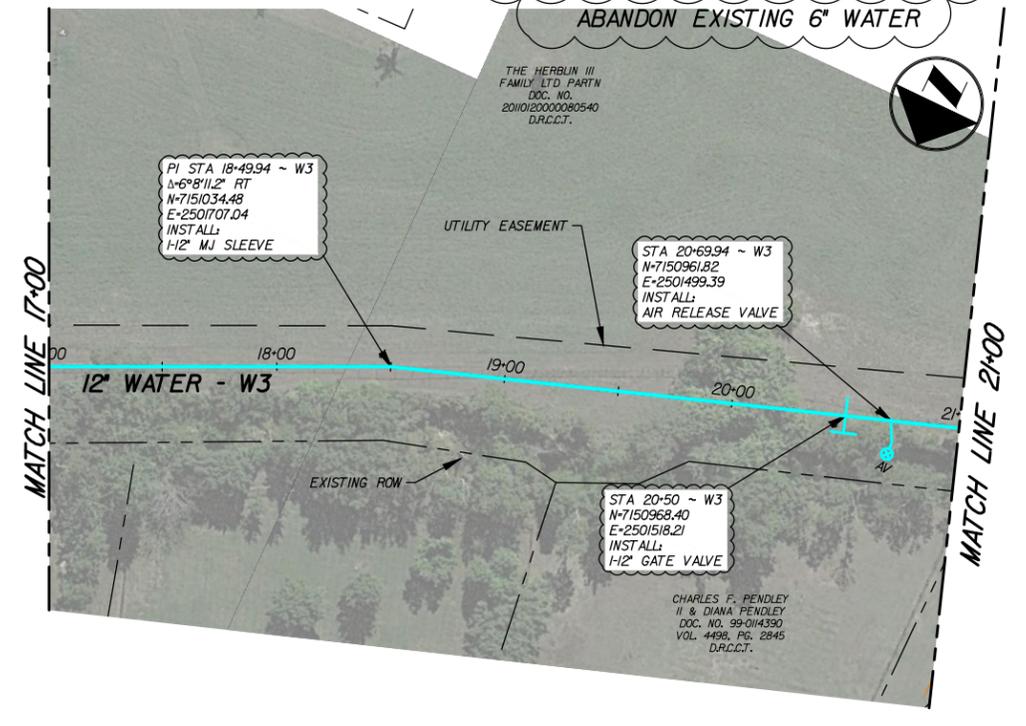
DESIGN	DRAWN	DATE	JOB NO.	SHEET NO.
JCI/JLH	JCI/JLH	AUGUST 2015	3551-14.141	<b>W-27</b>

JHLSCHER 08/26/2015 - 7:53AM J:\DWG-35\3551-14.141\DWG\C3020XX\3551-14.141\W3.DWG

WATER LINES W1 & W2 SOUTHEAST SECTOR (W-201411-01)

INSTALL 442 LF OF 12" PVC WATER MAIN  
AWWA C900 CLASS 235 (DR-18)  
258 LF OF 16" PVC WATER MAIN  
AWWA C905 CLASS 235 (DR-18)  
CLASS "B" EMBEDMENT

ABANDON EXISTING 6" WATER



LEGEND

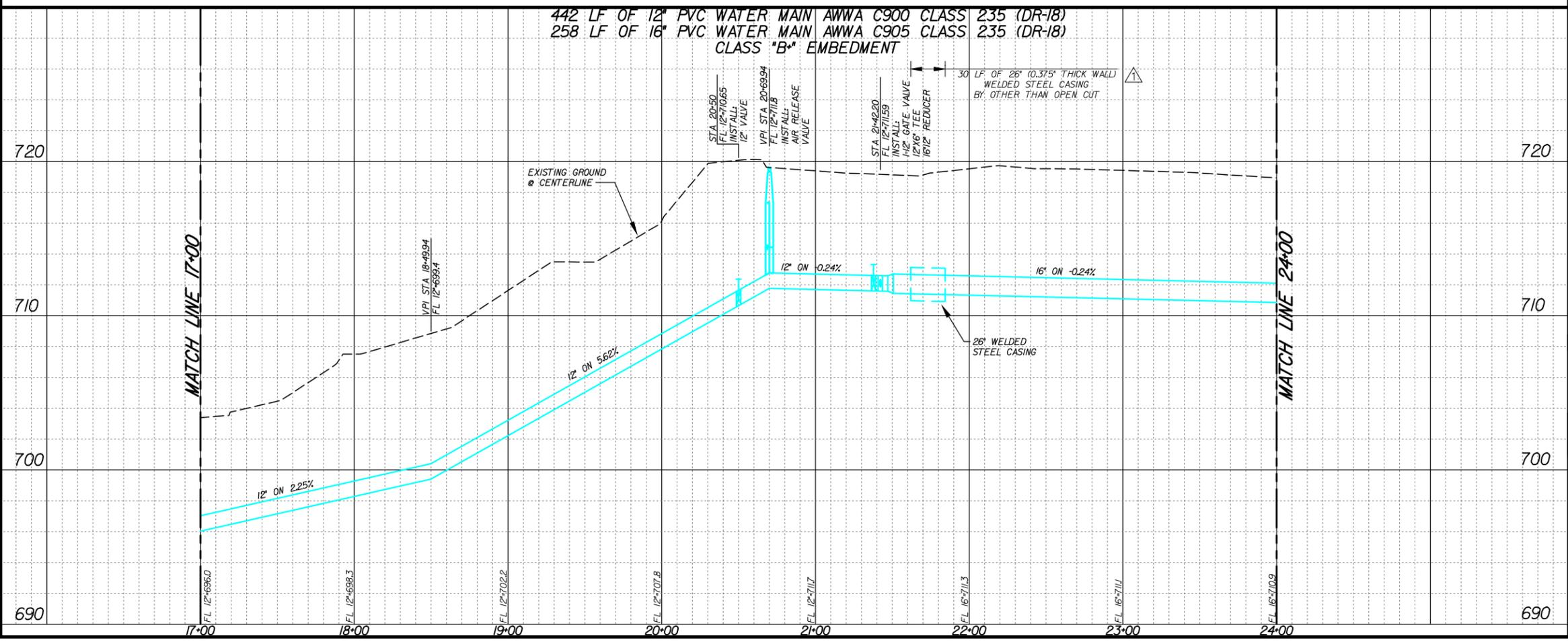
- PROPOSED WATER LINE
- - - FUTURE EDGE OF PAVEMENT

NOTE:

ALL ELEVATIONS ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ELEVATIONS SHOWN ON THESE PLANS.

NOTE:  
ALL FENCE TO BE REPLACED WITH EQUAL OR BETTER THAN EXISTING. REMOVAL AND REPLACEMENT OF FENCE SHALL BE CONSIDERED SUBSIDIARY TO BID ITEM 12" PVC C-900 CLASS 235, DR-18 WATER MAIN PIPE.

442 LF OF 12" PVC WATER MAIN AWWA C900 CLASS 235 (DR-18)  
258 LF OF 16" PVC WATER MAIN AWWA C905 CLASS 235 (DR-18)  
CLASS "B" EMBEDMENT



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY CHRISTOPHER J. CHA, P.E. 112732 ON 08/25/2015. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

NO.	DATE	REVISION
1	05/19/2015	ADDENDUM #1

**Pacheco Koch**  
8350 N. CENTRAL EXPWY. SUITE 1000  
DALLAS, TX 75206 972.235.3031  
TX REG. ENGINEERING FIRM F-14439  
TX REG. SURVEYING FIRM LS-101938-05

**PROPOSED 12" & 16" WATER MAIN - W3  
PLAN & PROFILE  
STA 17+00 TO 24+00**

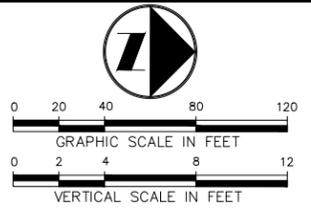
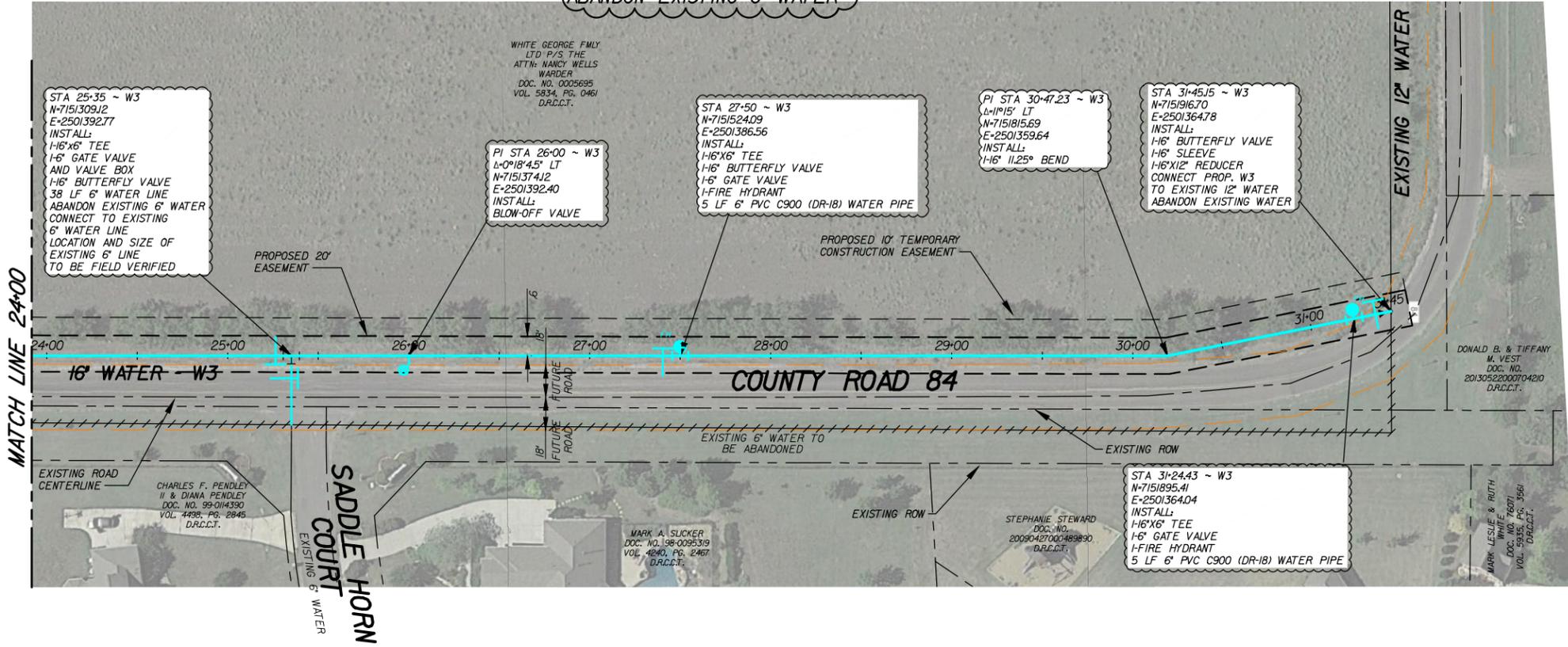
**WATER LINES W1 & W2  
SOUTHEAST SECTOR  
CITY OF CELINA, COLLIN COUNTY, TEXAS**

DESIGN	DRAWN	DATE	JOB NO.	SHEET NO.
JCI/JLH	JCI/JLH	AUGUST 2015	3551-14.141	<b>W-28</b>

HILSCHER  
08/26/2015 - 7:53AM  
J:\DWG-35\3551-14.141\DWG\C3020XX\3551-14.141.W3.DWG

WATER LINES W1 & W2 SOUTHEAST SECTOR (W-201411-01)

INSTALL 745 LF OF 16" PVC WATER MAIN  
 AWWA C905 CLASS 235 (DR-18)  
 CLASS "B" EMBEDMENT  
 ABANDON EXISTING 6" WATER

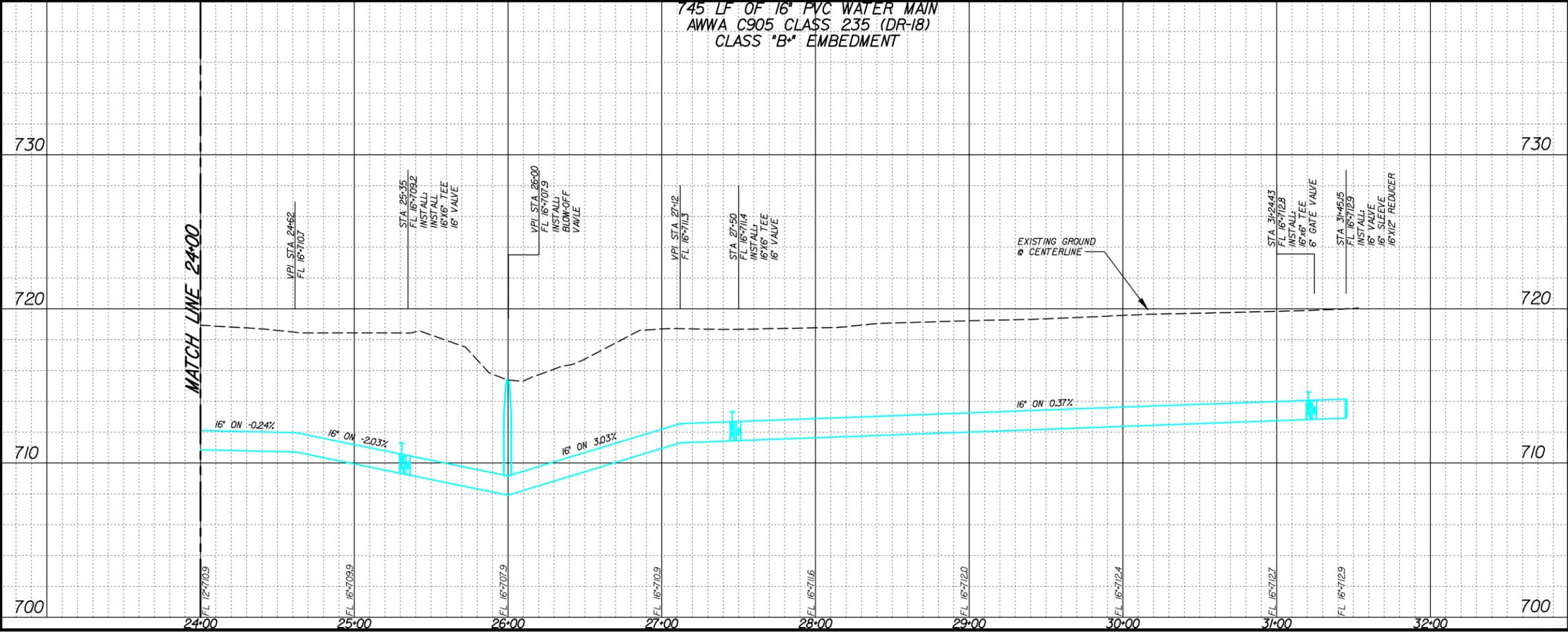


**LEGEND**

- PROPOSED WATER LINE
- - - FUTURE EDGE OF PAVEMENT

**NOTE:**

ALL ELEVATIONS ARE APPROXIMATE. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE ELEVATIONS SHOWN ON THESE PLANS.



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY CHRISTOPHER J. CHA, P.E. 112732 ON 08/25/2015. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

NO.	DATE	REVISION

**Pacheco Koch** 8350 N. CENTRAL EXPWY. SUITE 1000  
 DALLAS, TX 75206 972.235.3031  
 TX REG. ENGINEERING FIRM F-14439  
 TX REG. SURVEYING FIRM LS-101938-05

**PROPOSED 12" & 16" WATER MAIN - W3  
 PLAN & PROFILE  
 STA 24+00 TO 31+45.15**

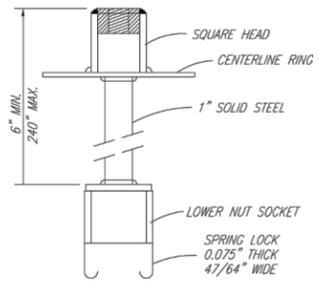
**WATER LINES W1 & W2  
 SOUTHEAST SECTOR**

**CITY OF CELINA, COLLIN COUNTY, TEXAS**

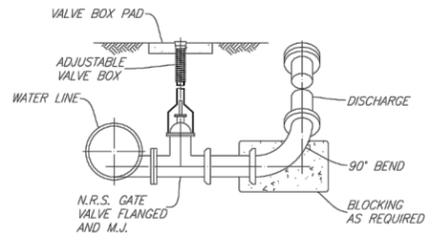
DESIGN	DRAWN	DATE	JOB NO.	SHEET NO.
JCI/JLH	JCI/JLH	AUGUST 2015	3551-14.141	<b>W-29</b>

JHLSCHER  
 08/26/2015 - 7:53AM  
 J:\DWG-35\3551-14.141\DWG\C3020XX\3551-14.141.W3.DWG

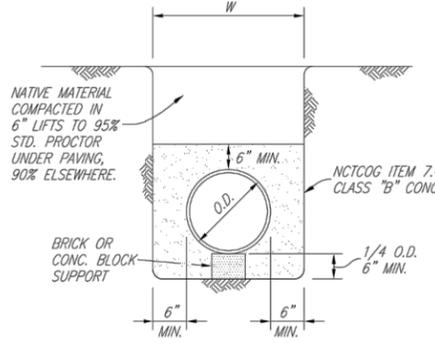
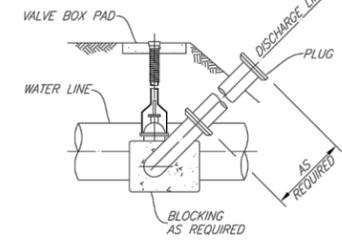
WATER LINES W1 & W2 SOUTHEAST SECTOR (W-201411-01)



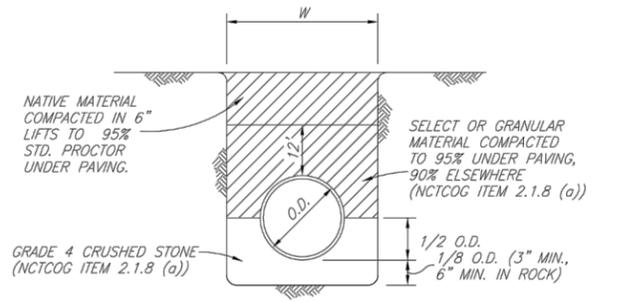
**SPRING LOCK VALVE EXTENSION**



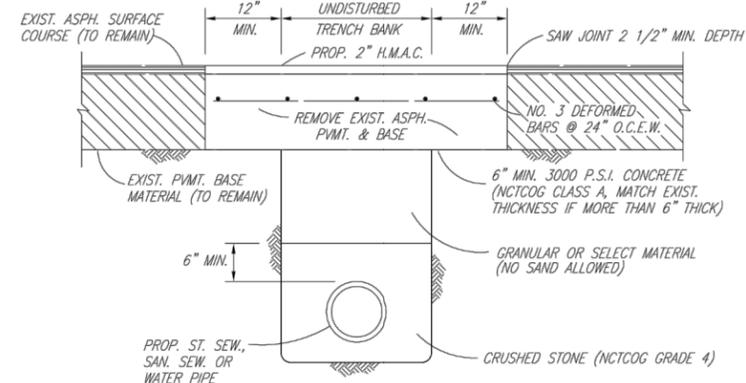
**BLOW OFF VALVE**



**CLASS G EMBEDMENT**

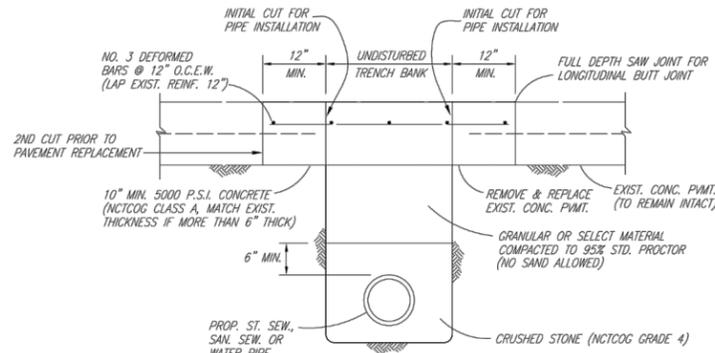


**CLASS B+ EMBEDMENT**



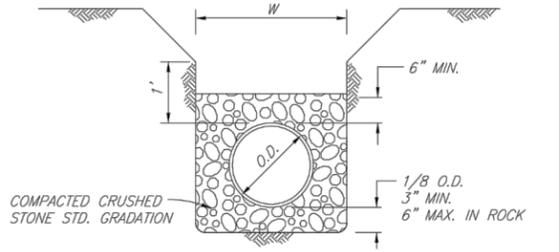
**ASPHALT STREET REPAIR**

NO SCALE



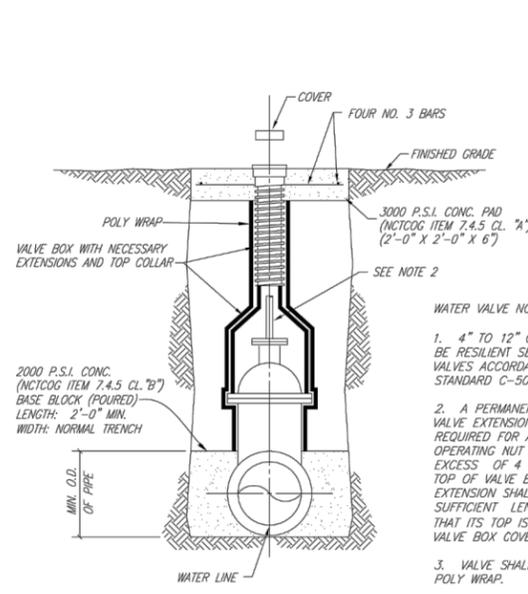
**CONCRETE STREET REPAIR**

NO SCALE



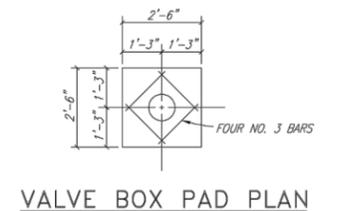
**CLASS H EMBEDMENT**

P.V.C. PIPE ONLY  
STD. P.V.C. SEWER INSTALLATION  
STD. P.V.C., R.C.C.P. & DUCTILE WATER INSTALLATION



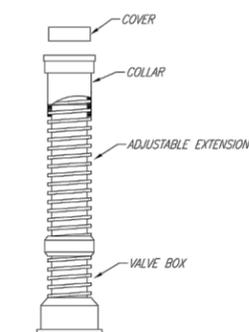
**VALVE SETTING & BOX**

NO SCALE



**VALVE BOX PAD PLAN**

NO SCALE

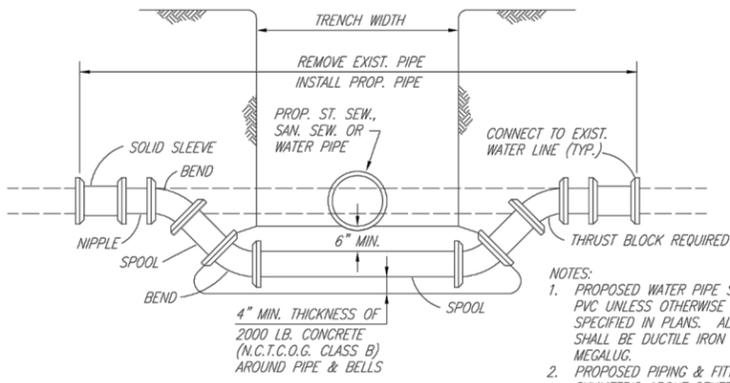


**VALVE BOX WITH EXTENSION**

NO SCALE

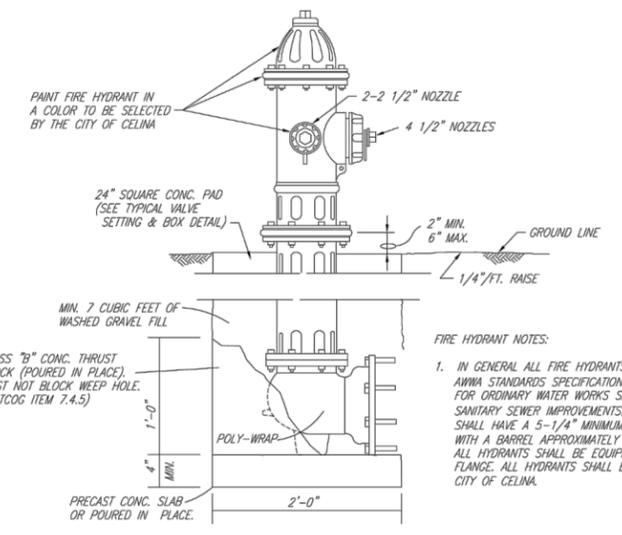
**WATER VALVE NOTES:**

- 4" TO 12" GATE VALVE SHALL BE RESILIENT SEATED WEDGE GATE VALVES ACCORDANCE WITH ANWA STANDARD C-509.
- A PERMANENTLY ATTACHED VALVE EXTENSION STEM SHALL BE REQUIRED FOR ANY VALVE WHOSE OPERATING NUT IS LOCATED IN EXCESS OF 4 FEET BELOW THE TOP OF VALVE BOX. THIS EXTENSION SHALL BE OF SUFFICIENT LENGTH TO INSURE THAT ITS TOP IS WITHIN 4" OF THE VALVE BOX COVER.
- VALVE SHALL BE WRAPPED IN POLY WRAP.



**WATER MAIN LOWERING**

- NOTES:**
- PROPOSED WATER PIPE SHALL BE PVC UNLESS OTHERWISE SPECIFIED IN PLANS. ALL FITTINGS SHALL BE DUCTILE IRON (M.J.-P.E.) MEGALUG.
  - PROPOSED PIPING & FITTINGS ARE SYMMETRIC ABOUT CENTER OF PROP. SAN. SEW. OR ST. SEW. PIPE AND SHALL RETAIN TEST PRESSURES.
  - ALL THRUST BLOCKING SHALL BE SUBSIDIARY TO UNIT PRICE.
  - CROSSING OF SANITARY SEWER SHALL BE IN ACCORDANCE WITH T.N.R.C.C. REQUIREMENTS. (CHAPTER 317.13 APPENDIX E)



**TYPICAL FIRE HYDRANT INSTALLATION**

NO SCALE

- FIRE HYDRANT NOTES:**
- IN GENERAL ALL FIRE HYDRANTS SHALL CONFORM TO ANWA 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 2" INSIDE DIAMETER. ALL HYDRANTS SHALL BE EQUIPPED WITH A BREAKAWAY FLANGE. ALL HYDRANTS SHALL BE APPROVED BY THE CITY OF CELINA.

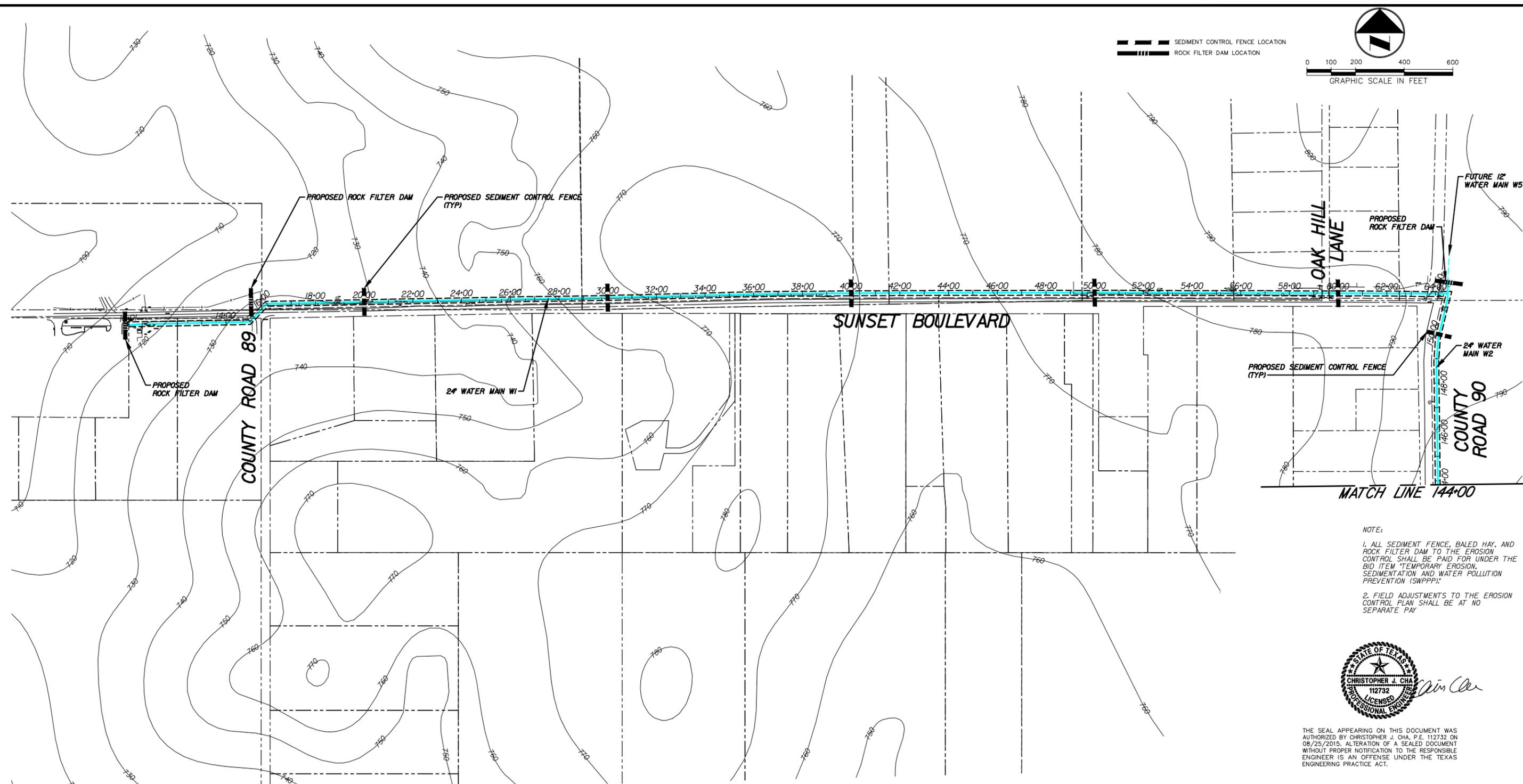
CITY OF CELINA, TEXAS

WATER DISTRIBUTION SYSTEM  
STANDARD DETAILS





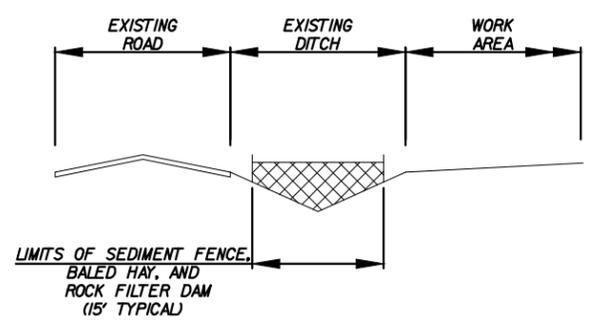
SEDIMENT CONTROL FENCE LOCATION  
ROCK FILTER DAM LOCATION



NOTE:  
1. ALL SEDIMENT FENCE, BALED HAY, AND ROCK FILTER DAM TO THE EROSION CONTROL SHALL BE PAID FOR UNDER THE BID ITEM "TEMPORARY EROSION, SEDIMENTATION AND WATER POLLUTION PREVENTION (SWPPP)".  
2. FIELD ADJUSTMENTS TO THE EROSION CONTROL PLAN SHALL BE AT NO SEPARATE PAY



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY CHRISTOPHER J. CHA, P.E. 112732 ON 08/25/2015. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.



NO.	DATE	REVISION

8350 N. CENTRAL EXPWY. SUITE 1000  
DALLAS, TX 75206 972.235.3031  
TX REG. ENGINEERING FIRM F-14439  
TX REG. SURVEYING FIRM LS-101938-05

**Pacheco Koch**

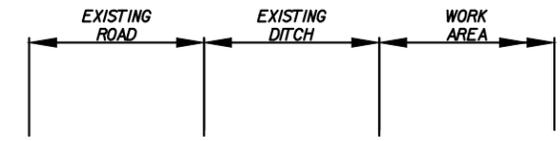
**EROSION CONTROL PLAN**  
**WATER MAIN W1**

**WATER LINES W1 & W2**  
**SOUTHEAST SECTOR**  
**CITY OF CELINA, COLLIN COUNTY, TEXAS**

DESIGN	DRAWN	DATE	JOB NO.	SHEET NO.
JCI	JCI	AUGUST 2015	3551-14.141	<b>EC-1</b>

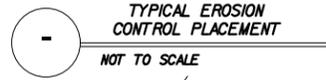
JHLSCHER  
08/26/2015 - 7:54AM  
J:\DWG-35\3551-14.141\DWG\C3020XX\3551-14.141EC.DWG

WATER LINES W1 & W2 SOUTHEAST SECTOR (W-201411-01)

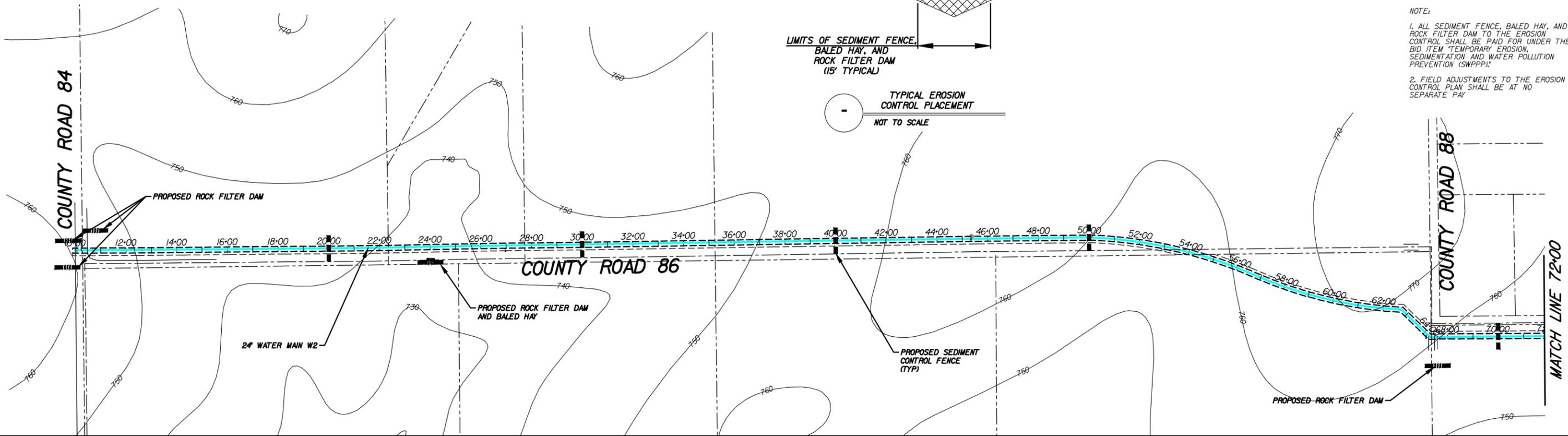


--- SEDIMENT CONTROL FENCE LOCATION  
--- ROCK FILTER DAM LOCATION

LIMITS OF SEDIMENT FENCE,  
BALED HAY, AND  
ROCK FILTER DAM  
(15' TYPICAL)



NOTE:  
1. ALL SEDIMENT FENCE, BALED HAY, AND ROCK FILTER DAM TO THE EROSION CONTROL SHALL BE PAID FOR UNDER THE BID ITEM "TEMPORARY EROSION, SEDIMENTATION AND WATER POLLUTION PREVENTION (SWPPP)".  
2. FIELD ADJUSTMENTS TO THE EROSION CONTROL PLAN SHALL BE AT NO SEPARATE PAY



COUNTY ROAD 84

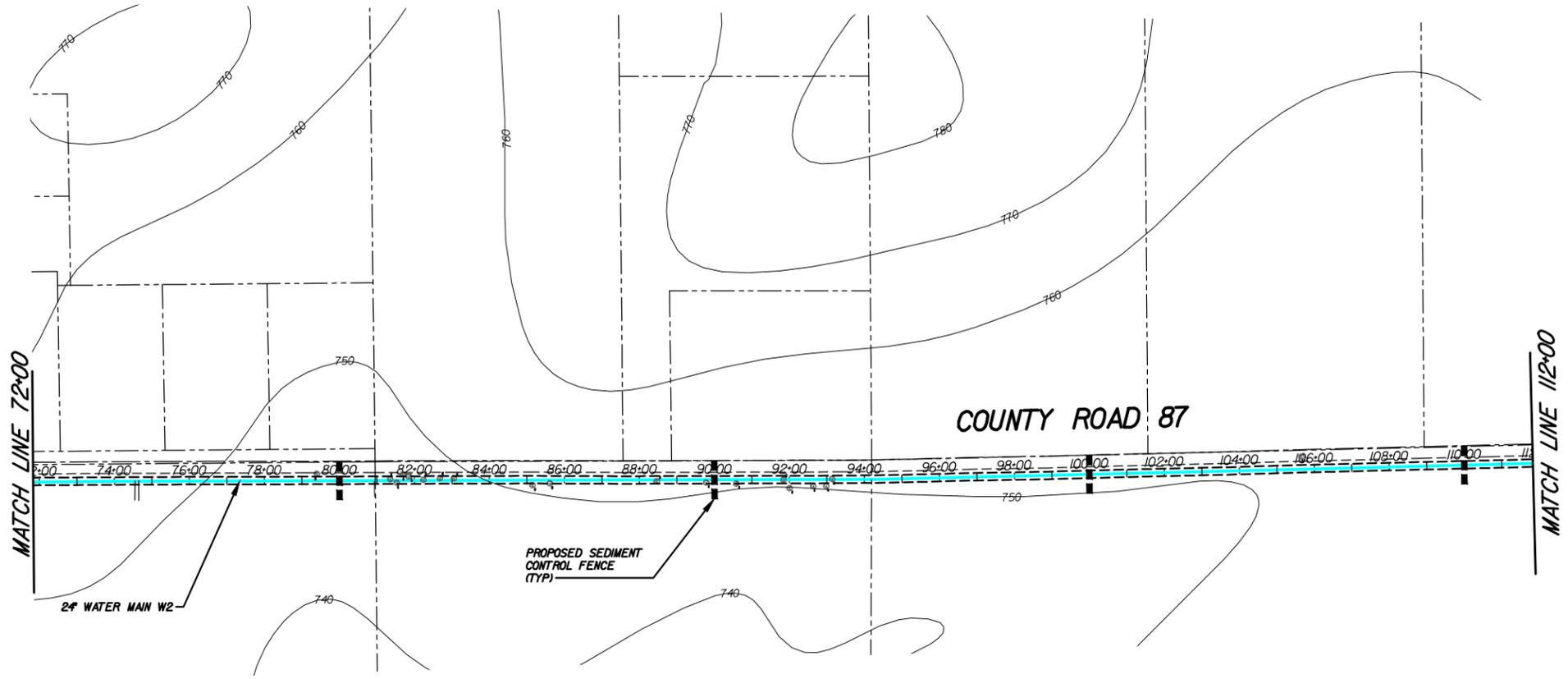
COUNTY ROAD 86

COUNTY ROAD 88

MATCH LINE 72+00



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY CHRISTOPHER J. CHA, P.E. 112732 ON 08/25/2015. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.



MATCH LINE 72+00

COUNTY ROAD 87

MATCH LINE 112+00

JHL/SCHER  
08/26/2015 - 7:54AM  
J:\DWG-35\3551-14\141\DWG\C3020XX\3551-14.141EC.DWG

NO.	DATE	REVISION

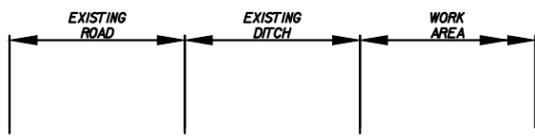
**Pacheco Koch** 8350 N. CENTRAL EXPWY. SUITE 1000  
DALLAS, TX 75206 972.235.3031  
TX REG. ENGINEERING FIRM F-14439  
TX REG. SURVEYING FIRM LS-101938-05

**EROSION CONTROL PLAN**  
**WATER MAIN W2**

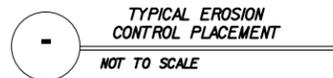
**WATER LINES W1 & W2**  
**SOUTHEAST SECTOR**  
**CITY OF CELINA, COLLIN COUNTY, TEXAS**

DESIGN	DRAWN	DATE	JOB NO.	SHEET NO.
JCI	JCI	AUGUST 2015	3551-14.141	<b>EC-2</b>

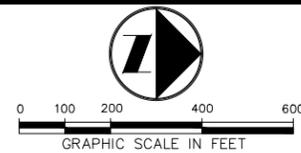
WATER LINES W1 & W2 SOUTHEAST SECTOR (W-201411-01)



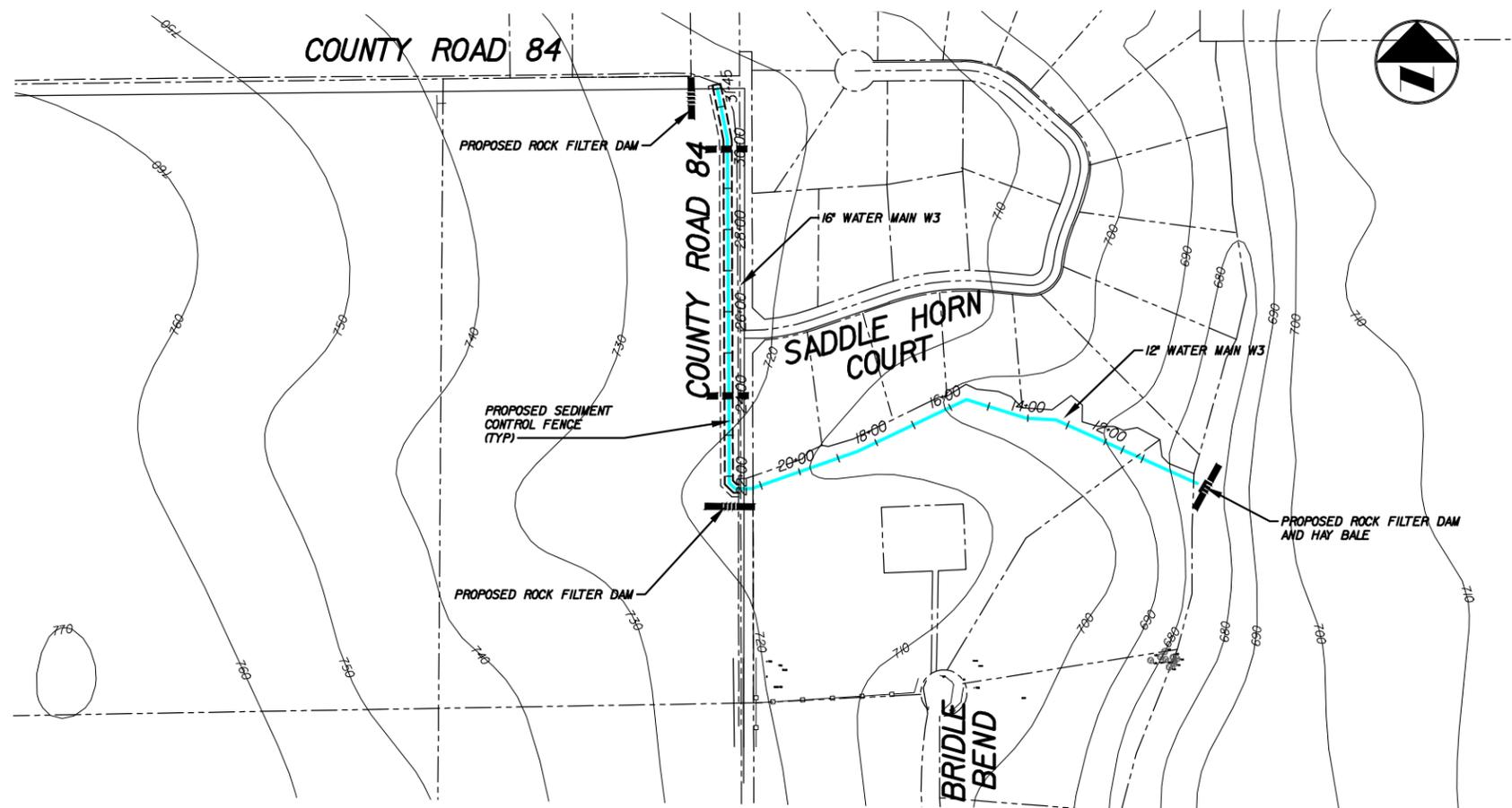
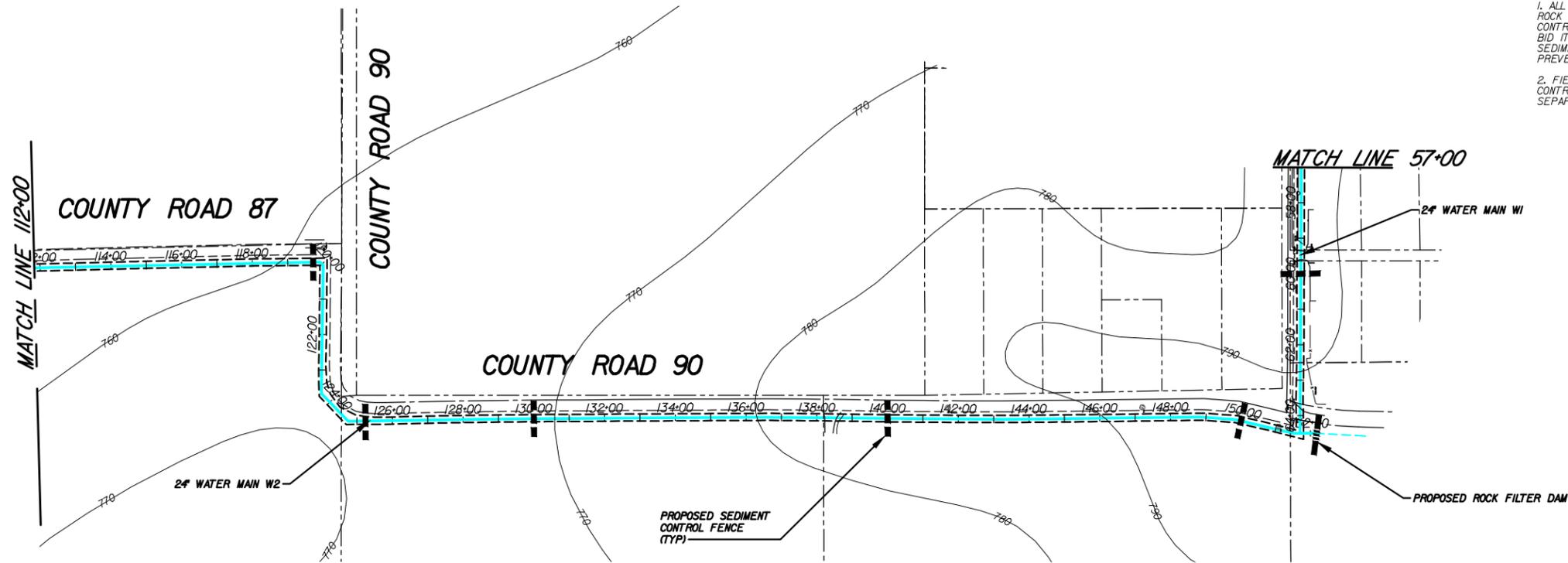
LIMITS OF SEDIMENT FENCE, BALED HAY, AND ROCK FILTER DAM (15' TYPICAL)



--- SEDIMENT CONTROL FENCE LOCATION  
 --- ROCK FILTER DAM LOCATION



NOTE:  
 1. ALL SEDIMENT FENCE, BALED HAY, AND ROCK FILTER DAM TO THE EROSION CONTROL SHALL BE PAID FOR UNDER THE BID ITEM "TEMPORARY EROSION, SEDIMENTATION AND WATER POLLUTION PREVENTION (SWPPP)".  
 2. FIELD ADJUSTMENTS TO THE EROSION CONTROL PLAN SHALL BE AT NO SEPARATE PAY



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY CHRISTOPHER J. CHA, P.E. 112732 ON 08/25/2015. ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT.

NO.	DATE	REVISION

**Pacheco Koch** 8350 N. CENTRAL EXPWY. SUITE 1000  
 DALLAS, TX 75206 972.235.3031  
 TX REG. ENGINEERING FIRM F-14439  
 TX REG. SURVEYING FIRM LS-101938-05

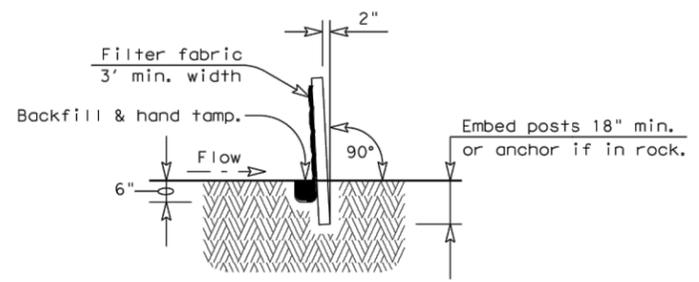
**EROSION CONTROL PLAN**  
**WATER MAIN W2 & W3**  
**WATER LINES W1 & W2**  
**SOUTHEAST SECTOR**  
**CITY OF CELINA, COLLIN COUNTY, TEXAS**

DESIGN	DRAWN	DATE	JOB NO.	SHEET NO.
JCI	JCI	AUGUST 2015	3551-14.141	<b>EC-3</b>

JHL/SCHER  
 08/26/2015 - 7:54AM  
 J:\DWG-35\3551-14.141\DWG\C3020XX\3551-14.141EC.DWG

WATER LINES W1 & W2 SOUTHEAST SECTOR (W-201411-01)

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.



**SECTION A-A**

**GENERAL NOTES**

1. The guidelines shown hereon are suggestions only and may be modified by the Engineer.

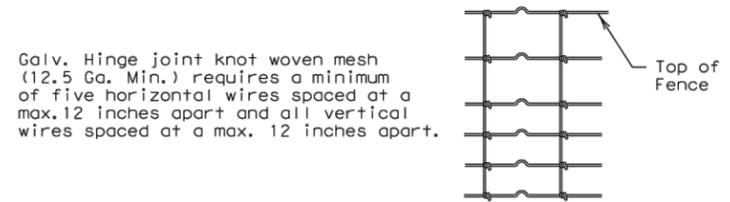
**PLAN SHEET LEGEND**



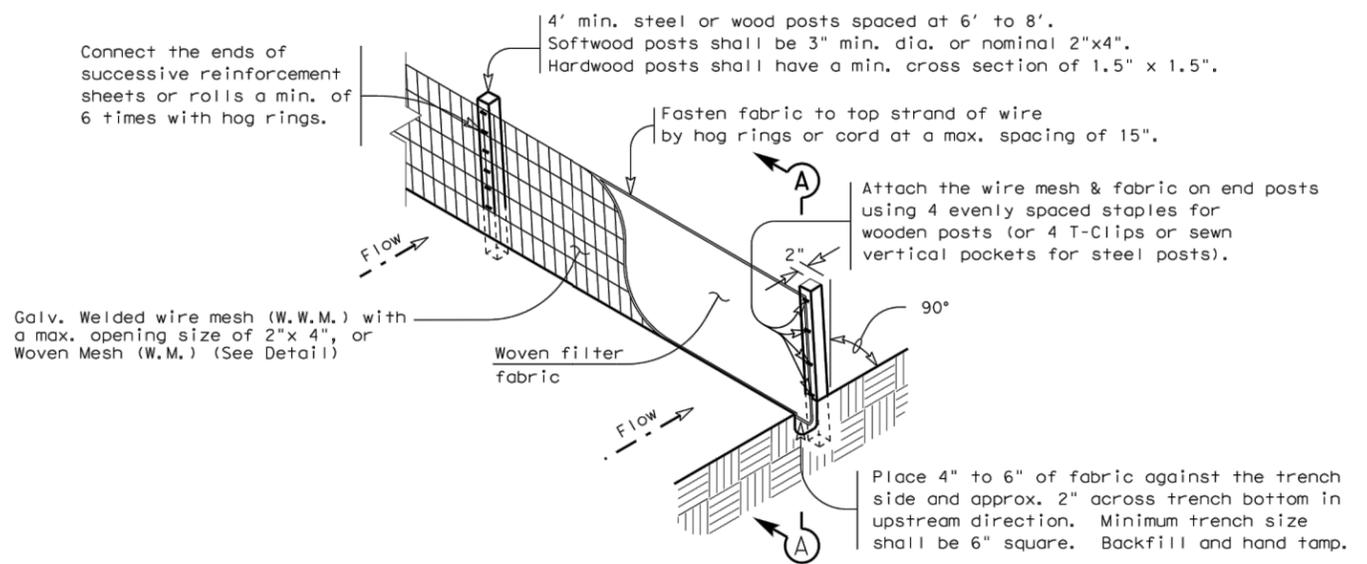
**SEDIMENT CONTROL FENCE USAGE GUIDELINES**

A sediment control fence may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A 2 year storm frequency may be used to calculate the flow rate to be filtered.

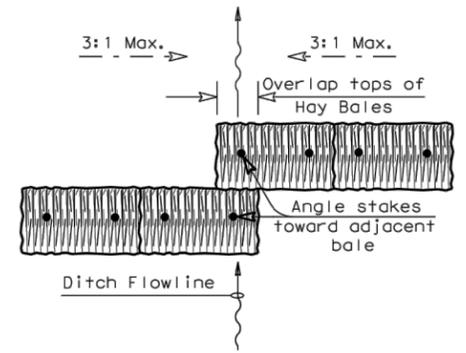
Sediment control fence should be sized to filter a max. flow through rate of 100 GPM/FT<sup>2</sup>. Sediment control fence is not recommended to control erosion from a drainage area larger than 2 acres.



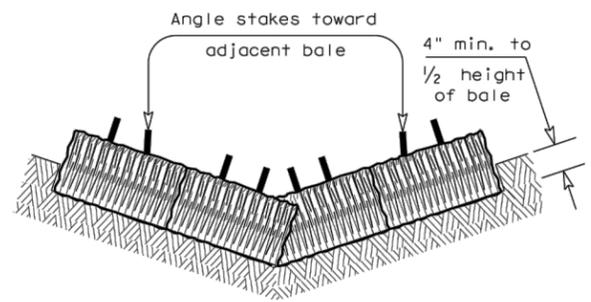
**Hinge Joint Knot Woven Mesh (Option)**



**TEMPORARY SEDIMENT CONTROL FENCE**

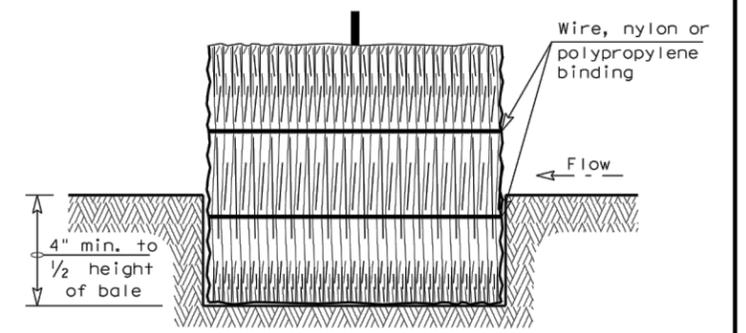


**PLAN VIEW**

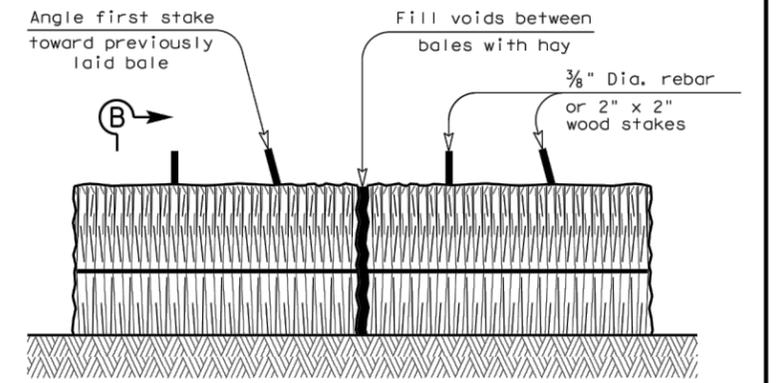


**PROFILE VIEW**

**PLANS SHEET LEGEND**



**SECTION B-B**



**BALED HAY FOR EROSION CONTROL**



**GENERAL NOTES**

1. Hay bales shall be a minimum of 30" in length and weigh a minimum of 50 Lbs.
2. Hay bales shall be bound by either wire or nylon or polypropylene string. The bales shall be composed entirely of vegetative matter.
3. Hay bales shall be embedded in the soil a minimum of 4" and where possible 1/2 the height of the bale.
4. Hay bales shall be placed in a row with ends tightly abutting the adjacent bales. The bales shall be placed with bindings parallel to the ground.
5. Hay bales shall be securely anchored in place with 3/8" Dia. rebar or 2" x 2" wood stakes, driven through the bales. The first stake shall be angled towards the previously laid bale to force the bales together.
6. The guidelines shown hereon are suggestions only and may be modified by the Engineer.

**BALED HAY USAGE GUIDELINES**

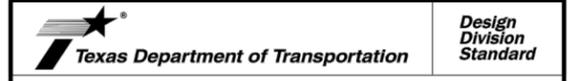
A Baled Hay installation may be constructed near the downstream perimeter of a disturbed area along a contour to intercept sediment from overland runoff. A two year storm frequency may be used to calculate the flow rate to be filtered. The installation should be sized to filter a maximum flow thru rate of 5 GPM/FT<sup>2</sup> of cross sectional area. Baled hay may be used at the following locations:

1. Where the runoff approaching the baled hay flows over disturbed soil for less than 100'. If the slope of the disturbed soil exceeds 10%, the length of slope upstream the baled hay should be less than 50'.
2. Where the installation will be required for less than 3 months.
3. Where the contributing drainage area is less than 1/2 acre.

For Baled Hay installations in small ditches, the additional following considerations apply:

1. The ditch sideslopes should be graded as flat as possible to maximize the drainage flowrate thru the hay.
2. The ditch should be graded large enough to contain the overtopping drainage when sediment has filled to the top of the baled hay.

Bales should be replaced usually every 2 months or more often during wet weather when loss of structural integrity is accelerated.



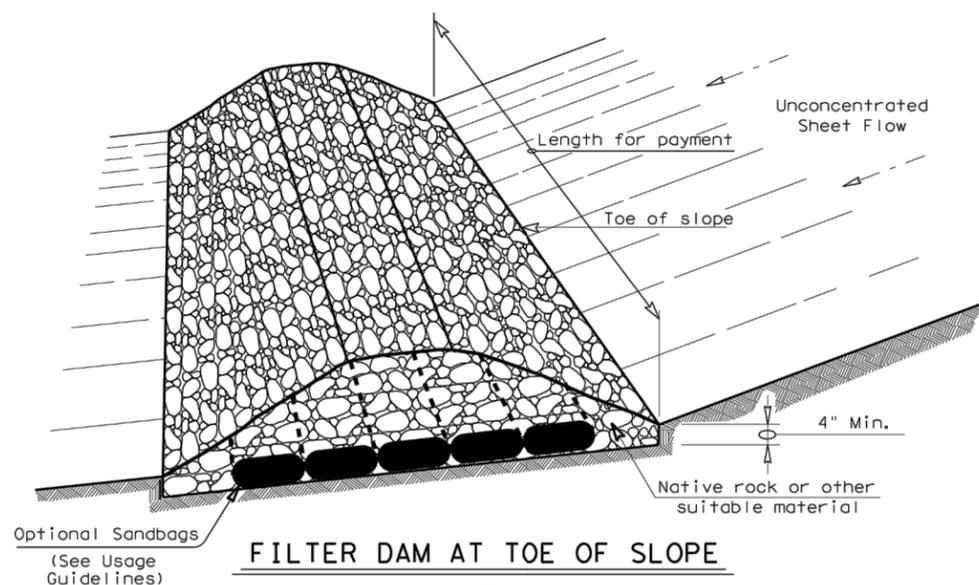
**TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES FENCE & BALED HAY EC(1)-09**

FILE: ec109.dgn	DN: TxDOT	CK: AM	DW: TV	CK: BD
© TxDOT June 1993	CONT	SECT	JOB	HIGHWAY
REVISIONS	DIST	COUNTY	SHEET NO.	

DATE: FILE:

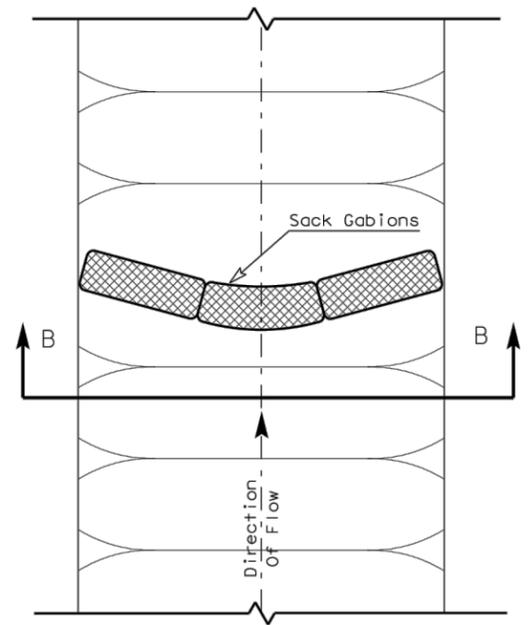
DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE: FILE:

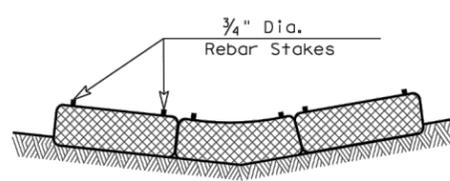


**FILTER DAM AT TOE OF SLOPE**

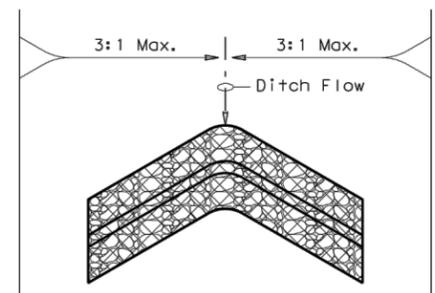
RFD1  
TYPE 1



**PLAN VIEW**



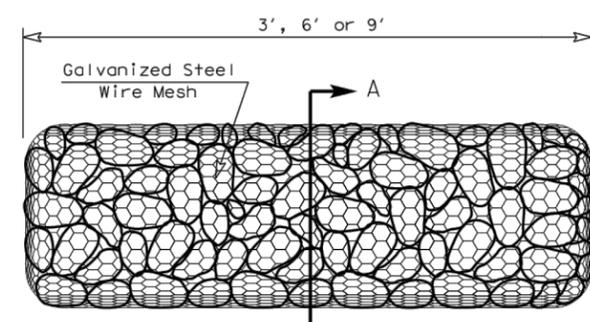
**SECTION B-B**



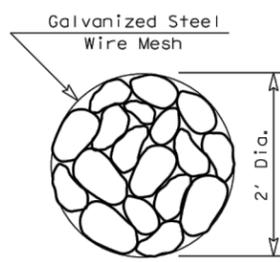
**"V" SHAPE  
(Plan View)**

**PLANS SHEET LEGEND**

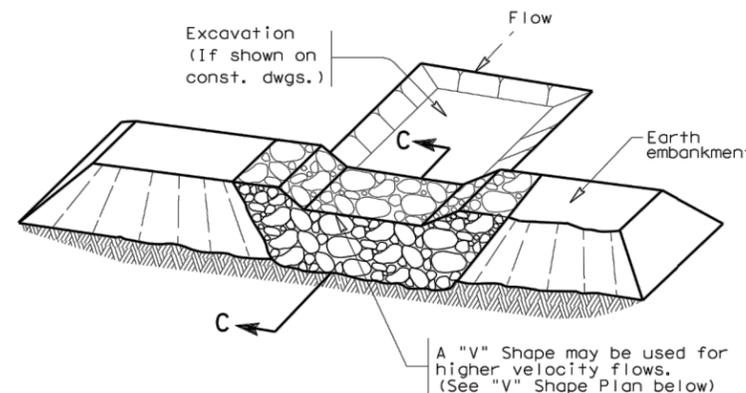
- Type 1 Rock Filter Dam — RFD1
- Type 2 Rock Filter Dam — RFD2
- Type 3 Rock Filter Dam — RFD3



**TYPE 4 (SACK GABIONS)**

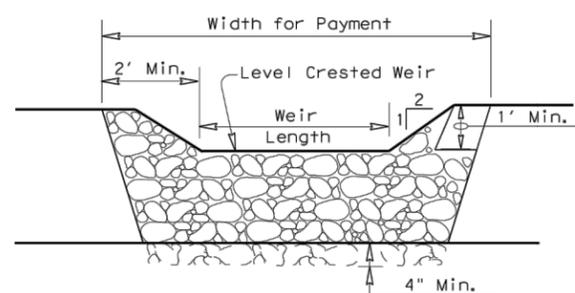


**SECTION A-A**

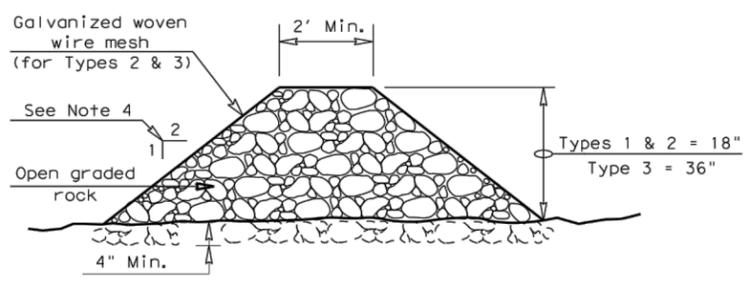


**FILTER DAM AT SEDIMENT TRAP**

RFD1 OR RFD2  
TYPE 1 OR TYPE 2



**PROFILE**



**SECTION C-C**

**ROCK FILTER DAM USAGE GUIDELINES**

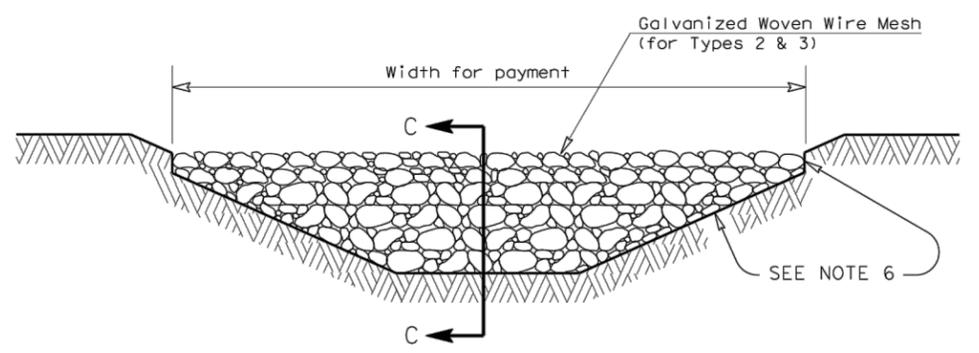
Rock Filter Dams should be constructed downstream from disturbed areas to intercept sediment from overland runoff and/or concentrated flow. The dams should be sized to filter a maximum flow through rate of 60 GPM/FT<sup>2</sup> of cross sectional area. A 2 year storm frequency may be used to calculate the flow rate.

**Type 1 (18" high with no wire mesh):** Type 1 may be used at the toe of slopes, around inlets, in small ditches, and at dike or swale outlets. This type of dam is recommended to control erosion from a drainage area of 5 acres or less. Type 1 may not be used in concentrated high velocity flows (approx. 8 Ft/Sec or more) in which aggregate wash out may occur. Sandbags may be used at the embedded foundation (4" deep min.) for better filtering efficiency of low flows if called for on the plans or directed by the Engineer.

**Type 2 (18" high with wire mesh):** Type 2 may be used in ditches and at dike or swale outlets.

**Type 3 (36" high with wire mesh):** Type 3 may be used in stream flow and should be secured to the stream bed.

**Type 4 (Sack gabions):** Type 4 May be used in ditches and smaller channels to form an erosion control dam.



**FILTER DAM AT CHANNEL SECTIONS**

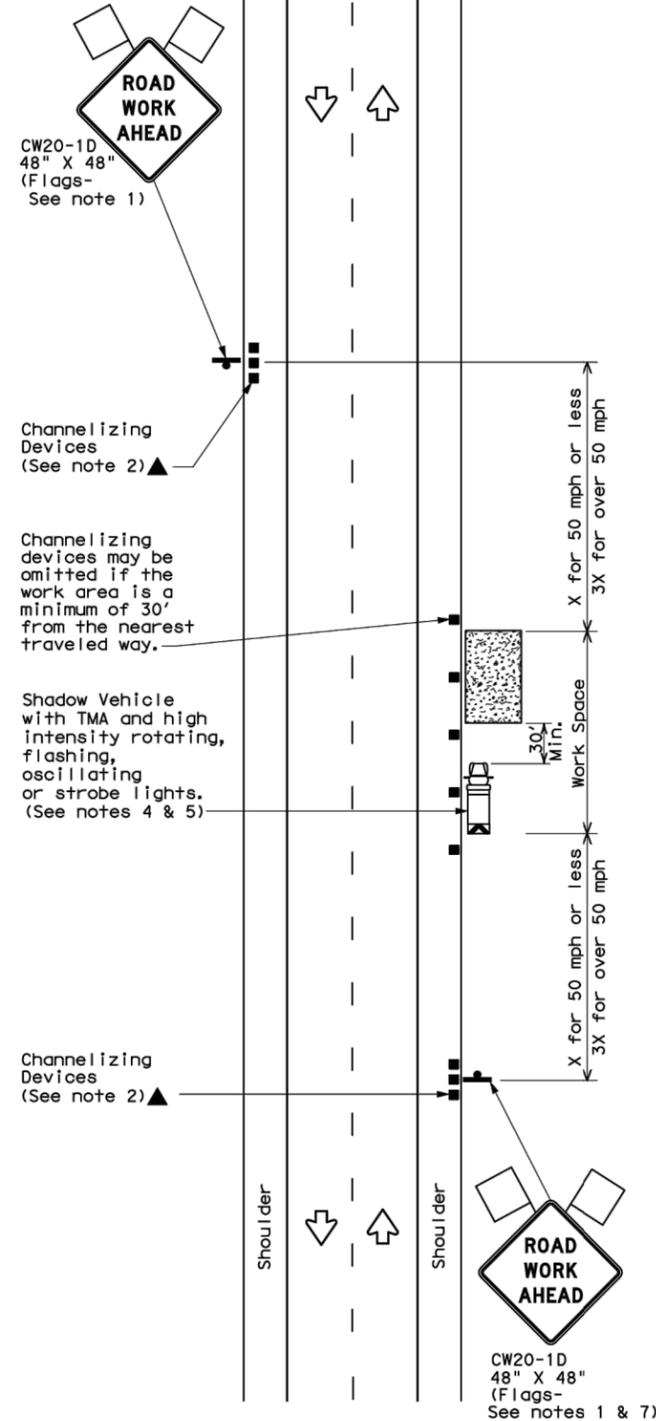
RFD1 OR RFD2 OR RFD3  
TYPE 1 OR TYPE 2

**GENERAL NOTES**

1. If shown on the plans or directed by the Engineer, filter dams should be placed near the toe of slopes where erosion is anticipated, upstream and/or downstream at drainage structures, and in roadway ditches and channels to collect sediment.
2. Materials (aggregate, wire mesh, sandbags, etc.) shall be as indicated by the specification for "Rock Filter Dams for Erosion and Sedimentation Control".
3. The rock filter dam dimensions shall be as indicated on the SW3P plans.
4. Side slopes should be 2:1 or flatter. Dams within the safety zone shall have sideslopes of 6:1 or flatter.
5. Maintain a minimum of 1' between top of rock filter dam weir and top of embankment for filter dams at sediment traps.
6. Filter dams should be embedded a minimum of 4" into existing ground.
7. The sediment trap for ponding of sediment laden runoff shall be of the dimensions shown on the plans.
8. Rock filter dam types 2 & 3 shall be secured with 20 gauge galvanized woven wire mesh with 1" diameter hexagonal openings. The aggregate shall be placed on the mesh to the height & slopes specified. The mesh shall be folded at the upstream side over the aggregate and tightly secured to itself on the downstream side using wire ties or hog rings. In stream use the mesh should be secured or staked to the stream bed prior to aggregate placement.
9. Sack Gabions should be staked down with 3/4" dia. rebar stakes.
10. Flow outlet should be onto a stabilized area (vegetation, rock, etc.).
11. The guidelines shown hereon are suggestions only and may be modified by the Engineer.

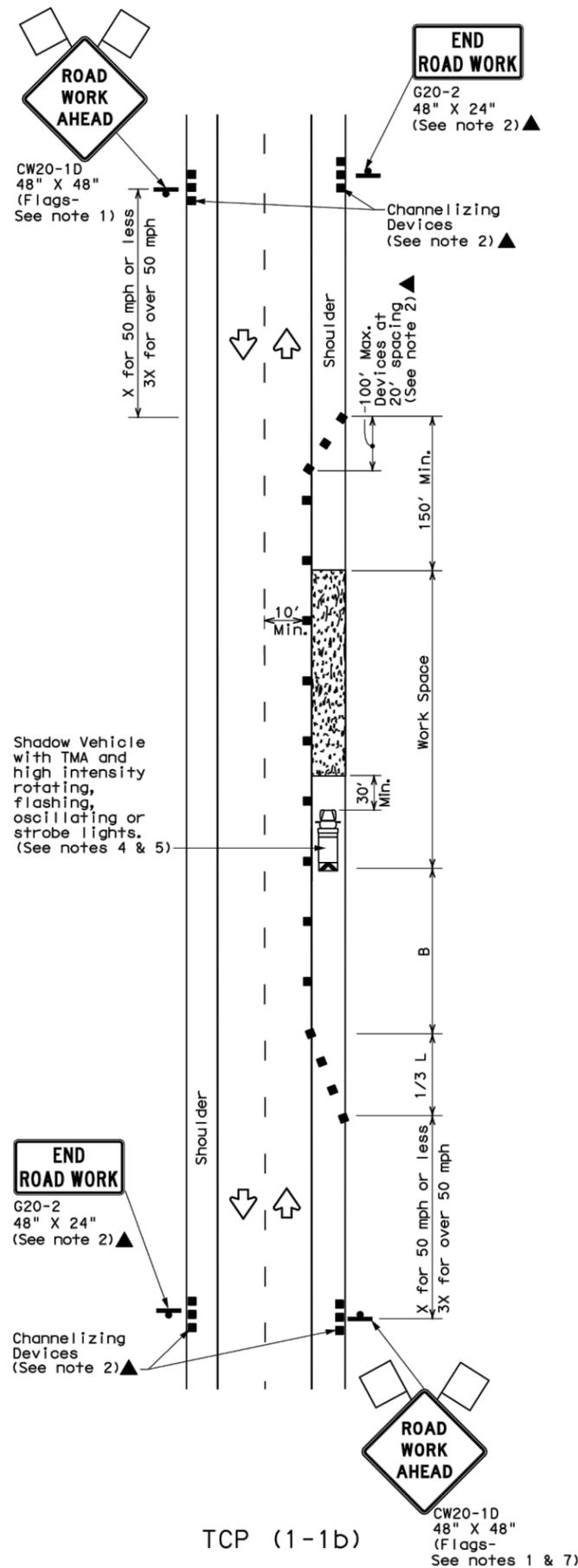
		<b>Design Division Standard</b>	
<b>TEMPORARY EROSION, SEDIMENT AND WATER POLLUTION CONTROL MEASURES</b> <b>ROCK FILTER DAMS</b> <b>EC (2) - 93</b>			
FILE# ec293.dgn	DW: TxDOT	CK: HEJ	DW: BD
© TxDOT June 1993	CONT	SECT	JOB
REVISIONS		HIGHWAY	
DIST		COUNTY	
		SHEET NO.	

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.



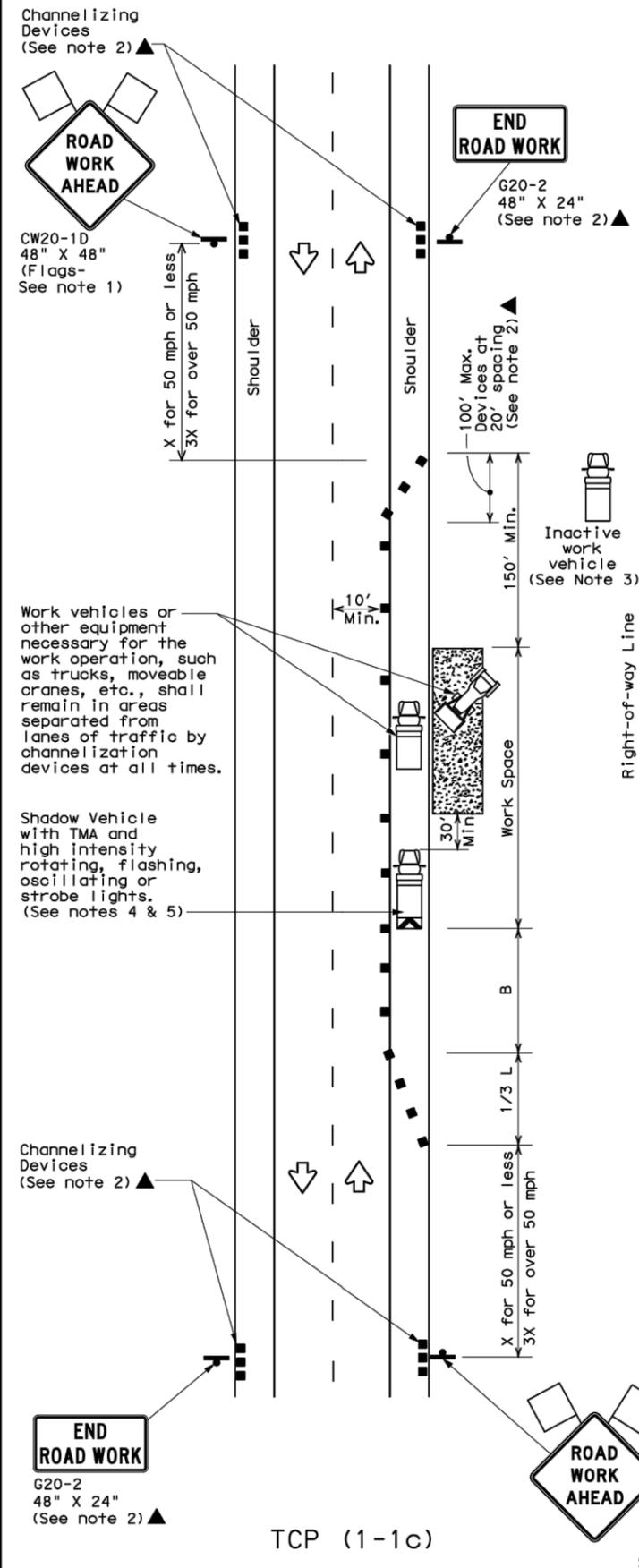
TCP (1-1a)

WORK SPACE NEAR SHOULDER  
Conventional Roads



TCP (1-1b)

WORK SPACE ON SHOULDER  
Conventional Roads



TCP (1-1c)

WORK VEHICLES ON SHOULDER  
Conventional Roads

LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board		Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L=WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

\* Conventional Roads Only  
\*\* Taper lengths have been rounded off.  
L=Length of Taper (FT) W=Width of Offset (FT) S=Posted Speed (MPH)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓		

GENERAL NOTES

- Flags attached to signs where shown are REQUIRED.
- All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
- Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
- A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
- Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.
- See TCP(5-1) for shoulder work on divided highways, expressways and freeways.
- CW21-5 "SHOULDER WORK" signs may be used in place of CW20-1D "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.

For construction or maintenance contract work, specific project requirements for shadow vehicles can be found in the project GENERAL NOTES for Item 502, Barricades, Signs and Traffic Handling.

Texas Department of Transportation  
Traffic Operations Division

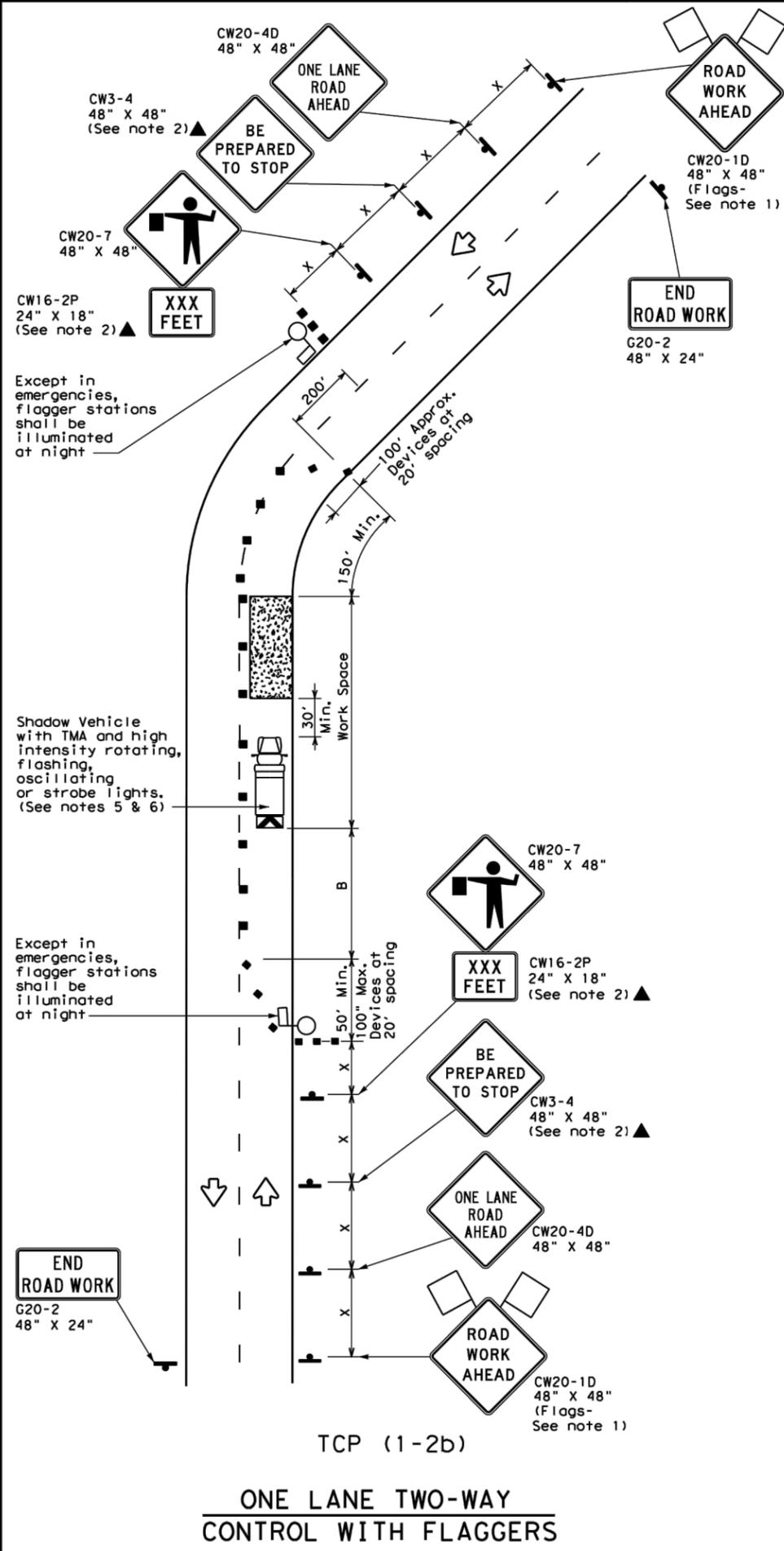
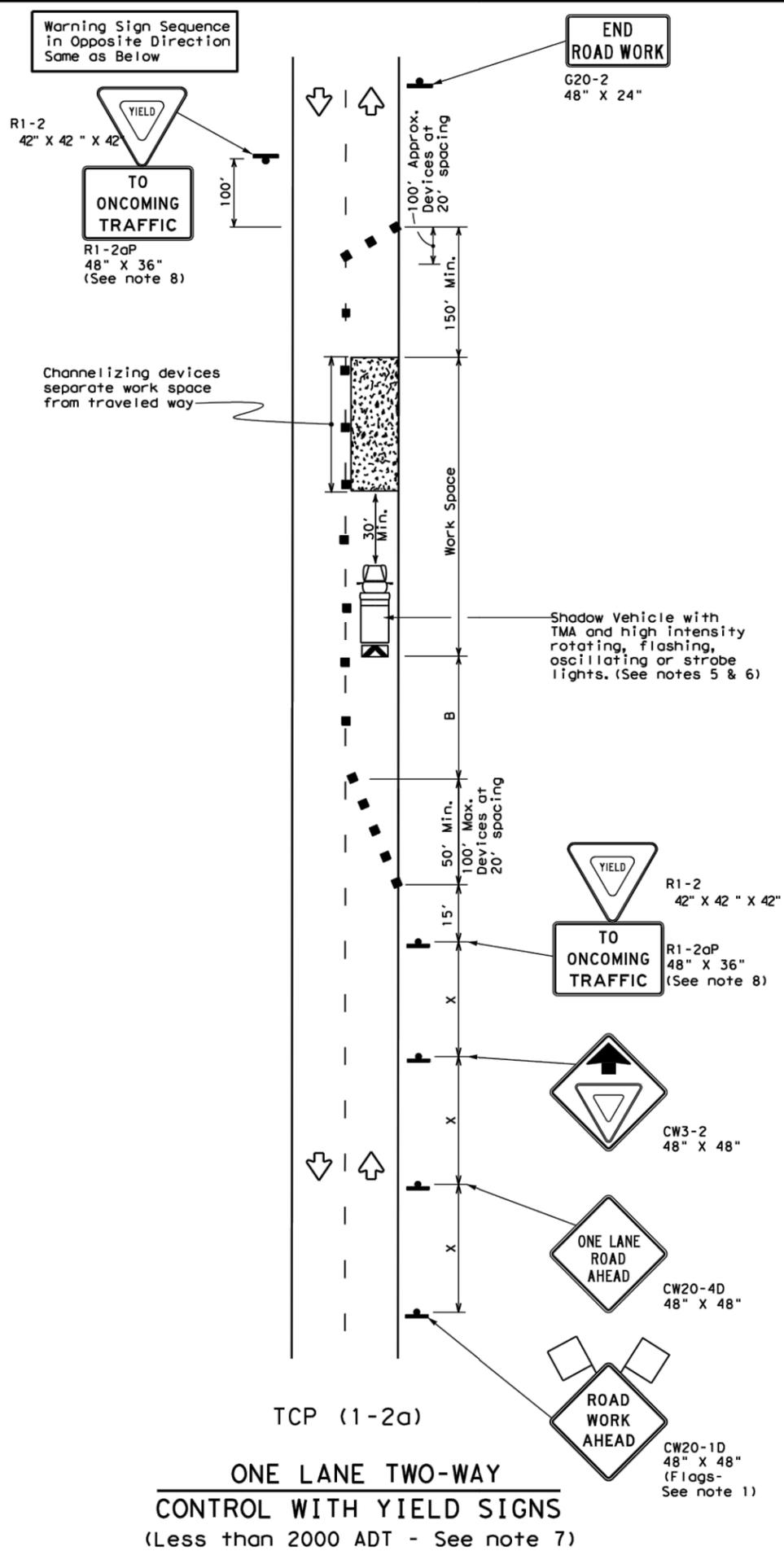
TRAFFIC CONTROL PLAN  
CONVENTIONAL ROAD  
SHOULDER WORK

TCP (1-1)-12

© TxDOT December 1985	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
2-94	2-12	8-95	1-97	4-98
REVISONS	CONT	SECT	JOB	HIGHWAY
	DIST	COUNTY		SHEET NO.

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE: FILE:



LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board		Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "x" Distance	Suggested Longitudinal Buffer Space "B"	Stopping Sight Distance
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent			
30	L = WS <sup>2</sup> / 60	150'	165'	180'	30'	60'	120'	90'	200'
35		205'	225'	245'	35'	70'	160'	120'	250'
40	L = WS	265'	295'	320'	40'	80'	240'	155'	305'
45		450'	495'	540'	45'	90'	320'	195'	360'
50	L = WS	500'	550'	600'	50'	100'	400'	240'	425'
55		550'	605'	660'	55'	110'	500'	295'	495'
60	L = WS	600'	660'	720'	60'	120'	600'	350'	570'
65		650'	715'	780'	65'	130'	700'	410'	645'
70	L = WS	700'	770'	840'	70'	140'	800'	475'	730'
75		750'	825'	900'	75'	150'	900'	540'	820'

\* Conventional Roads Only  
 \*\* Taper lengths have been rounded off.  
 L=Length of Taper (FT) W=Width of Offset (FT) S=Posted Speed (MPH)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓		

**GENERAL NOTES**

- Flags attached to signs where shown are REQUIRED.
  - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
  - The CW3-4 "BE PREPARED TO STOP" sign may be installed after the CW20-4D "ONE LANE ROAD AHEAD" sign, but proper sign spacing shall be maintained.
  - Sign spacing may be increased or an additional CW20-1D "ROAD WORK AHEAD" sign may be used if advance warning ahead of the flagger or R1-2 "YIELD" sign is less than 1500 feet.
  - A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
  - Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.
- TCP (1-2a)**
- R1-2 "YIELD" sign traffic control may be used on projects with approaches that have adequate sight distance. For projects in urban areas, work spaces should be no longer than one half city block. In rural areas on roadways with less than 2000 ADT, work spaces should be no longer than 400 feet.
  - R1-2 "YIELD" sign with R1-2aP "TO ONCOMING TRAFFIC" plaque shall be placed on a support at a 7 foot minimum mounting height.
- TCP (1-2b)**
- Flaggers should use two-way radios or other methods of communication to control traffic.
  - Length of work space should be based on the ability of flaggers to communicate.
  - If the work space is located near a horizontal or vertical curve, the buffer distances should be increased in order to maintain adequate stopping sight distance to the flagger and a queue of stopped vehicles (see table above).
  - Channelizing devices on the center-line may be omitted when a pilot car is leading traffic and approved by the Engineer.
  - Flaggers should use 24" STOP/SLOW paddles to control traffic. Flags should be limited to emergency situations.

For construction or maintenance contract work, specific project requirements for shadow vehicles can be found in the project GENERAL NOTES for Item 502, Barricades, Signs and Traffic Handling.

**Texas Department of Transportation**  
Traffic Operations Division

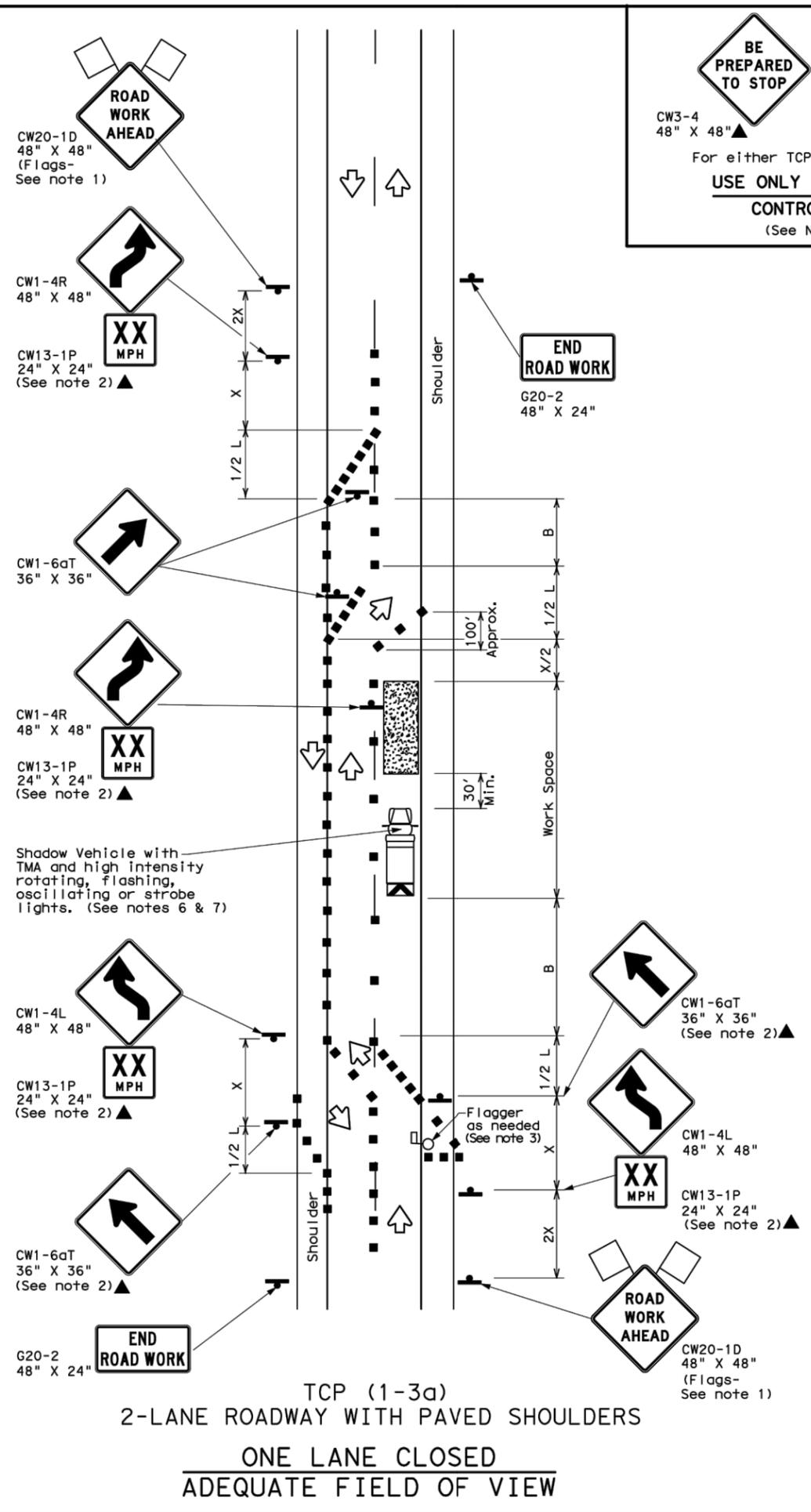
**TRAFFIC CONTROL PLAN**  
**ONE-LANE TWO-WAY**  
**TRAFFIC CONTROL**

**TCP (1-2) - 12**

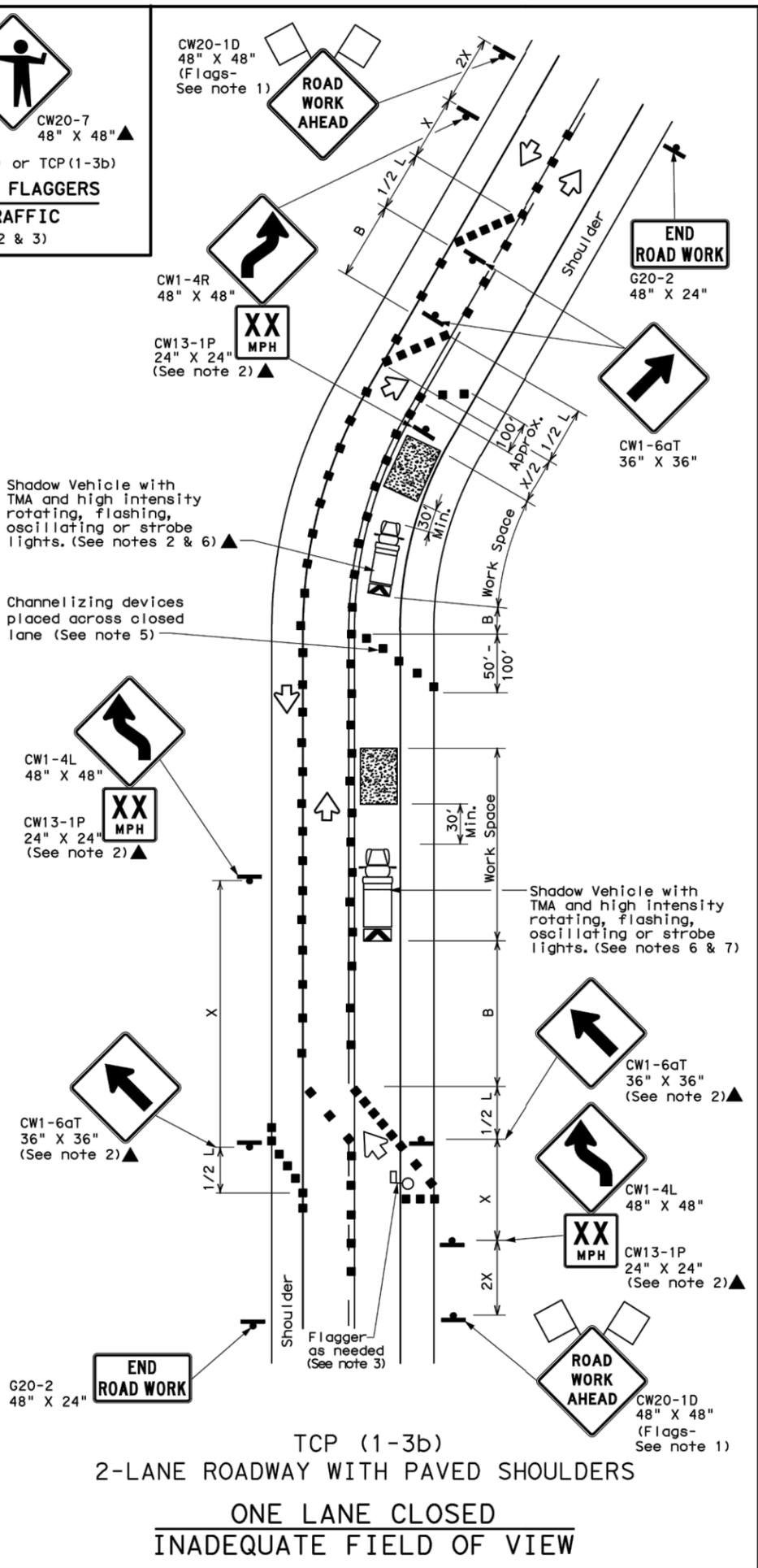
© TxDOT December 1985		DW: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
REVISIONS		CONT	SECT	JOB	HIGHWAY
4-90	2-12				
2-94					
1-97					
4-98					
		DIST	COUNTY	SHEET NO.	

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.

DATE: FILE:



**BE PREPARED TO STOP**   
CW3-4 48" X 48"  CW20-7 48" X 48"   
For either TCP (1-3a) or TCP (1-3b)  
**USE ONLY WHEN FLAGGERS CONTROL TRAFFIC**  
(See Notes 2 & 3)



**LEGEND**

	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board		Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L=WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

\* Conventional Roads Only  
\*\* Taper lengths have been rounded off.  
L=Length of Taper (FT) W=Width of Offset (FT) S=Posted Speed (MPH)

**TYPICAL USAGE**

MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓		

- GENERAL NOTES**
- Flags attached to signs where shown are REQUIRED.
  - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
  - Flagger control should NOT be used unless roadway conditions or heavy traffic volume require additional emphasis to safety control traffic. Additional flaggers may be positioned in advance of traffic queues to alert traffic to reduce speed.
  - DO NOT PASS, PASS WITH CARE and construction regulatory speed zone signs may be installed downstream of the ROAD WORK AHEAD signs.
  - When the work zone is made up of several work spaces, channelizing devices should be placed laterally across the closed lane to re-emphasize closure. Laterally placed channelizing devices should be repeated every 500 to 1000 feet in urban areas and every 1/4 to 1/2 mile in rural areas.
  - A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
  - Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.
  - Where traffic is directed over a yellow centerline, channelizing devices which separate two-way traffic should be spaced on tapers at 20', or 15' if posted speed are 35 mph or slower, and for tangent sections, at 1/2S where S is the speed in mph. This tighter device spacing is intended for the area of conflicting markings not the entire work zone.

For construction or maintenance contract work, specific project requirements for shadow vehicles can be found in the project GENERAL NOTES for Item 502, Barricades, Signs and Traffic Handling.

**Texas Department of Transportation**  
Traffic Operations Division

**TRAFFIC CONTROL PLAN**  
**TRAFFIC SHIFTS ON**  
**TWO LANE ROADS**

TCP (1-3) - 12

© TxDOT December 1985

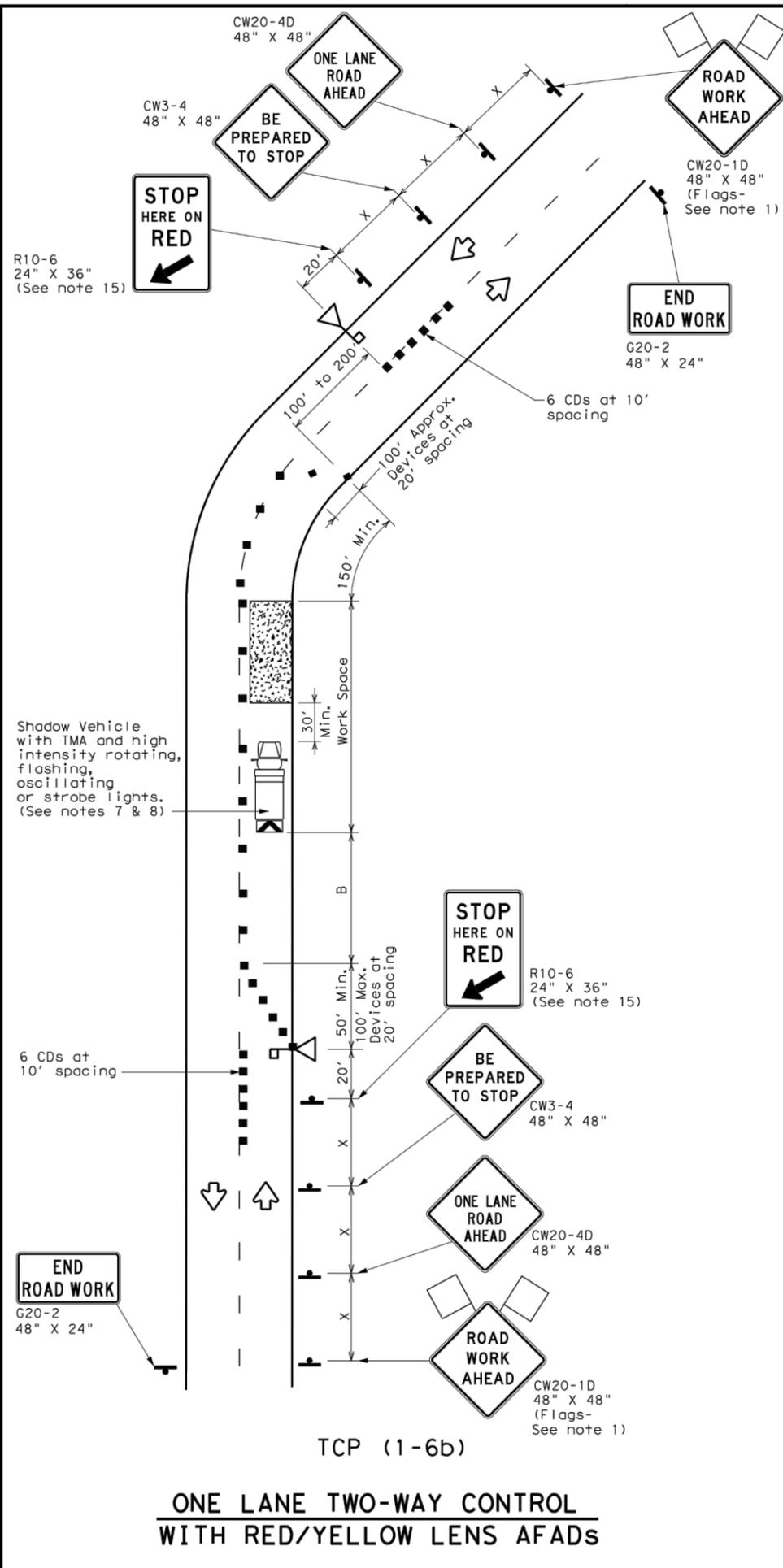
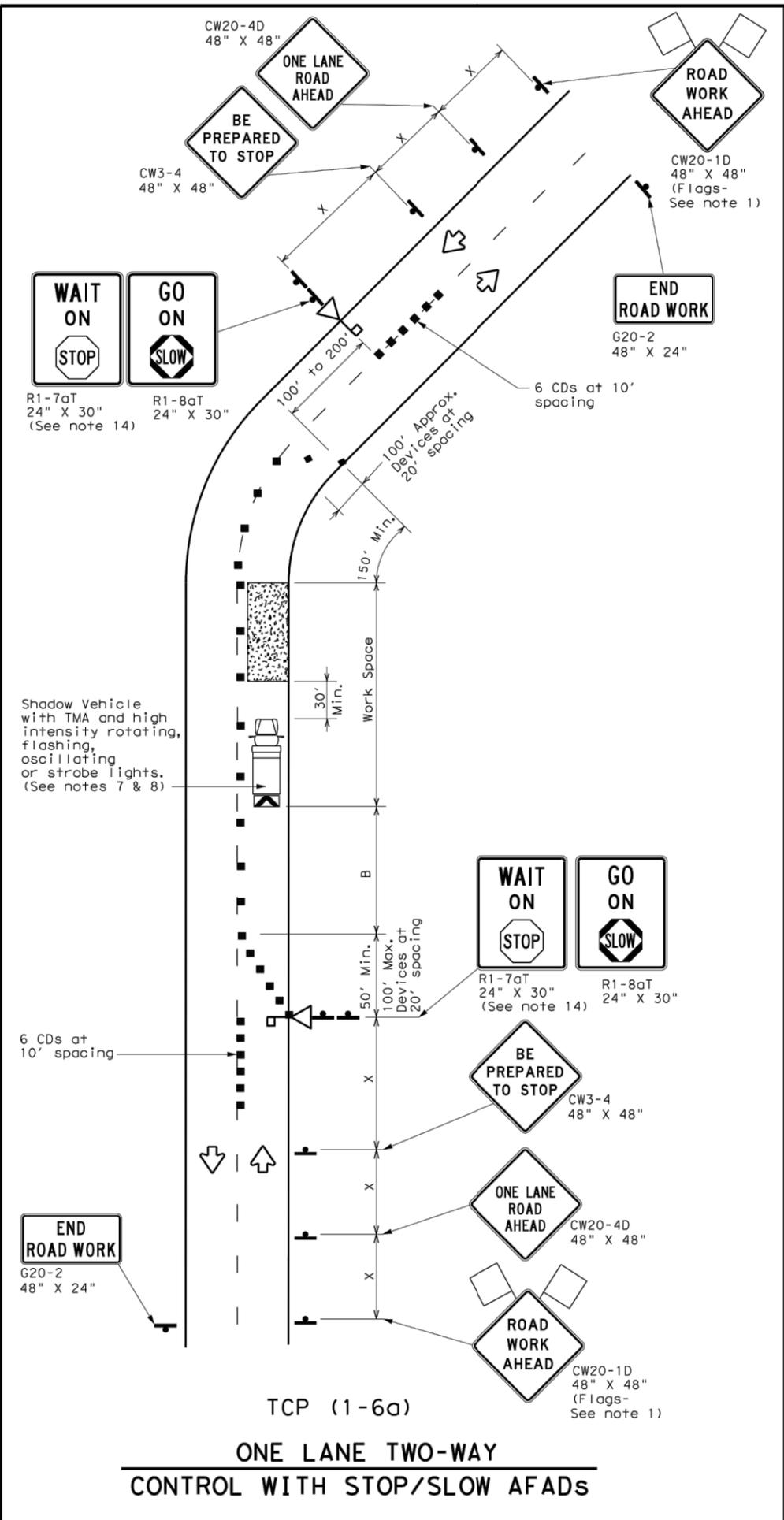
REVISONS	DN# TxDOT	CK# TxDOT	DW# TxDOT	CK# TxDOT
2-94				
8-95				
1-97				
4-98				

DIST COUNTY SHEET NO.

153

W-201411-01

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.



**LEGEND**

	Type 3 Barricade		Channelizing Devices (CDs)
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Automated Flagger Assistance Device (AFAD)		Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "x" Distance	Suggested Longitudinal Buffer Space "B"	Stopping Sight Distance
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent			
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'	200'
35		205'	225'	245'	35'	70'	160'	120'	250'
40		265'	295'	320'	40'	80'	240'	155'	305'
45	$L = WS$	450'	495'	540'	45'	90'	320'	195'	360'
50		500'	550'	600'	50'	100'	400'	240'	425'
55		550'	605'	660'	55'	110'	500'	295'	495'
60		600'	660'	720'	60'	120'	600'	350'	570'
65		650'	715'	780'	65'	130'	700'	410'	645'
70		700'	770'	840'	70'	140'	800'	475'	730'
75		750'	825'	900'	75'	150'	900'	540'	820'

\* Conventional Roads Only  
 \*\* Taper lengths have been rounded off.  
 L=Length of Taper (FT) W=Width of Offset (FT) S=Posted Speed (MPH)

**TYPICAL USAGE**

MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓		

**GENERAL NOTES**

- Flags attached to signs where shown are REQUIRED.
- AFADs shall only be used in situations where there is one lane of approaching traffic in the direction to be controlled.
- Adequate stopping sight distance must be provided to each AFAD location for approaching traffic. (See table above).
- Each AFAD shall be operated by a qualified/certified flagger. Flaggers operating AFADs shall not leave them unattended while they are in use.
- One flagger may operate two AFADs only when the flagger has an unobstructed view of both AFADs and of the approaching traffic in both directions.
- When pilot cars are used, a flagger controlling traffic shall be located on each approach. AFADs shall not be operated by the pilot car operator.
- All AFADs shall be equipped with gate arms with an orange or fluorescent red-orange flag attached to the end of the gate arm. The flag shall be a minimum of 16" square.
- A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
- Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect wider work spaces.
- Flaggers should use two-way radios or other methods of communication to control traffic.
- Length of work space should be based on the ability of flaggers to communicate.
- If the work space is located near a horizontal or vertical curve, the buffer distances should be increased in order to maintain stopping sight distance to the AFAD.
- Channelizing devices on the center line may be omitted when a pilot car is leading traffic and approved by the Engineer.
- The R1-7aT "WAIT ON STOP" sign and the R1-8aT "GO ON SLOW" sign shall be installed at the AFAD location on separate supports or they may be fabricated as one 48" x 30" sign. They shall not obscure the face of the STOP/SLOW AFAD.
- The R10-6 "STOP HERE ON RED" arrow sign shall be offset so as not to obscure the lenses of the AFAD.

For construction or maintenance contract work, specific project requirements for shadow vehicles can be found in the project GENERAL NOTES for Item 502, Barricades, Signs and Traffic Handling.

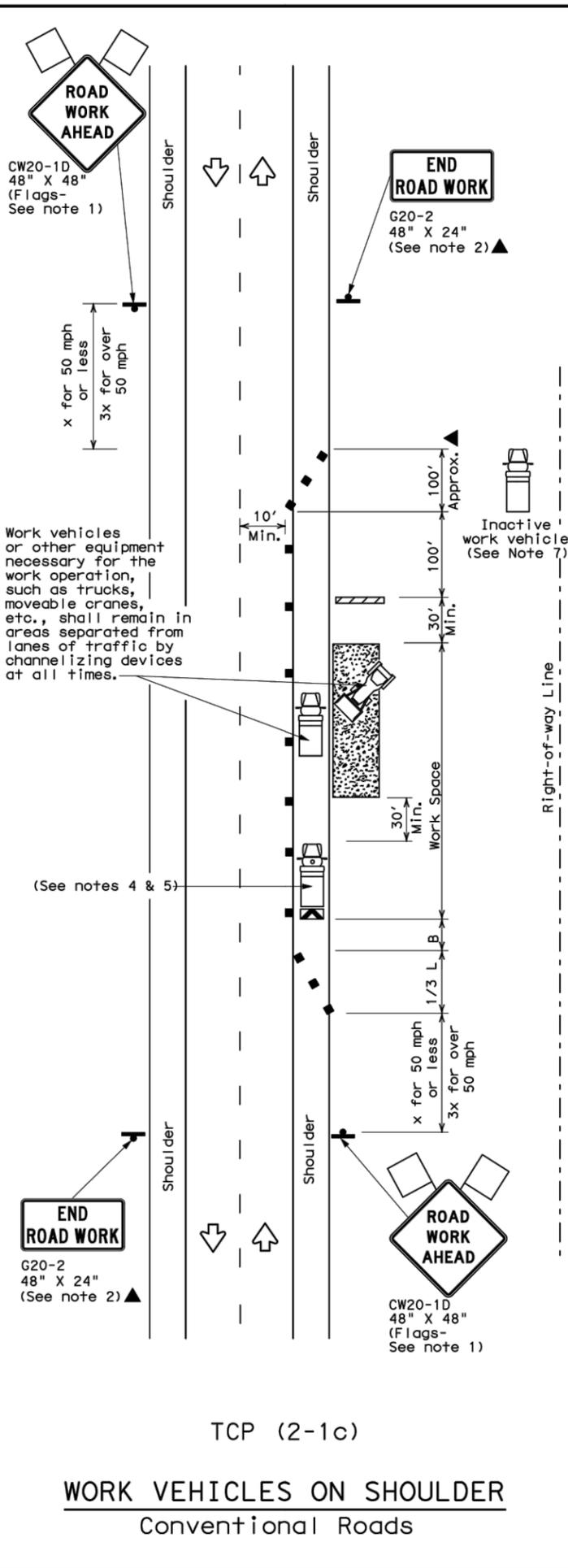
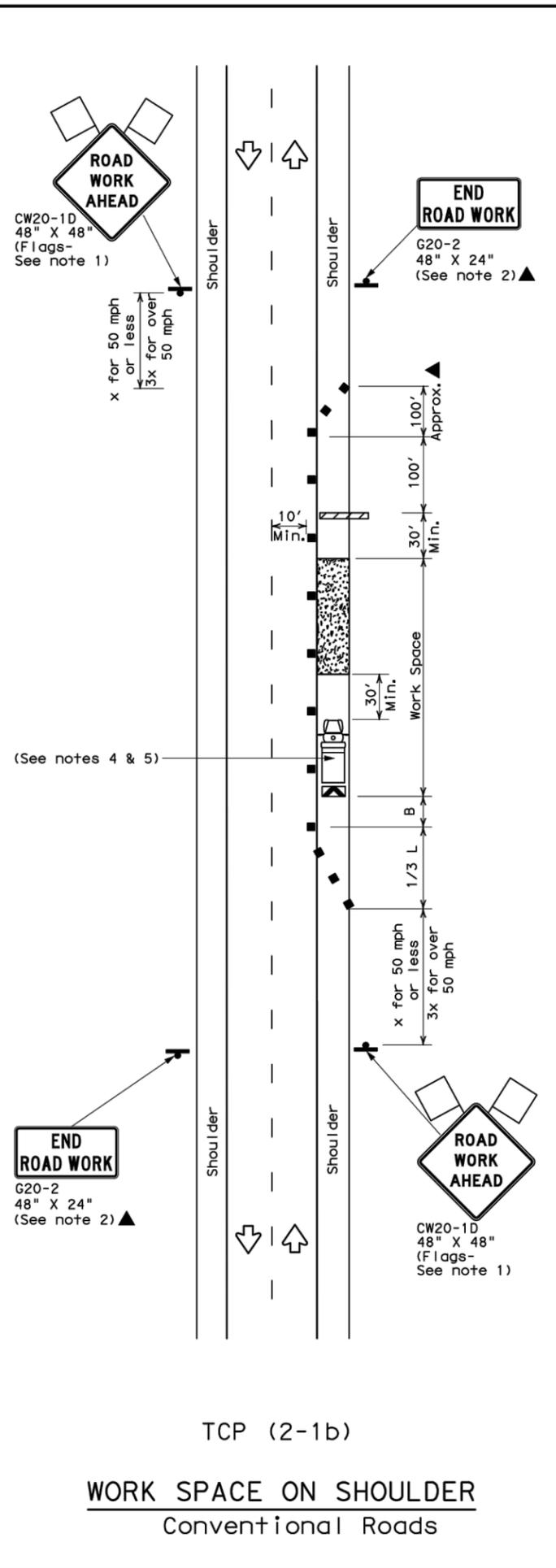
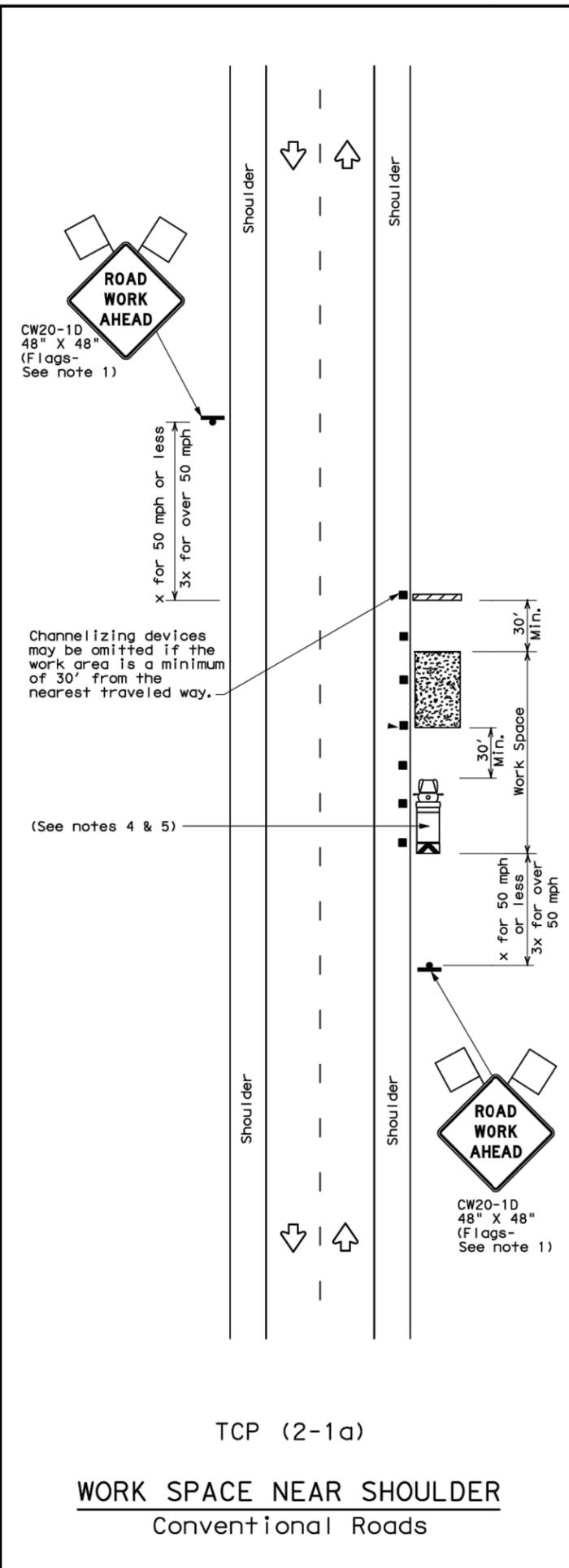
**Texas Department of Transportation**  
Traffic Operations Division

**TRAFFIC CONTROL PLAN**  
**AUTOMATED FLAGGER ASSISTANCE DEVICES (AFADs)**  
**TCP (1-6) - 12**

© TxDOT February 2012

DN# TxDOT	CR# TxDOT	DW# TxDOT	CR# TxDOT
CONTRACT	SECTION	JOB	HIGHWAY
DIST	COUNTY	SHEET NO.	

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.



LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board		Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed *	Formula	Minimum Desirable Taper Lengths **			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent		
30	$L = \frac{WS^2}{60}$	150'	165'	180'	30'	60'	120'	90'
35		205'	225'	245'	35'	70'	160'	120'
40		265'	295'	320'	40'	80'	240'	155'
45	L = WS	450'	495'	540'	45'	90'	320'	195'
50		500'	550'	600'	50'	100'	400'	240'
55		550'	605'	660'	55'	110'	500'	295'
60		600'	660'	720'	60'	120'	600'	350'
65		650'	715'	780'	65'	130'	700'	410'
70		700'	770'	840'	70'	140'	800'	475'
75		750'	825'	900'	75'	150'	900'	540'

\* Conventional Roads Only  
 \*\* Taper lengths have been rounded off.  
 L=Length of Taper (FT) W=Width of Offset (FT) S=Posted Speed (MPH)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓	✓	✓

- GENERAL NOTES**
- Flags attached to signs where shown, are REQUIRED.
  - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated in the plans, or for routine maintenance work, when approved by the Engineer.
  - Stockpiled material should be placed a minimum of 30 feet from nearest traveled way.
  - Shadow Vehicle with TMA and high intensity rotating, flashing, oscillating or strobe lights. A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
  - Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.
  - See TCP(5-1) for shoulder work on divided highways, expressways and freeways.
  - Inactive work vehicles or other equipment should be parked near the right-of-way line and not parked on the paved shoulder.
  - CW21-5 "SHOULDER WORK" signs may be used in place of CW21-1D "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.

For construction or maintenance contract work, specific project requirements for shadow vehicles can be found in the project GENERAL NOTES for Item 502, Barricades, Signs and Traffic Handling.

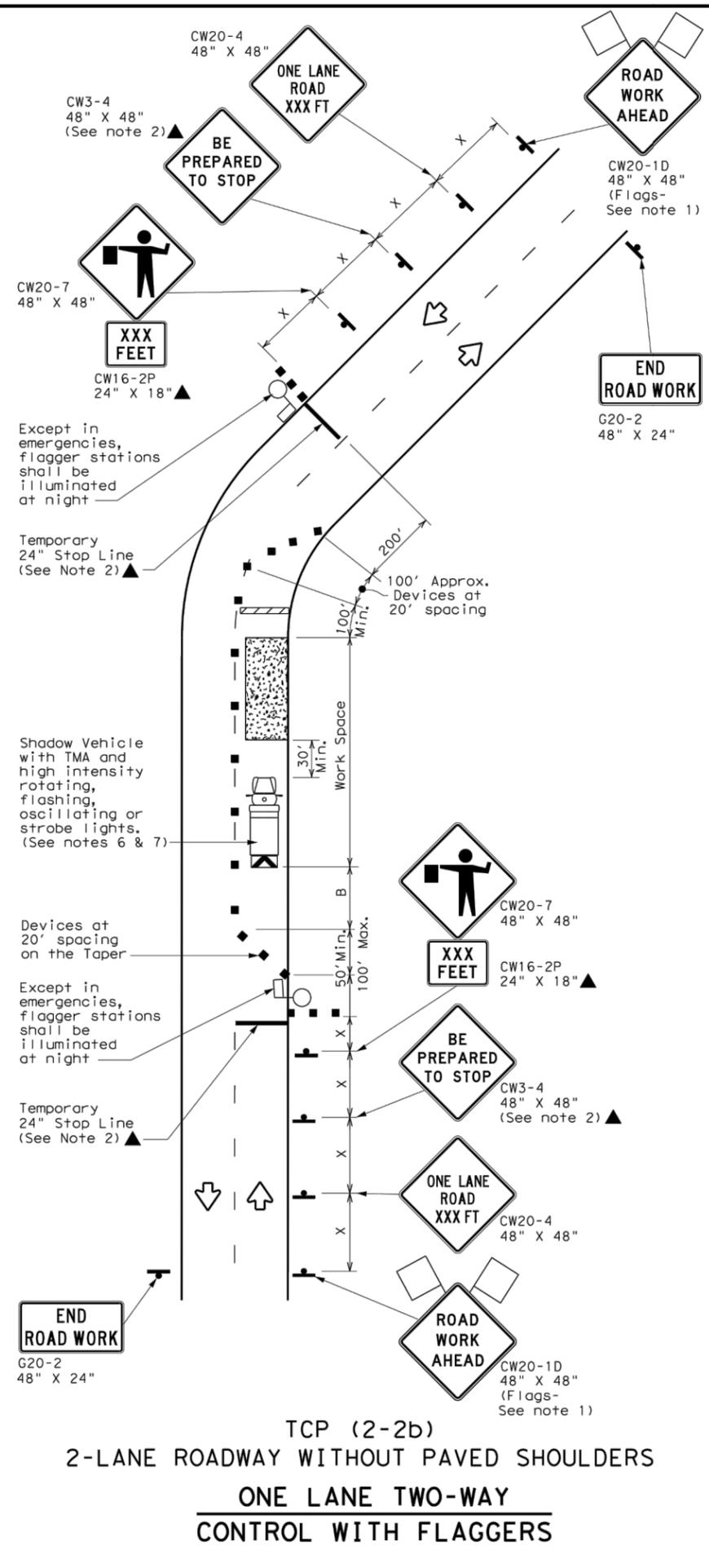
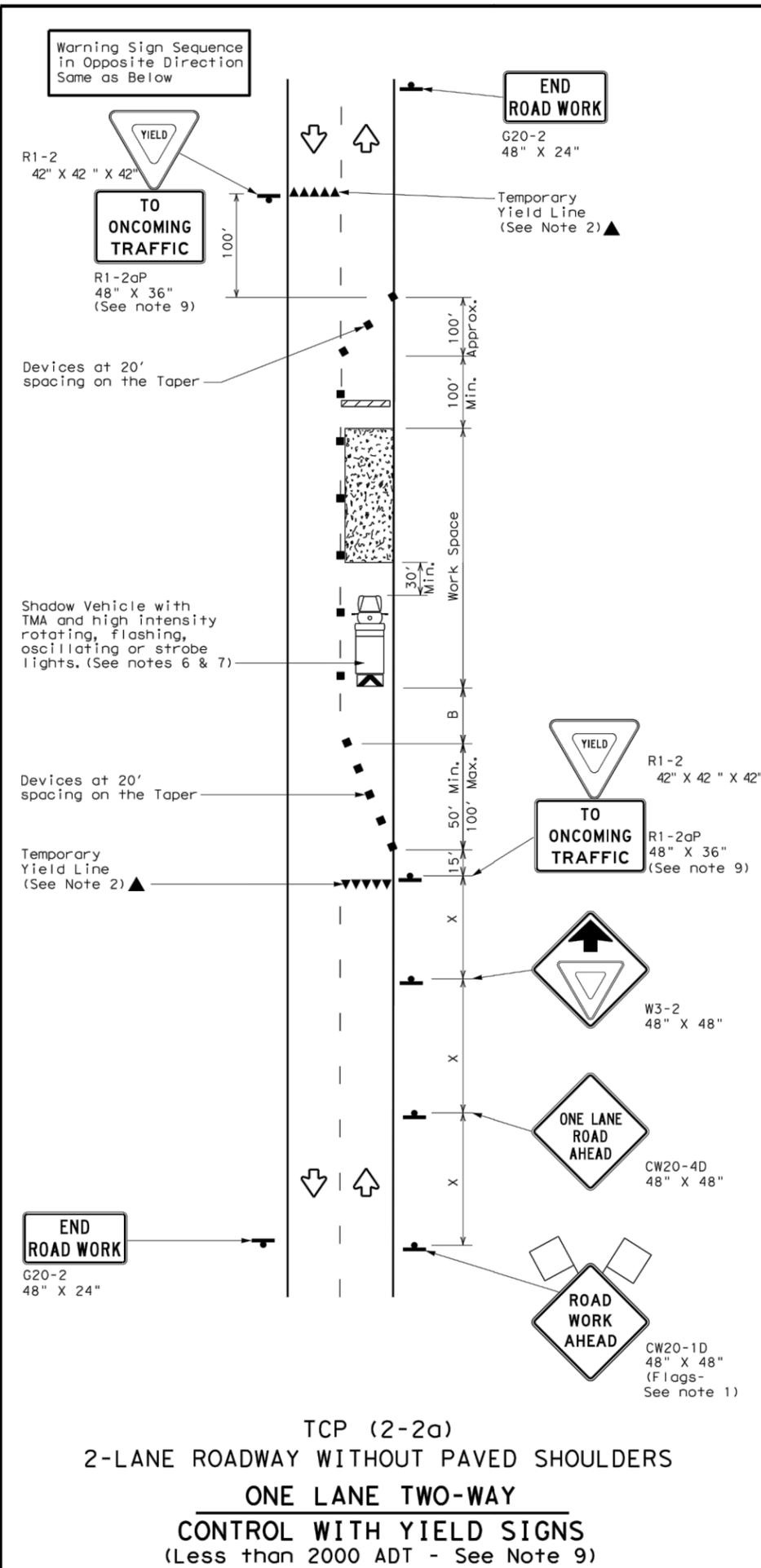
Texas Department of Transportation  
Traffic Operations Division

TRAFFIC CONTROL PLAN  
CONVENTIONAL ROAD  
SHOULDER WORK

TCP (2-1)-12

© TxDOT December 1985		DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: TxDOT
2-94	2-12	CONT	SECT	JOB	HIGHWAY
8-95					
1-97		DIST	COUNTY		SHEET NO.
4-98					

DISCLAIMER: The use of this standard is governed by the "Texas Engineering Practice Act". No warranty of any kind is made by TxDOT for any purpose whatsoever. TxDOT assumes no responsibility for the conversion of this standard to other formats or for incorrect results or damages resulting from its use.



LEGEND			
	Type 3 Barricade		Channelizing Devices
	Heavy Work Vehicle		Truck Mounted Attenuator (TMA)
	Trailer Mounted Flashing Arrow Board		Portable Changeable Message Sign (PCMS)
	Sign		Traffic Flow
	Flag		Flagger

Posted Speed * X	Formula L = WS <sup>2</sup> / 60	Minimum Desirable Taper Lengths * X			Suggested Maximum Spacing of Channelizing Devices		Minimum Sign Spacing "X" Distance	Suggested Longitudinal Buffer Space "B"	Stopping Sight Distance
		10' Offset	11' Offset	12' Offset	On a Taper	On a Tangent			
30	L = WS <sup>2</sup> / 60	150'	165'	180'	30'	60'	120'	90'	200'
35		205'	225'	245'	35'	70'	160'	120'	250'
40		265'	295'	320'	40'	80'	240'	155'	305'
45	L = WS	450'	495'	540'	45'	90'	320'	195'	360'
50		500'	550'	600'	50'	100'	400'	240'	425'
55		550'	605'	660'	55'	110'	500'	295'	495'
60		600'	660'	720'	60'	120'	600'	350'	570'
65		650'	715'	780'	65'	130'	700'	410'	645'
70		700'	770'	840'	70'	140'	800'	475'	730'
75		750'	825'	900'	75'	150'	900'	540'	820'

\* Conventional Roads Only  
 \*\* Taper lengths have been rounded off.  
 L=Length of Taper (FT) W=Width of Offset (FT) S=Posted Speed (MPH)

TYPICAL USAGE				
MOBILE	SHORT DURATION	SHORT TERM STATIONARY	INTERMEDIATE TERM STATIONARY	LONG TERM STATIONARY
	✓	✓	✓	

- GENERAL NOTES**
- Flags attached to signs where shown, are REQUIRED.
  - All traffic control devices illustrated are REQUIRED, except those denoted with the triangle symbol may be omitted when stated elsewhere in the plans, or for routine maintenance work, when approved by the Engineer.
  - The CW3-4 "BE PREPARED TO STOP" sign may be installed after the CW20-4 "ONE LANE ROAD XXX FT" sign, but proper sign spacing shall be maintained.
  - Flaggers should use two-way radios or other methods of communication to control traffic.
  - Length of work space should be based on the ability of flaggers to communicate.
  - A Shadow Vehicle with a TMA should be used anytime it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the performance or quality of the work. If workers are no longer present but road or work conditions require the traffic control to remain in place, Type 3 Barricades or other channelizing devices may be substituted for the Shadow Vehicle and TMA.
  - Additional Shadow Vehicles with TMAs may be positioned off the paved surface, next to those shown in order to protect a wider work space.
- TCP (2-2a)**
- The R1-2 "YIELD" sign traffic control may be used on projects with approaches that have adequate sight distance. For projects in urban areas, work space should be no longer than one half city block. In rural areas, roadways with less than 2000 ADT, work space should be no longer than 400 feet.
  - The R1-2aP "YIELD TO ONCOMING TRAFFIC" sign shall be placed on a support at a 7 foot minimum mounting height.
- TCP (2-2b)**
- Channelizing devices on the center line may be omitted when a pilot car is leading traffic and approved by the Engineer.
  - If the work space is located near a horizontal or vertical curve, the buffer distances should be increased in order to maintain stopping sight distance to the flagger and a queue of stopped vehicles. (See table above).
  - Flaggers should use 24" STOP/SLOW paddles to control traffic. Flags should be limited to emergency situations.

For construction or maintenance contract work, specific project requirements for shadow vehicles can be found in the project GENERAL NOTES for Item 502, Barricades, Signs and Traffic Handling.



**TRAFFIC CONTROL PLAN  
 ONE-LANE TWO-WAY  
 TRAFFIC CONTROL**

TCP (2-2) - 12

© TxDOT December 1985	DN: TxDOT	CK: TxDOT	DW: TxDOT	CR: TxDOT
8-95	2-12	CONT	SECT	JOB
1-97		DIST	COUNTY	SHEET NO.
4-98				
3-03				