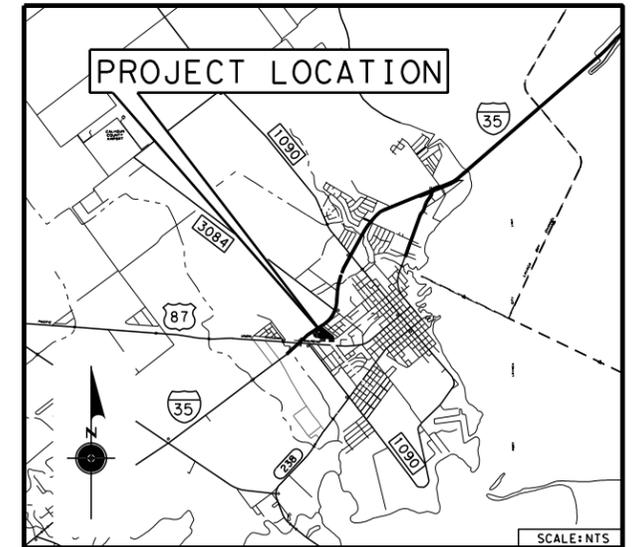


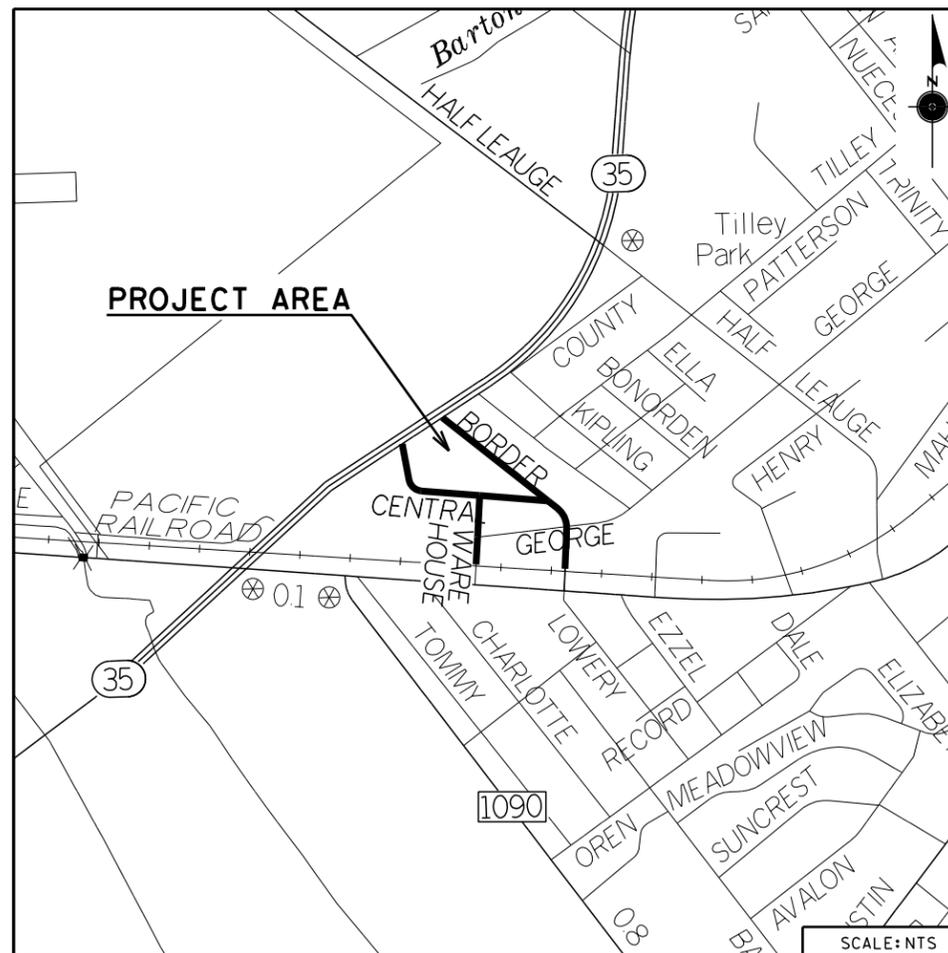
# City of Port Lavaca



## WESTERN HEIGHTS STREET, DRAINAGE, AND WATER IMPROVEMENT PROJECT PORT LAVACA, TEXAS



VICINITY MAP



PROJECT LAYOUT MAP

MAYOR

JACK WHITLOW

COUNCIL PERSONS

DANIEL AGUIRRE

TIM DENT

ROSIE PADRON

ROSE BLAND-STEWART

JUSTIN BURKE

CITY MANAGER

JODY WEAVER, P.E.

PUBLIC WORKS DIRECTOR

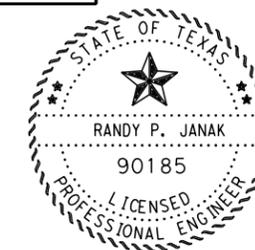
WILLIAM W. SHAFFER

INDEX OF SHEETS

| SHEET NO. | DESCRIPTION  |
|-----------|--|
| 1         | COVER SHEET  |
| 2-3       | GENERAL NOTES  |
| 4         | TYPICAL SECTIONS   |
| 5         | OVERALL PAVING PROJECT LAYOUT                                |
| 6         | TRAFFIC CONTROL PLAN   |
| 7-8       | PROJECT CONTROL MAP  |
| 9-12      | PAVING, SIDEWALK, WATER/SEWER/STORM, MISC & DRIVEWAY SUMMARY |
| 12-14     | EARTHWORK SUMMARIES  |
| 15-17     | DRIVEWAY, SIDEWALK AND DITCH DRAIN DETAILS                   |
| 18-24     | ROADWAY PLAN AND PROFILES                                    |
| 18-29     | UTILITY PLANS  |
| 30-31     | INTERSECTION LAYOUT  |
| 32        | DRAINAGE AREA MAP  |
| 33        | HYDRAULIC DATA   |
| 34        | SW3P   |
| 35-36     | SW3P SUMMARY & DETAILS                                       |
| 37        | STORM SEWER DETAILS  |
| 38        | WATER DETAIL SHEET   |
| 39        | SANITARY SEWER DETAIL SHEET                                  |

STANDARDS

|       |                                      |
|-------|--------------------------------------|
| 40    | CCCG-22                              |
| 41-44 | PED-18                               |
| 45    | PRECAST BASE - TYPE PB               |
| 46    | PRECAST ROUND MANHOLE                |
| 47-48 | PRECAST SLAB LID                     |
| 49-50 | PRECAST CURB INLET - OUTSIDE ROADWAY |
| 51    | CURB & GUTTER TRANSITION DETAILS     |
| 52    | SMD(GEN)-08                          |
| 53-55 | SMD(SLIP-1)-08 THRU SMD(SLIP-3)-08   |
| 56    | TCP (2-1)-18                         |
| 57    | TCP (2-2)-18                         |
| 58    | WORK ZONE ROAD CLOSURE DETAILS       |
| 59-70 | BC(1) THRU BC(21)                    |
| 71    | CONCRETE VALLEY GUTTER DETAIL        |



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DATE: 2/24/2026



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SPECIFICATION DATA  
TESTS TO BE IN ACCORDANCE WITH TEXAS DEPARTMENT OF  
TRANSPORTATION STANDARD TEST METHODS

Flexible Base Specification Data

TYPE A, GRADE 2  
AS SHOWN IN ITEM 247, TEXAS STANDARD SPECIFICATIONS, 2014

-----  
ESTIMATED WEIGHT - LIMESTONE BASE  
247 LIMESTONE BASE (TY A)----- 1.9 TONS/CY

THE CONTRACTOR'S ATTENTION IS DIRECTED TO UTILITIES EXISTING IN OR NEAR WORK AREAS OF THIS PROJECT. ANY UTILITIES THAT ARE ENCOUNTERED BY THE CONTRACTOR SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER.

THE CONTRACTOR SHALL GIVE NOTICE TO ALL PRIVATE UTILITIES AFFECTED BY OPERATIONS PRIOR TO STARTING WORK.

ANY DAMAGE TO UTILITIES INCURRED DUE TO THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ALL EXISTING CURBS, PAVEMENT, LANDSCAPING, ETC., WHICH ARE DAMAGED DURING CONSTRUCTION OPERATIONS, TO A CONDITION AND TEXTURE AS GOOD OR BETTER THAN PREVIOUSLY EXISTED, AS DIRECTED BY THE ENGINEER. IF SUCH DAMAGE OCCURS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE REPAIR OF THE DAMAGED ITEMS.

CONTRACTOR SHALL RETURN LANDSCAPE FEATURES (INCLUDING PLANTINGS, STRUCTURES, EDGING, MATERIALS, ETC.) THAT ARE DAMAGED DURING CONSTRUCTION TO THEIR PRE-CONSTRUCTION CONDITION. LABOR AND MATERIALS INVOLVED IN THIS WORK WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS OF THE CONTRACT.

ALL SAW-CUTS SHALL BE PERPENDICULAR OR PARALLEL TO THE DIRECTION OF TRAFFIC. SAWED EDGES SHALL BE CLEANED AND SHALL NOT HAVE A JAGGED APPEARANCE OR CHUNKS BROKEN OUT. SAW-CUTS SHALL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS.

ACCESS TO ALL RESIDENCES SHALL BE PROVIDED AT ALL TIMES. MATERIALS, LABOR AND MAINTENANCE TO PROVIDE TEMPORARY ACCESS DRIVEWAYS WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS.

THE CONTRACTOR SHALL MAKE EVERY EFFORT TO PRESERVE TREES AND SHRUBS WITHIN THE RIGHT OF WAY. OBTAIN PRIOR APPROVAL FORM THE ENGINEER BEFORE ANY TREES ARE REMOVED.

CONTRACTOR SHALL SECURE AND PAY FOR ALL APPLICABLE PERMITS AND LICENSES OF A TEMPORARY NATURE NECESSARY FOR THE PROSECUTION OF THIS WORK.

CONTRACTOR SHALL VERIFY PAVEMENT ELEVATIONS AND OBTAIN OWNERS' APPROVAL PRIOR TO PLACEMENT OF PAVEMENT. CONTRACTOR OR OWNER SHALL NOTIFY ENGINEER IMMEDIATELY WITH ANY CONFLICTS OR DISCREPANCIES NOTED. IF NO VERIFICATION OR APPROVAL IS OBTAINED, CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY FOR CONSTRUCTED AREAS.

CONTRACTOR SHALL COVER OPEN EXCAVATIONS WITHIN ROAD/RIGHT-OF-WAYS WITH ANCHORED STEEL PLATES DURING NON-WORKING HOURS AND OPEN ALL LANES FOR TRAFFIC BY THE END OF THE WORK DAY.

ALL AREAS WITHIN THE PROJECT LIMITS SHALL BE GRADED TO ENSURE POSITIVE DRAINAGE. ALL DISTURBED GRASS AREAS SHALL BE SODDED OR SEEDED PER THE PLANS TO MATCH EXISTING CONDITIONS. ADEQUATE DRAINAGE SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION.

THE CONTRACTOR WILL BE REQUIRED TO PLUG ALL HOLES IN EXISTING STORM SEWER LINES AND MANHOLES CAUSED BY THE REMOVAL OF INCIDENTAL SEWER APPURTENANCES. MATERIALS AND METHOD OF PLUGGING HOLES WILL BE AS APPROVED AND DIRECTED BY THE ENGINEER. NO DIRECT PAYMENT WILL BE MADE FOR THESE MATERIALS AND THE WORK SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS OF THE CONTRACT.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE TEMPORARY PIPE DRAINS OR CULVERTS AND TO TAKE SUCH OTHER MEASURES AS MAY BE NECESSARY, IN THE OPINION OF THE ENGINEER, TO PROVIDE FOR CONTINUED DRAINAGE FROM ALL ABUTTING PROPERTY, THE RIGHT OF WAY AND THE ROADWAY DURING CONSTRUCTION OPERATIONS. LABOR AND MATERIALS INVOLVED IN THIS WORK WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS OF THE CONTRACT.

---ITEM 110,132  
GRADING IN THE INTERSECTION AREAS WILL NOT BE PAID FOR DIRECTLY, BUT BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS OF THE CONTRACT.

INTERSECTION DRAINAGE IS PROVIDED AROUND RADII BY CORNER INLETS AND NOT ACROSS ROADWAY. GRADE ROADWAY SURFACE AT INTERSECTIONS TO PROVIDE A SMOOTH, UNIFORM TRANSITION FROM THE CROWN SHOWN ON THE TYPICAL SECTIONS THROUGH THE INTERSECTION AREA. PROVIDE POSITIVE DRAINAGE TO CURB ON ALL SIDES AND CORNERS WITH NO VALLEYS AT PROJECTED CURB LINES.

---ITEM 204---  
SPRINKLING FOR DUST CONTROL SHALL BE UTILIZED AS DIRECTED BY THE ENGINEER AND SHALL BE CONSIDERED INCIDENTAL TO THE VARIOUS BID ITEMS.

---ITEM 247---  
LIMESTONE BASE SHALL BE PLACED IN APPROXIMATE EQUAL COURSES NOT TO EXCEED 6 INCHES IN DEPTH, UNLESS OTHERWISE APPROVED BY THE ENGINEER.

---ITEM 316---  
THE COARSE AGGREGATE FOR THE SURFACE COURSE WILL BE TESTED AS FOLLOWS:

FLAKINESS INDEX FOR AGGREGATES WILL NOT BE REQUIRED ON THIS PROJECT.

THE TYPE AND GRADE OF ASPHALT SHALL BE DETERMINED BY THE ENGINEER.

UNLESS OTHERWISE DIRECTED BY THE ENGINEER, DRIVEWAYS AND INTERSECTIONS SHALL BE SEALED BEFORE THE ROADWAY SECTION.

---ITEM 340---  
FINISHED EDGE OF ACP SURFACE ADJACENT TO CURB WILL BE 3/16" TO 1/4" HIGHER THAN LIP OF CURB ELEVATION.

---ITEM 400---  
AGGREGATE USED FOR CEMENT STABILIZED BACKFILL SHALL BE CONCRETE SAND OR SIMILAR MATERIAL, WITH OR WITHOUT COARSE AGGREGATE, ALL AS APPROVED BY THE ENGINEER.

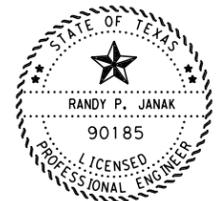
---ITEM 420, 427---  
ALL CONCRETE STRUCTURES SHALL RECEIVE A SURFACE AREA I, CLASS C FINISH IN ACCORDANCE WITH ITEM 427 "SURFACE FINISHES FOR CONCRETE".

---ITEM 421---  
TYPE II CEMENT SHALL BE USED IN ALL CAST-IN-PLACE CONCRETE.

THE ENGINEER WILL SAMPLE ALL CONCRETE AND MAKE AND TEST ALL CYLINDERS IN ACCORDANCE WITH TEST METHODS: TEX-407-A, TEX-418-A, AND TEX-447-A AS DIRECTED BY THE ENGINEER.

ALL LABOR AND EQUIPMENT FURNISHED BY THE CONTRACTOR SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS AND WILL NOT BE PAID FOR DIRECTLY.

---ITEM 464---  
CONCRETE COLLARS MAY BE USED AT ANGLED PIPE JOINTS IN LIEU OF ANGLED PRECAST PIPE JOINTS, AND WILL BE REQUIRED AT SOME OTHER PIPE CONNECTIONS. COLLARS WILL BE FORMED, REINFORCED, CAST IN PLACE CONCRETE AS APPROVED BY THE ENGINEER. COLLARS WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED AS SUBSIDIARY TO ITEM 464.



NAME: Randy P. Janak PE  
DATE: 2/24/2026



**CITY OF PORT LAVACA**  
TEXAS



an ESP COMPANY  
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**WESTERN HEIGHTS STREET  
IMPROVEMENT PROJECT**

**GENERAL NOTES**

SHEET 1 OF 2

|             |           |           |   |
|-------------|-----------|-----------|---|
| PROJECT NO. | 25-015-03 | SHEET NO. | 2 |
| REVISIONS   |           |           |   |
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CONCRETE PIPE MAY ENCROACH INTO LIME STABILIZED SUBGRADE AND/OR PAVEMENT REPAIR SECTIONS IN SOME AREAS. CONTRACTOR IS TO EXERCISE CAUTION WHILE WORKING IN THESE AREAS SO AS TO NOT DAMAGE PIPE. PLACE CEMENT STABILIZED SAND OVER STORM PIPE TO EXTEND UP TO THE BOTTOM OF SUBGRADE IN THESE AREAS

---ITEM 465---

ALL STORM DRAIN JUNCTION BOXES SHALL HAVE PRECAST BASE (PB STANDARD) WITH ROUND REDUCED RISER AND 32 INCH DIAMETER RING AND COVER (PRM STANDARD), OR SQUARE REDUCED RISER AND 32 INCH DIAMETER RING AND COVER (PSL STANDARD-STYLE RH), AS APPROVED BY THE ENGINEER.

THE CONTRACTOR WILL BE REQUIRED TO CAST A HOLE OR HOLES IN THE INLETS CONSTRUCTED BY THE CONTRACTOR FOR DRAINAGE DURING CONSTRUCTION. THE SIZE, NUMBER AND POSITION WILL BE DETERMINED BY THE ENGINEER. THESE HOLES, TOGETHER WITH THOSE CAST IN INLETS CONSTRUCTED BY OTHERS, WILL LATER BE PLUGGED BY THE CONTRACTOR. THIS WORK WILL NOT BE PAID FOR DIRECTLY BUT WILL BE CONSIDERED SUBSIDIARY TO THE VARIOUS BID ITEMS INVOLVED.

---ITEM 479---

STORM SEWER MANHOLE RIMS IN UNPAVED AREAS SHALL BE 3-INCHES ABOVE NATURAL GROUND. BACKFILL SHALL BE ADDED AND SLOPED AWAY FROM THE MANHOLE RIM FOR STORM WATER DRAINAGE. TOP OF STORM MANHOLE RIMS IN PAVED AREAS SHALL BE SET FLUSH WITH THE PAVEMENT SURFACE.

---ITEM 502---

ADDITIONAL SIGNS, BARRICADES AND TRAFFIC HANDLING MAY BE NECESSARY TO COMPLETE THE WORK SHOWN HEREIN AND SHALL BE PROVIDED BY THE CONTRACTOR AS REQUIRED. THIS WORK SHALL BE CONSIDERED SUBSIDIARY TO BID ITEM 502 "BARRICADES SIGNS AND TRAFFIC HANDLING". EXISTING ROADSIDE SIGNS MAY BE RELOCATED TO TEMPORARY SUPPORTS AS APPROVED BY THE ENGINEER.

---ITEM 530---

EXCAVATION AND EMBANKMENT FOR DRIVEWAYS SHALL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO THIS ITEM.

FOR TIE-IN OF PROPOSED AND EXISTING CONCRETE PAVEMENTS, SAW JOINT THE EXISTING CONCRETE PAVEMENT SUFFICIENT TO EXPOSE 15 INCHES OF REINFORCING STEEL. IF NO REINFORCING EXISTS, USE HORIZONTAL DOWELS. THE HORIZONTAL DOWELS SHALL BE NO. 6 BARS, 24-INCH LONG, DRILLED AND EMBEDDED 8 INCHES INTO THE CENTER OF THE EXISTING SLAB WITH "PO ROC" OR EQUAL. DOWELS SHALL BE 24 INCHES CENTER TO CENTER, UNLESS OTHERWISE NOTED.

PLACE EXPANSION JOINT AT PROPERTY/ROW LINE FOR ALL RECONSTRUCTED DRIVEWAYS.

---ITEM 531---

SIDEWALK LOCATION MAY BE VARIED UP TO TWO FEET WITHIN THE RIGHT OF WAY IN ORDER TO AVOID CONFLICT WITH EXISTING TREES. CONTRACTOR SHALL NOT REMOVE ANY TREE THAT IS NOT SPECIFICALLY CALLED OUT FOR REMOVAL ON THE PLANS, WITHOUT PERMISSION FROM THE ENGINEER. ANY TREES TO REMAIN THAT ARE DAMAGED BY THE CONTRACTOR DURING OPERATIONS SHALL BE REPLACED LIKE IN KIND AS APPROVED BY THE ENGINEER.

SIDEWALK WITH CURB IS SPECIFIED AT CERTAIN LOCATIONS AND IS A SEPARATE PAY ITEM FROM SIDEWALK WITHOUT CURB. CURB IS ALSO REQUIRED ON RAMPS AT CERTAIN LOCATIONS AS SHOWN. RAMPS (INCLUDING LANDING PORTIONS) REQUIRING CURB WILL NOT BE MEASURED SEPARATELY FOR PAYMENT BUT WILL BE PAID FOR AS RAMPS BY THE EACH.

A DETAIL IS PROVIDED FOR RESIDENTIAL ENTRY SIDEWALKS WITH STEPS. SIDEWALK WITH STEPS ARE CONSIDERED SUBSIDIARY AND NO ADDITIONAL/SEPARATE PAYMENT WILL BE PROVIDED.

---ITEM 560---

MAILBOX TEMPORARY RELOCATION SHALL BE AS DIRECTED BY THE ENGINEER, AND MAY INCLUDE TRANSPORTATION OF MAILBOX ASSEMBLIES TO LOCATIONS NOT ON STATE OR CITY R.O.W. SOME OF THE EXISTING MAILBOX ASSEMBLIES ARE EQUIPPED WITH A "NEWSPAPER BOX". IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO REMOVE AND REPLACE THESE ON THE NEW MAILBOX ASSEMBLIES. THIS WORK WILL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED SUBSIDIARY TO THIS ITEM.

---ITEM 644---

EXISTING ROADSIDE SIGNS SHALL BE RELOCATED ON TEMPORARY SUPPORTS AND RELOCATED AS APPROVED BY THE ENGINEER. THIS WORK WILL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED SUBSIDIARY TO THE VARIOUS ITEMS OF THE CONTRACT.



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DATE: 2/24/2026



CITY OF PORT LAVACA  
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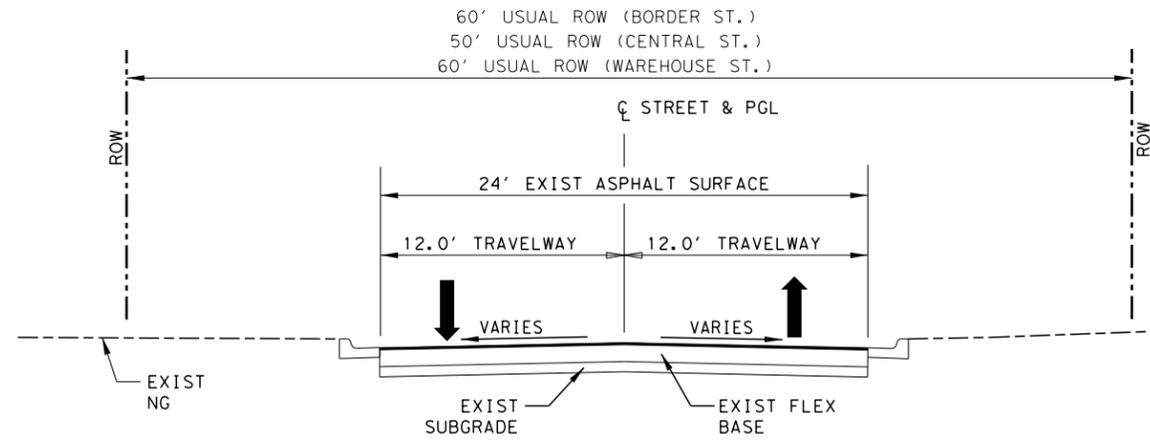
WESTERN HEIGHTS STREET  
IMPROVEMENT PROJECT

GENERAL NOTES

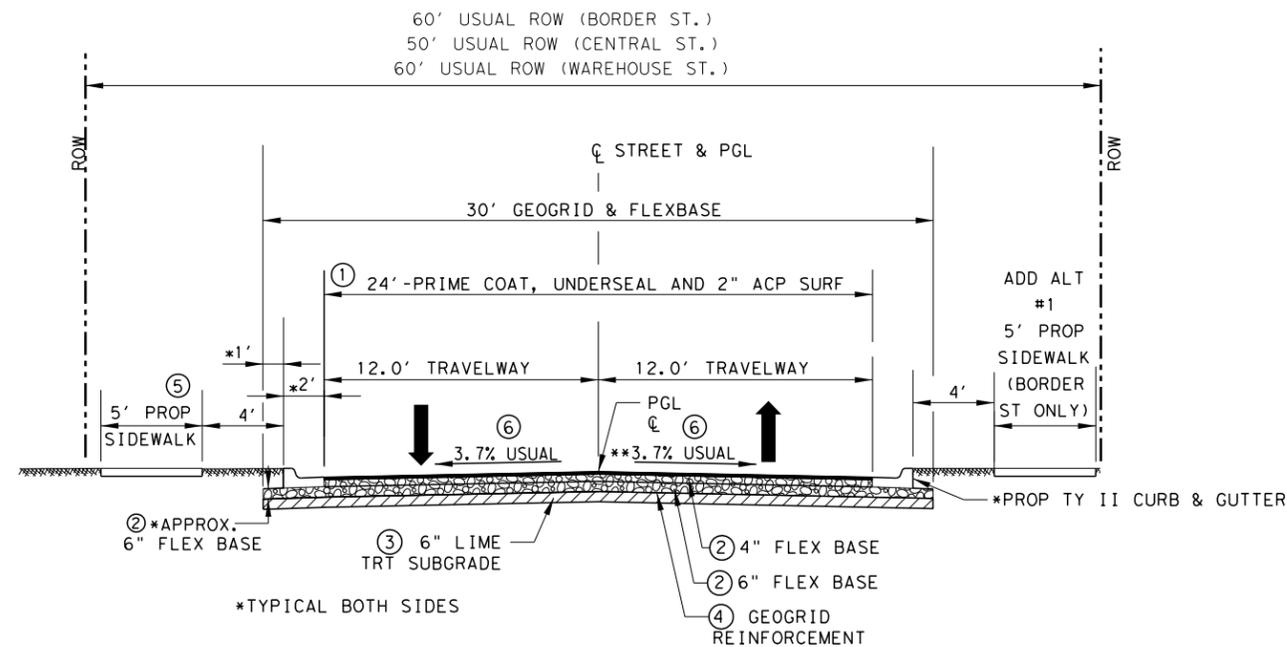
SHEET 2 OF 2

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| PROJECT NO. | 25-015-03 | SHEET NO. | 3 |
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**EXISTING TYPICAL SECTION**



**PROPOSED TYPICAL SECTION**

BORDER ST. - STATION 0+20.00 TO STATION 11+88.17  
 CENTRAL ST. - STATION 0+20.00 TO STATION 11+64.60  
 WAREHOUSE ST. - STATION 0+12.00 TO STATION 4+04.70

\*\* CENTRAL 2.0% USUAL ON RIGHT SIDE ONLY.

**NOTES**

- ① UNDERSEAL, SEAL COAT & 2" ACP SURFACE COURSE PER TXDOT SPEC ITEMS 316 AND ITEM 340 OF THE SPECIFICATIONS.
- ② BASE-10" FLEXIBLE BASE PER TXDOT SPEC ITEM 247, TYPE A GRADE 2.
- ③ SUBGRADE-6" LIME TREATED SUBGRADE PER TXDOT SPEC 260 OF THE SPECIFICATIONS. BASED ON 5% BY UNIT WEIGHT OF 110#/CF.
- ④ INSTALL GEOGRID PER MANUFACTURER'S RECOMMENDATIONS. GEOGRID OVERLAP TO BE AS PER MANUFACTURER'S RECOMMENDATIONS, WITH A MINIMUM OF 1' OVERLAP. PINS OR STAPLES SHALL BE USED TO HOLD THE GEOGRID IN PLACE PRIOR TO FILL PLACEMENT.
- ⑤ APPLIES TO BORDER ST. AND CENTRAL ST. ONLY. SEE PLAN-PROFILE SHEETS AND CROSS SECTIONS FOR LOCATIONS.
- ⑥ SEE CROSS-SECTION SHEETS FOR LOCATIONS OF VARYING STREET CROSS-SLOPES AND FOR SIDEWALK/DRIVEWAY CROSS-SLOPES.



NAME: *Randy P. Janak* PE  
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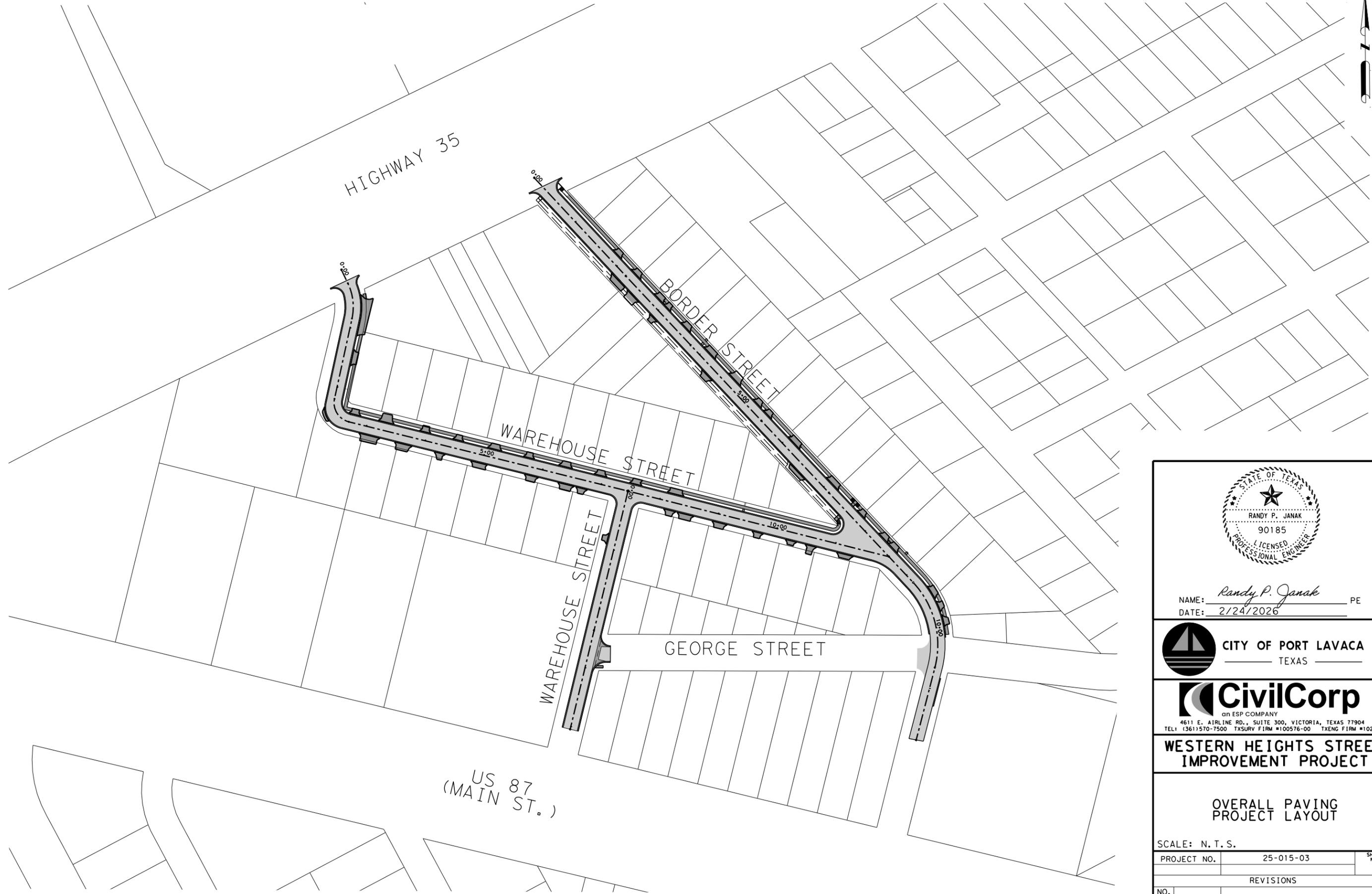


**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

**TYPICAL ROADWAY SECTIONS**

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NAME: *Randy P. Janak* PE  
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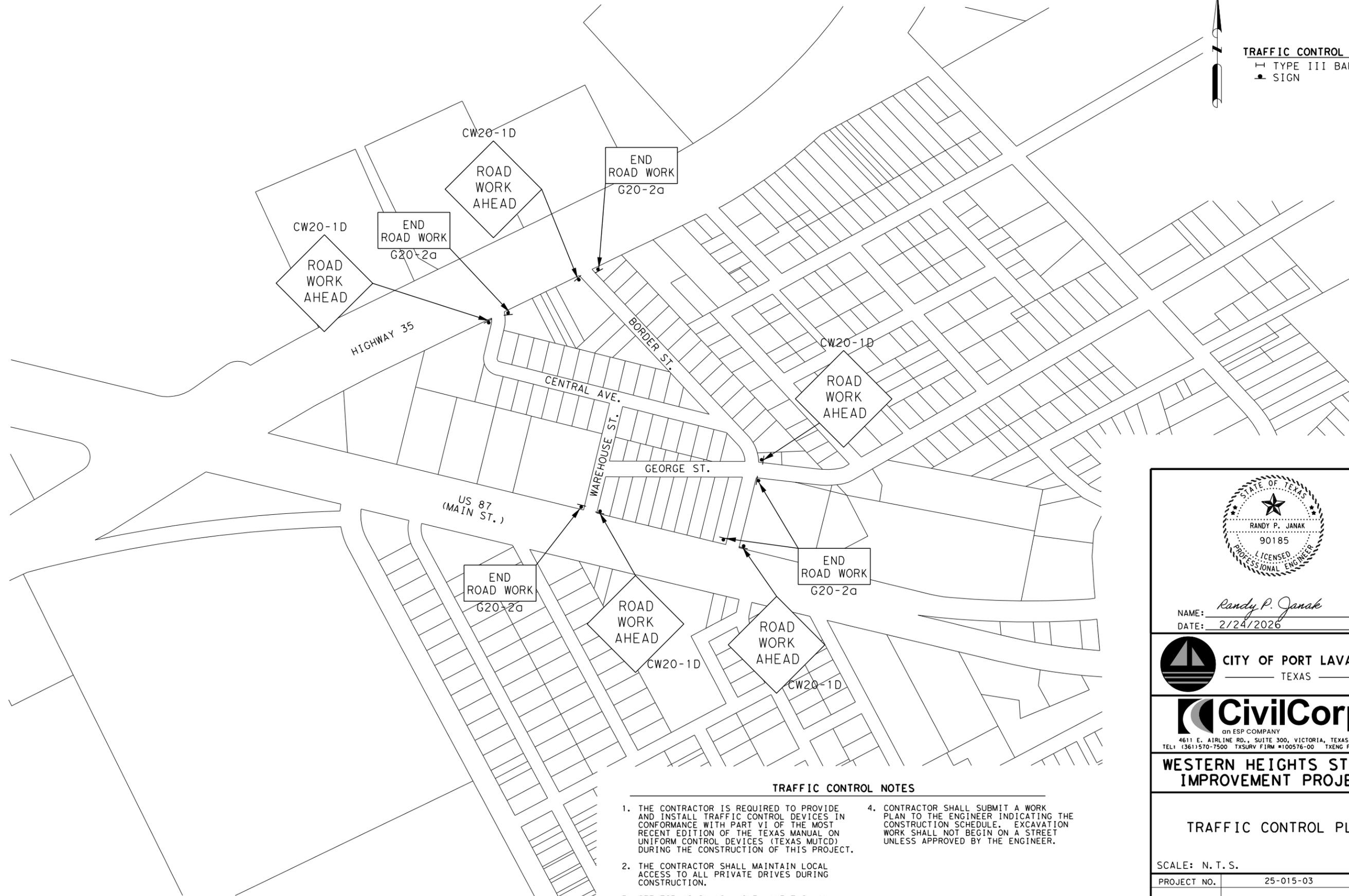
**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

**OVERALL PAVING PROJECT LAYOUT**

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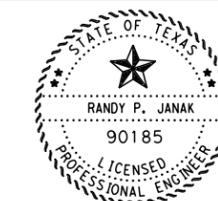
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**TRAFFIC CONTROL LEGEND**

- ▬ TYPE III BARICADE
- SIGN



NAME: *Randy P. Janak* PE  
 DATE: 2/24/2026



**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

**TRAFFIC CONTROL PLAN**

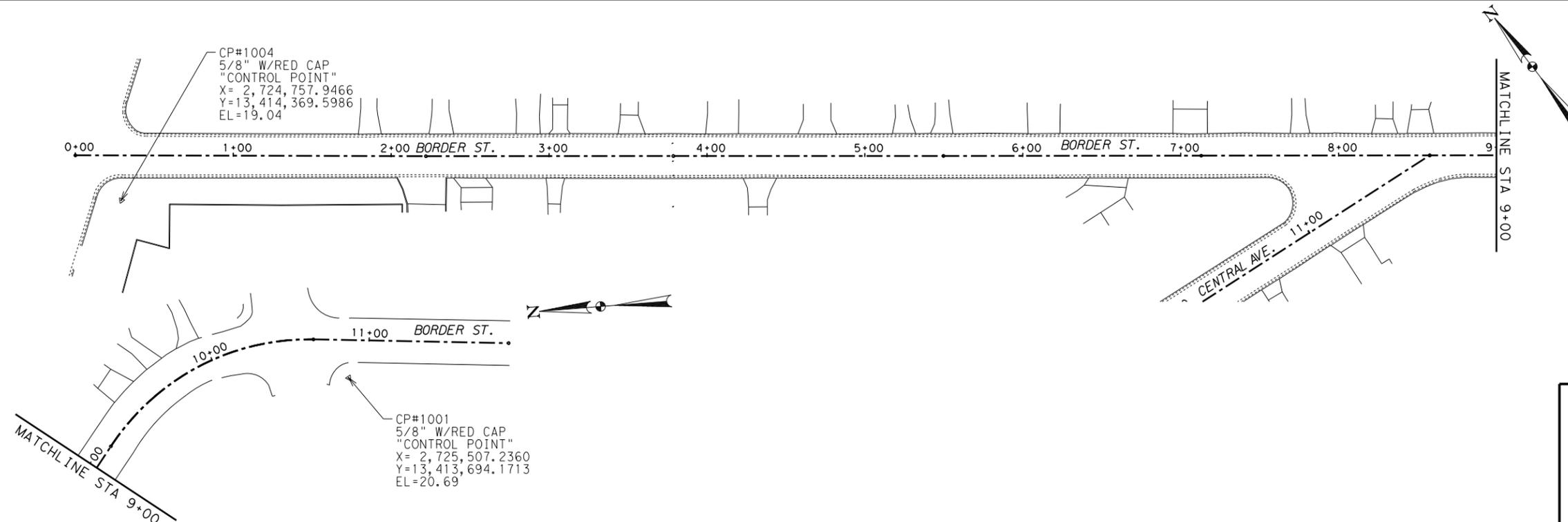
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**TRAFFIC CONTROL NOTES**

1. THE CONTRACTOR IS REQUIRED TO PROVIDE AND INSTALL TRAFFIC CONTROL DEVICES IN CONFORMANCE WITH PART VI OF THE MOST RECENT EDITION OF THE TEXAS MANUAL ON UNIFORM CONTROL DEVICES (TEXAS MUTCD) DURING THE CONSTRUCTION OF THIS PROJECT.
2. THE CONTRACTOR SHALL MAINTAIN LOCAL ACCESS TO ALL PRIVATE DRIVES DURING CONSTRUCTION.
3. SEE TCP (2-2)-18 - ONE LANE TWO-WAY TRAFFIC CONTROL FOR MORE INFORMATION.
4. CONTRACTOR SHALL SUBMIT A WORK PLAN TO THE ENGINEER INDICATING THE CONSTRUCTION SCHEDULE. EXCAVATION WORK SHALL NOT BEGIN ON A STREET UNLESS APPROVED BY THE ENGINEER.

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- NOTES:
1. ALL COORDINATES SHOWN ARE SURFACE COORDINATES AND ARE BASED ON THE TEXAS COORDINATE SYSTEM, SOUTH CENTRAL ZONE (4204) NAD83 GEOID G18 AND MAY BE CONVERTED TO GRID BY DIVIDING BY THE COMBINED ADJUSTMENT FACTOR OF 1.000130.
  2. ALL ELEVATIONS SHOWN ARE BASED ON THE NAVD88 DATUM.
  3. THIS SURVEY CONTROL INFORMATION HAS BEEN ACCEPTED AND INCORPORATED INTO THIS PS&E.

Beginning chain BORDER description

|   |   |                |   |                 |     |         |
|---|---|----------------|---|-----------------|-----|---------|
| Point 1039  | X | 2,724,752.3830 | Y | 13,414,409.8313 | Sta | 0+00.00 |
| Course from 1039 to 1040 S 52° 00' 31.58" E Dist 222.0435       |   |                |   |                 |     |         |
| Point 1040  | X | 2,724,927.3766 | Y | 13,414,273.1545 | Sta | 2+22.04 |
| Course from 1040 to 1041 S 52° 10' 58.17" E Dist 156.7196       |   |                |   |                 |     |         |
| Point 1041  | X | 2,725,051.1806 | Y | 13,414,177.0628 | Sta | 3+78.76 |
| Course from 1041 to 1042 S 52° 09' 47.16" E Dist 171.0065       |   |                |   |                 |     |         |
| Point 1042  | X | 2,725,186.2347 | Y | 13,414,072.1647 | Sta | 5+49.77 |
| Course from 1042 to 1043 S 52° 12' 03.09" E Dist 163.2989       |   |                |   |                 |     |         |
| Point 1043  | X | 2,725,315.2677 | Y | 13,413,972.0796 | Sta | 7+13.07 |
| Course from 1043 to PC BORDER1 S 52° 13' 26.19" E Dist 203.2202 |   |                |   |                 |     |         |

|  |          |                |                |                 |                     |          |
|--|----------|----------------|----------------|-----------------|---------------------|----------|
| Curve Data   |          |                |                |                 |                     |          |
| *-----*  |          |                |                |                 |                     |          |
| Curve BORDER1 (Chord Definition)                               |          |                |                |                 |                     |          |
| P.I. Station   | 9+99.10  | X              | 2,725,541.3466 | Y               | 13,413,796.8661     |          |
|  |          |                | Delta          | =               | 57° 48' 04.86" (RT) |          |
|  |          |                | Degree         | =               | 38° 56' 32.79"      |          |
|  |          |                | Tangent        | =               | 82.8068             |          |
|  |          |                | Length         | =               | 148.4277            |          |
|  |          |                | Radius         | =               | 150.0000            |          |
|  |          |                | External       | =               | 21.3387             |          |
|  |          |                | Long Chord     | =               | 144.9878            |          |
|  |          |                | Mid. Ord.      | =               | 18.6812             |          |
| P.C. Station   | 9+16.29  | X              | 2,725,475.8952 | Y               | 13,413,847.5916     |          |
| P.T. Station   | 10+64.72 | X              | 2,725,533.2985 | Y               | 13,413,714.4514     |          |
| C.C.   |          | X              | 2,725,384.0087 | Y               | 13,413,729.0300     |          |
|  |          |                | Back           | = S             | 52° 13' 26.19" E    |          |
|  |          |                | Ahead          | = S             | 5° 34' 38.67" W     |          |
|  |          |                | Chord Bear     | = S             | 23° 19' 23.76" E    |          |
| Course from PT BORDER1 to 1044 S 5° 34' 38.68" W Dist 123.6536 |          |                |                |                 |                     |          |
| Point 1044   | X        | 2,725,521.2806 | Y              | 13,413,591.3832 | Sta                 | 11+88.37 |

Ending chain BORDER description

NAME: \_\_\_\_\_ RPLS  
 DATE: 2/24/2026

NAME: *Randy P. Janak* PE  
 DATE: 2/24/2026

**CITY OF PORT LAVACA**  
 TEXAS

**CivilCorp**  
 an ESP COMPANY  
 4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
 TEL: (361) 570-7500 TXSURV FIRM #100576-00 TXENG FIRM #10283

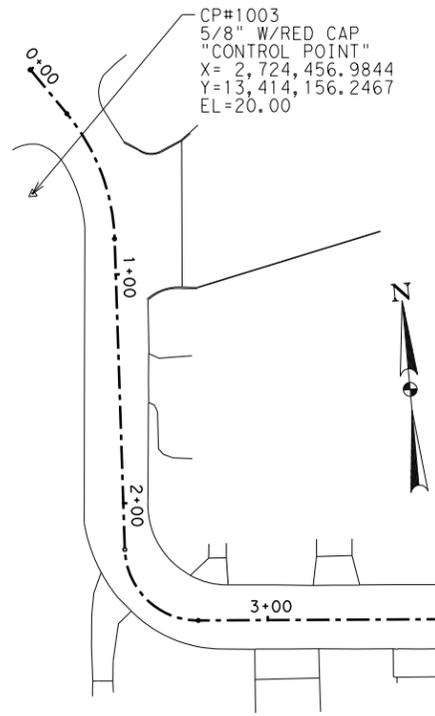
**WESTERN HEIGHTS STREET  
 IMPROVEMENT PROJECT**

**BORDER STREET  
 PROJECT LAYOUT  
 & CONTROL**

SHEET 1 OF 2

|             |           |           |   |
|-------------|-----------|-----------|---|
| PROJECT NO. | 25-015-03 | SHEET NO. | 7 |
| REVISIONS   |           |           |   |
| NO.         |           |           |   |
|             |           |           |   |

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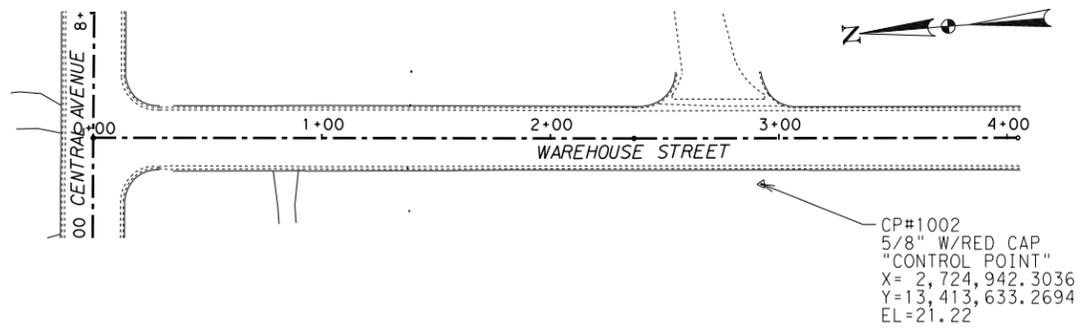


Beginning chain CENTRAL description

|  |   |                |   |                 |     |                                 |
|--|---|----------------|---|-----------------|-----|---------------------------------|
| Point 2000   | X | 2,724,460.9655 | Y | 13,414,210.0463 | Sta | 0+00.00                         |
| Course from 2000 to PC CENTRAL1 S 34° 36' 01.91" E Dist 24.9018        |   |                |   |                 |     |                                 |
| Curve Data   |   |                |   |                 |     |                                 |
| *-----*  |   |                |   |                 |     |                                 |
| P.I. Station   |   | 0+55.83        | X | 2,724,492.6668  | Y   | 13,414,164.0937                 |
|  |   |                |   |                 |     | Delta = 37° 55' 35.18" (RT)     |
|  |   |                |   |                 |     | Degree = 63° 39' 43.12"         |
|  |   |                |   |                 |     | Tangent = 30.9249               |
|  |   |                |   |                 |     | Length = 59.5747                |
|  |   |                |   |                 |     | Radius = 90.0000                |
|  |   |                |   |                 |     | External = 5.1648               |
|  |   |                |   |                 |     | Long Chord = 58.4930            |
|  |   |                |   |                 |     | Mid. Ord. = 4.8845              |
| P.C. Station   |   | 0+24.90        | X | 2,724,475.1060  | Y   | 13,414,189.5489                 |
| P.T. Station   |   | 0+84.48        | X | 2,724,490.8727  | Y   | 13,414,133.2209                 |
| C.C.   |   |                | X | 2,724,401.0242  | Y   | 13,414,138.4423                 |
|  |   |                |   |                 |     | Back = S 34° 36' 01.91" E       |
|  |   |                |   |                 |     | Ahead = S 3° 19' 33.27" W       |
|  |   |                |   |                 |     | Chord Bear = S 15° 38' 14.32" E |
| Course from PT CENTRAL1 to PC CENTRAL2 S 3° 19' 33.27" W Dist 135.7081 |   |                |   |                 |     |                                 |

Curve Data

|  |   |                |   |                 |     |                                 |
|--|---|----------------|---|-----------------|-----|---------------------------------|
| *-----*  |   |                |   |                 |     |                                 |
| P.I. Station   |   | 2+51.30        | X | 2,724,481.1944  | Y   | 13,413,966.6805                 |
|  |   |                |   |                 |     | Delta = 88° 23' 24.74" (LT)     |
|  |   |                |   |                 |     | Degree = 179° 02' 57.52"        |
|  |   |                |   |                 |     | Tangent = 31.1133               |
|  |   |                |   |                 |     | Length = 49.3664                |
|  |   |                |   |                 |     | Radius = 32.0000                |
|  |   |                |   |                 |     | External = 12.6323              |
|  |   |                |   |                 |     | Long Chord = 44.6146            |
|  |   |                |   |                 |     | Mid. Ord. = 9.0570              |
| P.C. Station   |   | 2+20.18        | X | 2,724,482.9995  | Y   | 13,413,997.7414                 |
| P.T. Station   |   | 2+69.55        | X | 2,724,512.1924  | Y   | 13,413,964.0036                 |
| C.C.   |   |                | X | 2,724,514.9456  | Y   | 13,413,995.8849                 |
|  |   |                |   |                 |     | Back = S 3° 19' 33.27" W        |
|  |   |                |   |                 |     | Ahead = S 85° 03' 51.47" E      |
|  |   |                |   |                 |     | Chord Bear = S 40° 52' 09.10" E |
| Course from PT CENTRAL2 to 2001 S 85° 03' 51.47" E Dist 475.9266 |   |                |   |                 |     |                                 |
| Point 2001   | X | 2,724,986.3542 | Y | 13,413,923.0559 | Sta | 7+45.48                         |
| Course from 2001 to 2002 S 84° 53' 35.07" E Dist 445.0528        |   |                |   |                 |     |                                 |
| Point 2002   | X | 2,725,429.6403 | Y | 13,413,883.4397 | Sta | 11+90.53                        |
| Ending chain CENTRAL description                                 |   |                |   |                 |     |                                 |



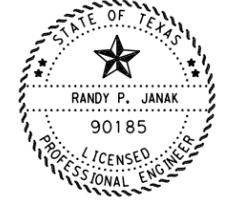
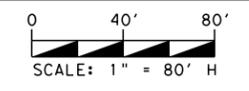
Beginning chain WAREHOUSE description

|  |   |                |   |                 |     |         |
|--|---|----------------|---|-----------------|-----|---------|
| Point 1049   | X | 2,724,986.3542 | Y | 13,413,923.0559 | Sta | 0+00.00 |
| Course from 1049 to 1050 S 4° 45' 11.96" W Dist 236.7119 |   |                |   |                 |     |         |
| Point 1050   | X | 2,724,966.7388 | Y | 13,413,687.1581 | Sta | 2+36.71 |
| Course from 1050 to 1051 S 4° 36' 48.26" W Dist 167.9875 |   |                |   |                 |     |         |
| Point 1051   | X | 2,724,953.2272 | Y | 13,413,519.7149 | Sta | 4+04.70 |
| Ending chain WAREHOUSE description                       |   |                |   |                 |     |         |

- NOTES:
1. ALL COORDINATES SHOWN ARE SURFACE COORDINATES AND ARE BASED ON THE TEXAS COORDINATE SYSTEM, SOUTH CENTRAL ZONE (4204) NAD83 GEOID G18 AND MAY BE CONVERTED TO GRID BY DIVIDING BY THE COMBINED ADJUSTMENT FACTOR OF 1.000130.
  2. ALL ELEVATIONS SHOWN ARE BASED ON THE NAVD88 DATUM.
  3. THIS SURVEY CONTROL INFORMATION HAS BEEN ACCEPTED AND INCORPORATED INTO THIS PS&E.



NAME: \_\_\_\_\_ RPLS  
 DATE: 2/24/2026



NAME: *Randy P. Janak* PE  
 DATE: 2/24/2026



**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

**CENTRAL AVENUE & WAREHOUSE STREET PROJECT LAYOUT & CONTROL**

SHEET 2 OF 2

|             |           |           |   |
|-------------|-----------|-----------|---|
| PROJECT NO. | 25-015-03 | SHEET NO. | 8 |
| REVISIONS   |           |           |   |
| NO.         |           |           |   |
|             |           |           |   |

**SUMMARY OF PAVING QUANTITIES - BASE BID**

| STREET       | STATION TO STATION          | ITEM 104                    | ITEM 162      | ITEM 168                | ITEM 110                 | ITEM 132                 | ITEM 247                         | ITEM 260                       | SURFACE AREA FOR ASPHALT | ITEM 316              |               | ITEM 316                     | ITEM 340             | GEOGRID (1) | ITEM 421                  | ITEM 421           | ITEM 496                 | ITEM 529              | ITEM 530                   | ITEM 530             | ITEM 530         |                  |
|--------------|-----------------------------|-----------------------------|---------------|-------------------------|--------------------------|--------------------------|----------------------------------|--------------------------------|--------------------------|-----------------------|---------------|------------------------------|----------------------|-------------|---------------------------|--------------------|--------------------------|-----------------------|----------------------------|----------------------|------------------|------------------|
|              |                             | REMOVE CONC (CURB & GUTTER) | BLOCK SODDING | VEG WATERING (1000 GAL) | EXCAVATION (ROADWAY) (3) | EMBANK (DENSITY CONTROL) | FL BS COMPL IN PLACE (TY A GR 2) | LIME TREATED SUBGRADE (6") (4) |                          | AGGR MATL (TY B GR 5) | RC-250        | AGGR MATL (TY PE GR 3 SAC-B) | AC-15P OR CRS-2P (2) |             | ACP SURF (2") (TY D) (PG) | CONC VALLEY GUTTER | CONC DITCH FLUME W/ CURB | REMOVE EXIST SIDEWALK | CONC CURB & GUTTER (TY II) | SIDEWALK (4")(REINF) | CURB RAMP TYPE 1 | CURB RAMP TYPE 7 |
|              |                             | LF                          | SY            | MG                      | CY                       | CY                       | CY                               | SY                             | SY                       | UNDERSEAL CY          | UNDERSEAL GAL | SEAL COAT CY                 | SEAL GAL             | TON         | SY                        | SY                 | SY                       | SY                    | LF                         | SY                   | EA               | EA               |
| BORDER ST    | STA 0+20.04 TO STA 11+88.37 | 2049                        | 991           |                         | 1602                     | 15                       | 1005                             | 3900                           | 3233                     | 27                    | 647           | 32                           | 1293                 | 356         | 3900                      |                    |                          | 80                    | 2060                       | 400                  | 3                | 1                |
| CENTRAL AVE  | STA 0+20.25 TO STA 11+53.27 | 2253                        | 1161          | 15                      | 1528                     | 30                       | 1002                             | 3915                           | 3174                     | 26                    | 635           | 32                           | 1270                 | 349         | 3915                      |                    | 5                        | 2253                  | 452                        |                      |                  |                  |
| WAREHOUSE ST | STA 0+27.16 TO STA 4+04.70  | 797                         | 490           |                         | 462                      | 10                       | 354                              | 1393                           | 1106                     | 9                     | 221           | 11                           | 442                  | 122         | 1393                      | 39                 | 5                        | 797                   |                            |                      |                  |                  |
| <b>TOTAL</b> |                             | <b>5099</b>                 | <b>2642</b>   | <b>15</b>               | <b>3592</b>              | <b>55</b>                | <b>2361</b>                      | <b>9208</b>                    | <b>7513</b>              | <b>62</b>             | <b>1503</b>   | <b>75</b>                    | <b>3005</b>          | <b>827</b>  | <b>9208</b>               | <b>39</b>          | <b>5</b>                 | <b>85</b>             | <b>5110</b>                | <b>852</b>           | <b>3</b>         | <b>1</b>         |

| STREET    | ITEM 530-ADD ALT #1 SIDEWALK (4")(REINF) SY |
|-----------|---|
| BORDER ST | 339   |

**BASIS OF ESTIMATE**

| ITEM | DESCRIPTION                            | RATE            |
|------|--|-----------------|
| 316  | AGGR MATL (TY B GR 5) - Underseal      | 1 CY/120 SY     |
|      | RC-250 - Underseal                     | 0.20 GAL/SY     |
|      | AGGR MATL (TY PE GR 3 SAC-B) Seal Coat | 1 CY/100 SY     |
|      | ASPH (AC-15P OR CRS-2P) Seal Coat      | 0.40 GAL/SY (2) |

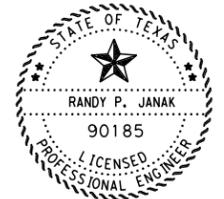
(1) INSTALL AS PER MANUFACTURER'S RECOMMENDATIONS (TENSAR TX-130S OR TENAX 3D-LT).

(2) ASPHALT RATES ARE ESTIMATES. RATE SHOWN IS FOR CRS-2P ASPHALT. IF AC-15P IS USED, ESTIMATED RATE WILL BE 0.35 GAL/SY. CONTRACTOR TO BE PAID FOR ACTUAL GALLONS USED BASED ON RATE USED AT TIME OF APPLICATION.

(3) REMOVAL OF EXISTING PAVEMENT IS INCLUDED IN THE EXCAVATION QUANTITY.

(4) LIME TREATED SUBGRADE TO INCLUDE FURNISHING LIME @ 5% (NO SEPARATE PAY FOR LIME).

\* 1" AND 3" CURB HEIGHTS ARE AT DRIVEWAYS. ITEM FOR CONC CURB & GUTTER (TY II) ON BID SHEET COMBINES ALL THREE QUANTITIES INTO ONE BID ITEM.



NAME: Randy P. Janak PE  
DATE: 2/24/2026



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**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

PAVING SUMMARY

SHEET 1 OF 1

|             |           |           |   |
|-------------|-----------|-----------|---|
| PROJECT NO. | 25-015-03 | SHEET NO. | 9 |
| REVISIONS   |           |           |   |
| NO.         |           |           |   |
|             |           |           |   |

**SUMMARY OF WATER/SANITARY SEWER QUANTITIES**

| STREET       | EX 2" WATER LINE ABANDONED IN PLACE | EX 6" WATER LINE ABANDONED IN PLACE | 6" DIA. C900 (NON TRAFFIC) | 6" DIA. C900 (TRAFFIC) | LOCATE AND CONNECT TO EX 2" WATER LINE | CUT & PLUG EX 2" WATER LINE | 6" (11.25°) BEND | 6" (22.50°) BEND | 6" (45°) BEND | 6" (90°) BEND | 6"X6"X6" TEE | 6"X2" REDUCER | 14"X6" TAPPING SLEEVE & VALVE | INSTALL 6" GATE VALVE & BOX | REMOVE EX VALVE | REMOVE & REINSTALL SINGLE 1" INCLUDING 1"X3/4" REDUCER WATER SERVICE (SHORT) | REMOVE & REINSTALL SINGLE 1" INCLUDING 1"X3/4" REDUCER WATER SERVICE (LONG) | REMOVE & REINSTALL DOUBLE 1" INCLUDING 1"X3/4" REDUCER WATER SERVICE (LONG) | REMOVE & REINSTALL SINGLE 2" WATER SERVICE (SHORT) | FIRE HYDRANT ASSEMBLY | REMOVE FIRE HYDRANT | LOWER EX 14" WATER BELOW PROP STORM SEWER | INSTALL PROP MAINLINE CLEAN-OUT | INSTALL NEW 48" DIAMETER FIBERGLASS MANHOLE (0'-5' DEEP) |
|--------------|-------------------------------------|-------------------------------------|----------------------------|------------------------|--|-----------------------------|------------------|------------------|---------------|---------------|--------------|---------------|-------------------------------|-----------------------------|-----------------|--|---|---|--|-----------------------|---------------------|---|---------------------------------|--|
| BORDER ST    | LF                                  | LF                                  | LF                         | LF                     | EA                                     | EA                          | EA               | EA               | EA            | EA            | EA           | EA            | EA                            | EA                          | EA              | EA   | EA  | EA  | EA   | EA                    | EA                  | EA  | EA                              | EA   |
| CENTRAL AVE  | 416                                 | 402                                 | 970                        | 40                     |  |                             | 12               |                  | 1             | 1             | 1            |               | 1                             | 2                           | 1               | 9  | 13  |   |  | 1                     | 1                   |   | 1                               | 1  |
| WAREHOUSE ST | 417                                 |                                     | 297                        | 82                     | 1                                      | 1                           | 1                |                  |               | 2             |              | 1             |                               | 1                           |                 |  |   |   |  | 1                     |                     |   |                                 |  |
|              | 833                                 | 1238                                | 2289                       | 250                    | 2                                      | 2                           | 17               | 1                | 8             | 3             | 3            | 2             | 2                             | 6                           | 2               | 19   | 21  |   | 1  | 5                     | 2                   | 1   | 2                               | 1  |

**STORM DRAIN QUANTITIES**

| STREET       | STATION                     | ITEM 464 * |           |            |           | ITEM 465                 |                 |                 |                               | ITEM 496                   |                        |                        |                        | GROUTED STORM DRAIN CONNECTION |
|--------------|-----------------------------|------------|-----------|------------|-----------|--------------------------|-----------------|-----------------|-------------------------------|----------------------------|------------------------|------------------------|------------------------|--------------------------------|
|              |                             | 12" RCP    | 15" RCP   | 18" RCP    | 24" RCP   | CURB INLET (5'X3') (PCO) | JCT BOX (3'X3') | JCT BOX (4'X4') | REMOV & REPLC EXIST INLET TOP | REMOVE EX 5'X3' CURB INLET | REMOVE EX RCP 12" PIPE | REMOVE EX RCP 15" PIPE | REMOVE EX RCP 18" PIPE |                                |
|              |                             | LF         | LF        | LF         | LF        | EA                       | EA              | EA              | EA                            | EA                         | LF                     | LF                     | LF                     |                                |
| BORDER ST    | STA 0+20.04 TO STA 11+88.37 | 4          | 12        | 347        | 76        | 6                        | 1               |                 | 2                             | 2                          | 27                     | 11                     |                        | 4                              |
| CENTRAL AVE  | STA 0+20.25 TO STA 11+53.27 |            | 4         | 178        |           | 5                        | 2               | 1               |                               |                            |                        | 4                      | 23                     | 6                              |
| WAREHOUSE ST | STA 0+27.16 TO STA 4+04.70  |            |           |            |           |                          |                 |                 | 2                             |                            |                        |                        |                        |                                |
|              | <b>TOTAL</b>                | <b>4</b>   | <b>16</b> | <b>525</b> | <b>76</b> | <b>11</b>                | <b>3</b>        | <b>1</b>        | <b>4</b>                      | <b>2</b>                   | <b>27</b>              | <b>15</b>              | <b>23</b>              | <b>10</b>                      |

\*CONTRACTOR MAY SUBSTITUTE ADS HP STORM DUAL WALL PIPE FOR RCP EXCEPT IN TXDOT ROW.

**MISC QUANTITIES**

| STREET       | STATIONS                    | IN SM RD SN SUP & ASSM TY 10 BWG (1)SA(P) | REMOVE & REINSTALL SIGN | PREFAB PAV MKR (TY C)(W) (24 IN)(SLD) | PREFAB PAV MKR (TY C)(W) (18 IN)(YLD TRI) | ADJUST SAN SEWER MANHOLE TO GRADE | ADJUST STORM SEWER MANHOLE TO GRADE |
|--------------|-----------------------------|---|-------------------------|---------------------------------------|---|-----------------------------------|-------------------------------------|
|              |                             | EA  | EA                      | LF                                    | EA  | EA                                | EA                                  |
| BORDER ST    | STA 0+20.04 TO STA 11+88.37 | 6   | 8                       | 42                                    | 10  | 3                                 | 3                                   |
| CENTRAL AVE  | STA 0+20.25 TO STA 11+53.27 |   | 4                       |                                       |   | 1                                 | 1                                   |
| WAREHOUSE ST | STA 0+27.16 TO STA 4+04.70  |   | 4                       |                                       |   |                                   |                                     |
|              | <b>TOTAL</b>                | <b>6</b>                                  | <b>16</b>               | <b>42</b>                             | <b>10</b>                                 | <b>4</b>                          | <b>4</b>                            |



NAME: *Randy P. Janak* PE  
DATE: 2/24/2026



**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

**WATER/SEWER, STORM DRAIN, & MISC SUMMARIES**

SHEET 1 OF 1

|             |           |           |    |
|-------------|-----------|-----------|----|
| PROJECT NO. | 25-015-03 | SHEET NO. | 10 |
| REVISIONS   |           |           |    |
| NO.         |           |           |    |
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### BORDER STREET

| STATION       | OFFSET | EXISTING DRIVEWAY MATERIAL | PROPOSED DRIVEWAY/SIDEWALK |     |     |    |      |      |      |    |    | REMOVE CONC (DRVWY)<br>SY | DRVWYS (CONC) (4")<br>SY |      |      |
|---------------|--------|----------------------------|----------------------------|-----|-----|----|------|------|------|----|----|---------------------------|--------------------------|------|------|
|               |        |                            | MATERIAL                   | L1  | L2  | W1 | W2   | W3   | X1   | X2 | H  |                           |                          |      |      |
|               |        |                            |                            | FT  | FT  | FT | FT   | FT   | FT   | FT | FT |                           |                          | IN   |      |
| 1+86.09       | LT     | CONCRETE                   | CONCRETE                   | 5.0 |     |    | 21.0 | 13.3 | 12.0 |    |    |                           | 3.00                     | 20.3 | 14.6 |
| 2+21.49       | RT     | CONCRETE                   | CONCRETE                   | 9.3 |     |    | 32.5 | 28.4 | 26.2 |    |    |                           | 3.00                     | 30.1 | 29.6 |
| 2+31.60       | LT     | CONCRETE                   | CONCRETE                   | 5.0 |     |    | 23.9 | 14.2 | 12.6 |    |    |                           | 0.75                     | 14.7 | 16.0 |
| 2+54.24       | RT     | CONCRETE                   | CONCRETE                   | 7.9 |     |    | 28.8 | 20.0 | 20.0 |    |    |                           | 3.00                     | 28.2 | 28.1 |
| 2+86.69       | LT     | GRAVEL                     | CONCRETE                   | 5.0 |     |    | 23.0 | 15.0 | 14.6 |    |    |                           | 3.00                     | 14.7 | 16.7 |
| 3+03.50       | RT     | CONCRETE                   | CONCRETE                   | 5.3 |     |    | 18.1 | 10.1 | 9.0  |    |    |                           | 3.00                     | 10.4 | 11.9 |
| 3+07.02       | LT     | CONCRETE                   | CONCRETE                   | 5.0 |     |    | 17.4 | 9.4  | 9.4  |    |    |                           | 3.00                     | 9.9  | 11.2 |
| 3+51.28       | LT     | CONCRETE                   | CONCRETE                   | 5.0 |     |    | 23.1 | 15.1 | 12.5 |    |    |                           | 3.00                     | 14.6 | 16.2 |
| 4+10.07       | LT     | CONCRETE                   | CONCRETE                   | 5.0 |     |    | 28.5 | 20.5 | 20.1 |    |    |                           | 3.00                     | 20.4 | 22.2 |
| 4+33.24       | RT     | GRAVEL                     | CONCRETE                   | 2.0 | 3.2 |    | 25.5 | 17.5 | 13.8 |    |    |                           | 0.75                     | 17.6 | 18.6 |
| 4+69.79       | LT     | CONCRETE                   | CONCRETE                   | 5.0 | 3.2 |    | 29.3 | 21.3 | 17.4 |    |    |                           | 0.75                     | 20.8 | 28.0 |
| 5+24.13       | LT     | GRAVEL                     | CONCRETE                   | 5.0 |     |    | 20.5 | 12.5 | 9.8  |    |    |                           | 0.75                     | 12.0 | 13.6 |
| 5+49.43       | LT     | GRAVEL                     | CONCRETE                   | 5.0 |     |    | 20.0 | 12.0 | 10.0 |    |    |                           | 0.75                     | 11.6 | 13.2 |
| 6+13.42       | LT     | CONCRETE                   | CONCRETE                   | 5.0 |     |    | 28.3 | 20.3 | 20.5 |    |    |                           | 3.00                     | 20.1 | 22.2 |
| 6+52.29       | RT     | CONCRETE                   | CONCRETE                   | 5.5 |     |    | 36.1 | 28.4 |      |    |    |                           | 3.00                     | 20.2 | 21.8 |
| 7+06.06       | LT     | CONCRETE                   | CONCRETE                   | 5.0 |     |    | 29.8 | 21.8 | 21.8 |    |    |                           | 3.00                     | 21.8 | 23.6 |
| 7+75.16       | LT     | GRAVEL                     | CONCRETE                   | 5.0 |     |    | 19.3 | 11.3 | 9.8  |    |    |                           | 3.00                     | 11.0 | 12.7 |
| 8+28.95       | LT     | CONCRETE                   | CONCRETE                   | 5.0 |     |    | 22.2 | 14.2 | 11.2 |    |    |                           | 3.00                     | 13.8 | 15.1 |
| 8+51.81       | LT     | CONCRETE                   | CONCRETE                   | 5.0 |     |    | 23.3 | 15.3 | 13.4 |    |    |                           | 0.75                     | 15.1 | 16.6 |
| 9+45.03       | LT     | CONCRETE                   | CONCRETE                   | 5.0 |     |    | 25.0 | 17.4 | 16.3 |    |    |                           | 3.00                     | 14.2 | 19.0 |
| 9+68.11       | LT     | GRAVEL                     | CONCRETE                   | 5.0 |     |    | 19.2 | 11.5 | 10.4 |    |    |                           | 0.75                     | 8.1  | 13.0 |
| 9+92.97       | LT     | GRAVEL                     | CONCRETE                   | 5.0 | 2.8 |    | 20.2 | 14.9 | 10.9 |    |    |                           | 0.75                     | 9.1  | 14.1 |
| <b>TOTALS</b> |        |                            |                            |     |     |    |      |      |      |    |    | <b>358.6</b>              | <b>398</b>               |      |      |

### CENTRAL AVENUE

| STATION       | OFFSET | EXISTING DRIVEWAY MATERIAL | PROPOSED DRIVEWAY/SIDEWALK |      |    |    |      |      |          |    |    | REMOVE CONC (DRVWY)<br>SY | DRVWYS (CONC) (4")<br>SY | DRVWYS (CONC) (6")<br>SY |      |
|---------------|--------|----------------------------|----------------------------|------|----|----|------|------|----------|----|----|---------------------------|--------------------------|--------------------------|------|
|               |        |                            | MATERIAL                   | L1   | L2 | W1 | W2   | W3   | X1       | X2 | H  |                           |                          |                          |      |
|               |        |                            |                            | FT   | FT | FT | FT   | FT   | FT       | FT | FT |                           |                          |                          | IN   |
| 0+78.65       | LT     | CONCRETE                   | CONCRETE                   | 12.0 |    |    | 69.4 | 59.2 | 61.9     |    |    |                           | 0.75                     | 95.8                     | 96.4 |
| 1+47.48       | LT     | GRAVEL                     | CONCRETE                   | 5.0  |    |    | 28.3 | 20.6 |          |    |    |                           | 0.75                     | 23.8                     | 22.2 |
| 2+37.37       | RT     | GRAVEL                     | CONCRETE                   | 0.0  |    |    | 24.8 | 17.4 |          |    |    |                           | 3.00                     | 25.9                     | 9.3  |
| 2+76.95       | LT     | GRAVEL                     | CONCRETE                   | 5.0  |    |    | 21.0 | 12.5 |          |    |    |                           | 3.00                     | 10.4                     | 14.3 |
| 3+08.37       | RT     | CONCRETE                   | CONCRETE                   | 7.7  |    |    | 36.0 | 28.1 |          |    |    |                           | 3.00                     | 40.6                     | 38.2 |
| 3+29.94       | LT     | CONCRETE                   | CONCRETE                   | 9.8  |    |    | 27.3 | 19.3 | 15.6     |    |    |                           | 0.75                     | 25.0                     | 29.3 |
| 3+66.00       | RT     | CONCRETE                   | CONCRETE                   | 7.2  |    |    | 30.3 | 22.3 | 20.3     |    |    |                           | 3.00                     | 23.0                     | 28.8 |
| 3+96.32       | LT     | CONCRETE                   | CONCRETE                   | 6.2  |    |    | 19.5 | 11.6 |          |    |    |                           | 3.00                     | 11.7                     | 14.9 |
| 4+28.10       | RT     | CONCRETE                   | CONCRETE                   | 7.2  |    |    | 18.9 | 10.9 | 7.9      |    |    |                           | 3.00                     | 13.4                     | 14.1 |
| 4+52.71       | LT     | GRASS                      | CONCRETE                   | 5.0  |    |    | 19.2 | 11.3 | 10.0     |    |    |                           | 0.75                     | 11.0                     | 12.7 |
| 4+94.95       | RT     | CONCRETE                   | CONCRETE                   | 4.9  |    |    | 28.5 | 22.5 | 22.5     |    |    |                           | 3.00                     | 23.9                     | 23.2 |
| 5+14.64       | LT     | GRAVEL                     | CONCRETE                   | 5.0  |    |    | 24.8 | 16.8 | 14.0     |    |    |                           | 3.00                     | 14.9                     | 17.7 |
| 5+73.20       | LT     | CONCRETE                   | CONCRETE                   | 5.0  |    |    | 19.4 | 11.4 | 10.5     |    |    |                           | 3.00                     | 10.6                     | 12.9 |
| 5+84.35       | RT     | CONCRETE                   | CONCRETE                   | 5.4  |    |    | 24.2 | 15.9 |          |    |    |                           | 3.00                     | 17.9                     | 18.6 |
| 6+35.47       | LT     | GRAVEL                     | CONCRETE                   | 5.0  |    |    | 24.0 | 16.1 | 13.5     |    |    |                           | 0.75                     | 14.9                     | 17.0 |
| 6+43.31       | RT     | CONCRETE                   | CONCRETE                   | 5.6  |    |    | 27.8 | 19.2 | 18.8     |    |    |                           | 3.00                     | 21.0                     | 22.4 |
| 6+70.18       | RT     | GRAVEL                     | CONCRETE                   | 5.5  |    |    | 20.1 | 11.9 | 9.5      |    |    |                           | 3.00                     | 12.4                     | 13.7 |
| 6+95.04       | LT     | CONCRETE                   | CONCRETE                   | 5.0  |    |    | 22.1 | 14.2 | 12.1     |    |    |                           | 0.75                     | 13.6                     | 15.3 |
| 7+55.05       | LT     | GRAVEL                     | CONCRETE                   | 5.0  |    |    | 21.6 | 13.6 | 15.5     |    |    |                           | 3.00                     | 13.6                     | 15.8 |
| 8+20.02       | RT     | GRAVEL                     | CONCRETE                   | 5.3  |    |    | 20.9 | 12.9 | 10.3     |    |    |                           | 3.00                     | 13.0                     | 14.3 |
| 8+23.06       | LT     | GRAVEL                     | CONCRETE                   | 5.0  |    |    | 29.2 | 21.2 | 20.8     |    |    |                           | 0.75                     | 20.7                     | 22.8 |
| 8+47.03       | RT     | CONCRETE                   | CONCRETE                   | 5.3  |    |    | 28.7 | 20.7 | 19.4     |    |    |                           | 3.00                     | 21.2                     | 22.8 |
| 9+05.14       | RT     | CONCRETE                   | CONCRETE                   | 5.3  |    |    | 25.9 | 17.9 | 15.5     |    |    |                           | 3.00                     | 18.1                     | 19.6 |
| 9+70.08       | RT     | CONCRETE                   | CONCRETE                   | 5.3  |    |    | 19.4 | 11.4 | 10.7     |    |    |                           | 3.00                     | 12.4                     | 13.3 |
| 10+27.00      | RT     | CONCRETE                   | CONCRETE                   | 3.2  |    |    | 19.6 | 11.6 | 10.6     |    |    |                           | 3.00                     | 9.3                      | 10.8 |
| 10+60.92      | RT     | CONCRETE                   | CONCRETE                   | 9.6  |    |    | 19.6 | 11.6 | 10.1     |    |    |                           | 3.00                     | 17.8                     | 19.2 |
| 11+19.00      | RT     | CONCRETE                   | CONCRETE                   | 3.3  |    |    | 28.8 | 20.8 | 17.922.2 |    |    |                           | 3.00                     | 12.3                     | 18.0 |
| <b>TOTALS</b> |        |                            |                            |      |    |    |      |      |          |    |    | <b>548.2</b>              | <b>481.2</b>             | <b>96.4</b>              |      |

### WAREHOUSE STREET

| STATION       | OFFSET | EXISTING DRIVEWAY MATERIAL | PROPOSED DRIVEWAY/SIDEWALK |     |    |    |      |      | REMOVE CONC (DRVWY)<br>SY | DRVWYS (CONC) (4")<br>SY |            |             |
|---------------|--------|----------------------------|----------------------------|-----|----|----|------|------|---------------------------|--------------------------|------------|-------------|
|               |        |                            | MATERIAL                   | L1  | L2 | W1 | W2   | W3   |                           |                          | H          |             |
|               |        |                            |                            | FT  | FT | FT | FT   | FT   |                           |                          | IN         |             |
| 0+84.29       | RT     | GRAVEL                     | CONCRETE                   | 5.2 |    |    | 19.0 | 10.0 | 8.8                       | 0.75                     | 9.0        | 12.0        |
| <b>TOTALS</b> |        |                            |                            |     |    |    |      |      |                           |                          | <b>9.0</b> | <b>12.0</b> |



NAME: Randy P. Janak PE  
DATE: 2/24/2026



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#### WESTERN HEIGHTS STREET IMPROVEMENT PROJECT

#### DRIVEWAY QUANTITY SUMMARY

SHEET 1 OF 1

|             |           |           |    |
|-------------|-----------|-----------|----|
| PROJECT NO. | 25-015-03 | SHEET NO. | 11 |
| REVISIONS   |           |           |    |
| NO.         |           |           |    |

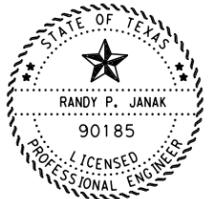
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**BORDER STREET**

| Station | Material Name | End Areas (sq. ft.) | Unadjusted Volumes (cu.yd.) | Adjusted Volumes (cu.yd.) | Mult Factor | Mass Ordinate |
|---------|---------------|---------------------|-----------------------------|---------------------------|-------------|---------------|
| 0+40.00 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 43.3                | 0                           | 0                         | 1           |               |
|         | Fill          | 0                   | 0                           | 0                         | 1           | 0             |
| 0+50.00 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 39.6                | 15                          | 15                        | 1           |               |
|         | Fill          | 0                   | 0                           | 0                         | 1           | 15            |
| 1+00.00 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 45.3                | 79                          | 79                        | 1           |               |
|         | Fill          | 0                   | 0                           | 0                         | 1           | 83            |
| 1+50.00 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 44.9                | 84                          | 84                        | 1           |               |
|         | Fill          | 0                   | 0                           | 0                         | 1           | 109           |
| 1+86.00 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 41.2                | 57                          | 57                        | 1           |               |
|         | Fill          | 0                   | 0                           | 0                         | 1           | 108           |
| 2+00.00 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 41                  | 21                          | 21                        | 1           |               |
|         | Fill          | 0                   | 0                           | 0                         | 1           | 87            |
| 2+22.00 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 35.5                | 31                          | 31                        | 1           |               |
|         | Fill          | 0.3                 | 0                           | 0                         | 1           | 102           |
| 2+32.00 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 37.4                | 14                          | 14                        | 1           |               |
|         | Fill          | 0.1                 | 0                           | 0                         | 1           | 92            |
| 2+52.00 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 36.3                | 27                          | 27                        | 1           |               |
|         | Fill          | 0.2                 | 0                           | 0                         | 1           | 109           |
| 2+87.00 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 36.4                | 47                          | 47                        | 1           |               |
|         | Fill          | 0.2                 | 0                           | 0                         | 1           | 133           |
| 3+05.00 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 35.7                | 24                          | 24                        | 1           |               |
|         | Fill          | 0                   | 0                           | 0                         | 1           | 117           |
| 3+53.00 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 33.3                | 61                          | 61                        | 1           |               |
|         | Fill          | 0.1                 | 0                           | 0                         | 1           | 158           |
| 4+00.00 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 30.7                | 56                          | 56                        | 1           |               |
|         | Fill          | 0.8                 | 1                           | 1                         | 1           | 159           |
| 4+09.00 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 30.7                | 10                          | 10                        | 1           |               |
|         | Fill          | 0.7                 | 0                           | 0                         | 1           | 117           |
| 4+32.00 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 33.1                | 27                          | 27                        | 1           |               |
|         | Fill          | 0.3                 | 0                           | 0                         | 1           | 134           |
| 4+50.00 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 32.7                | 22                          | 22                        | 1           |               |
|         | Fill          | 3.1                 | 1                           | 1                         | 1           | 130           |
| 4+70.00 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 34                  | 25                          | 25                        | 1           |               |
|         | Fill          | 0.7                 | 1                           | 1                         | 1           | 134           |
| 5+00.00 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 37.2                | 40                          | 40                        | 1           |               |
|         | Fill          | 0                   | 0                           | 0                         | 1           | 152           |
| 5+24.00 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 37                  | 33                          | 33                        | 1           |               |
|         | Fill          | 0.1                 | 0                           | 0                         | 1           | 151           |
| 5+50.00 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 38.4                | 36                          | 36                        | 1           |               |

| Station  | Material Name | End Areas (sq. ft.) | Unadjusted Volumes (cu.yd.) | Adjusted Volumes (cu.yd.) | Mult Factor | Mass Ordinate |
|----------|---------------|---------------------|-----------------------------|---------------------------|-------------|---------------|
| 5+75.00  | DIRT          |                     |                             |                           |             |               |
|          | Excavation    | 40.8                | 37                          | 37                        | 1           |               |
|          | Fill          | 0.1                 | 0                           | 0                         | 1           | 167           |
| 6+00.00  | DIRT          |                     |                             |                           |             |               |
|          | Excavation    | 43.2                | 39                          | 39                        | 1           |               |
|          | Fill          | 0                   | 0                           | 0                         | 1           | 178           |
| 6+14.00  | DIRT          |                     |                             |                           |             |               |
|          | Excavation    | 43.1                | 22                          | 22                        | 1           |               |
|          | Fill          | 0.4                 | 0                           | 0                         | 1           | 172           |
| 6+50.00  | DIRT          |                     |                             |                           |             |               |
|          | Excavation    | 44.2                | 58                          | 58                        | 1           |               |
|          | Fill          | 0                   | 0                           | 0                         | 1           | 214           |
| 6+75.00  | DIRT          |                     |                             |                           |             |               |
|          | Excavation    | 45.8                | 42                          | 42                        | 1           |               |
|          | Fill          | 0                   | 0                           | 0                         | 1           | 214           |
| 7+00.00  | DIRT          |                     |                             |                           |             |               |
|          | Excavation    | 43                  | 41                          | 41                        | 1           |               |
|          | Fill          | 0.1                 | 0                           | 0                         | 1           | 226           |
| 7+25.00  | DIRT          |                     |                             |                           |             |               |
|          | Excavation    | 37.4                | 37                          | 37                        | 1           |               |
|          | Fill          | 0.8                 | 0                           | 0                         | 1           | 234           |
| 7+50.00  | DIRT          |                     |                             |                           |             |               |
|          | Excavation    | 35.5                | 34                          | 34                        | 1           |               |
|          | Fill          | 0                   | 0                           | 0                         | 1           | 240           |
| 8+00.00  | DIRT          |                     |                             |                           |             |               |
|          | Excavation    | 64.7                | 93                          | 93                        | 1           |               |
|          | Fill          | 0.6                 | 1                           | 1                         | 1           | 304           |
| 8+29.00  | DIRT          |                     |                             |                           |             |               |
|          | Excavation    | 51.8                | 63                          | 63                        | 1           |               |
|          | Fill          | 1.1                 | 1                           | 1                         | 1           | 274           |
| 8+50.00  | DIRT          |                     |                             |                           |             |               |
|          | Excavation    | 38.1                | 35                          | 35                        | 1           |               |
|          | Fill          | 0                   | 0                           | 0                         | 1           | 247           |
| 9+00.00  | DIRT          |                     |                             |                           |             |               |
|          | Excavation    | 25.9                | 59                          | 59                        | 1           |               |
|          | Fill          | 4.4                 | 4                           | 4                         | 1           | 269           |
| 9+50.00  | DIRT          |                     |                             |                           |             |               |
|          | Excavation    | 34.3                | 56                          | 56                        | 1           |               |
|          | Fill          | 0.7                 | 5                           | 5                         | 1           | 258           |
| 9+69.00  | DIRT          |                     |                             |                           |             |               |
|          | Excavation    | 38.1                | 25                          | 25                        | 1           |               |
|          | Fill          | 0                   | 0                           | 0                         | 1           | 230           |
| 9+92.00  | DIRT          |                     |                             |                           |             |               |
|          | Excavation    | 38                  | 32                          | 32                        | 1           |               |
|          | Fill          | 0                   | 0                           | 0                         | 1           | 240           |
| 10+00.00 | DIRT          |                     |                             |                           |             |               |
|          | Excavation    | 37.2                | 11                          | 11                        | 1           |               |
|          | Fill          | 1.2                 | 0                           | 0                         | 1           | 226           |
| 10+50.00 | DIRT          |                     |                             |                           |             |               |
|          | Excavation    | 27.9                | 60                          | 60                        | 1           |               |
|          | Fill          | 0                   | 1                           | 1                         | 1           | 276           |
| 10+89.00 | DIRT          |                     |                             |                           |             |               |
|          | Excavation    | 24.2                | 38                          | 38                        | 1           |               |
|          | Fill          | 0                   | 0                           | 0                         | 1           | 260           |
| 11+00.00 | DIRT          |                     |                             |                           |             |               |
|          | Excavation    | 29.8                | 11                          | 11                        | 1           |               |
|          | Fill          | 0                   | 0                           | 0                         | 1           | 234           |
| 11+50.00 | DIRT          |                     |                             |                           |             |               |
|          | Excavation    | 24                  | 50                          | 50                        | 1           |               |
|          | Fill          | 0                   | 0                           | 0                         | 1           | 274           |

| Station                                     | Material Name        | End Areas (sq. ft.) | Unadjusted Volumes (cu.yd.)         | Adjusted Volumes (cu.yd.)         | Mult Factor        | Mass Ordinate |
|---|----------------------|---------------------|-------------------------------------|-----------------------------------|--------------------|---------------|
| 11+87.00                                    | DIRT                 |                     |                                     |                                   |                    |               |
|   | Excavation           | 3.9                 | 19                                  | 19                                | 1                  |               |
|   | Fill                 | 0                   | 0                                   | 0                                 | 1                  | 246           |
|   | Fill                 | 0                   | 0                                   | 0                                 | 1                  | 236           |
| 9+92.00                                     | DIRT                 |                     |                                     |                                   |                    |               |
|   | Excavation           | 38                  | 32                                  | 32                                | 1                  |               |
|   | Fill                 | 0                   | 0                                   | 0                                 | 1                  | 246           |
| 10+00.00                                    | DIRT                 |                     |                                     |                                   |                    |               |
|   | Excavation           | 37.2                | 11                                  | 11                                | 1                  |               |
|   | Fill                 | 1.2                 | 0                                   | 0                                 | 1                  | 232           |
| 10+50.00                                    | DIRT                 |                     |                                     |                                   |                    |               |
|   | Excavation           | 24.1                | 57                                  | 57                                | 1                  |               |
|   | Fill                 | 0                   | 1                                   | 1                                 | 1                  | 279           |
| 10+89.00                                    | DIRT                 |                     |                                     |                                   |                    |               |
|   | Excavation           | 24.2                | 35                                  | 35                                | 1                  |               |
|   | Fill                 | 0                   | 0                                   | 0                                 | 1                  | 264           |
| 11+00.00                                    | DIRT                 |                     |                                     |                                   |                    |               |
|   | Excavation           | 29.8                | 11                                  | 11                                | 1                  |               |
|   | Fill                 | 0                   | 0                                   | 0                                 | 1                  | 241           |
| 11+50.00                                    | DIRT                 |                     |                                     |                                   |                    |               |
|   | Excavation           | 24                  | 50                                  | 50                                | 1                  |               |
|   | Fill                 | 0                   | 0                                   | 0                                 | 1                  | 281           |
| 11+87.00                                    | DIRT                 |                     |                                     |                                   |                    |               |
|   | Excavation           | 3.9                 | 19                                  | 19                                | 1                  |               |
|   | Fill                 | 0                   | 0                                   | 0                                 | 1                  | 253           |
| <b>BORDER STREET - GRAND SUMMARY TOTALS</b> |                      |                     |                                     |                                   |                    |               |
|   | <b>Material Name</b> |                     | <b>Unadjusted Volumes (cu. yd.)</b> | <b>Adjusted Volumes (cu. yd.)</b> | <b>Mult Factor</b> |               |
|   | DIRT                 |                     |                                     |                                   |                    |               |
|   | Excavation           |                     | 1571                                | 1571                              | 1                  |               |
|   | Fill                 |                     | 15                                  | 15                                | 1                  |               |



NAME: Randy P. Janak PE  
 DATE: 2/24/2026



**CivilCorp**  
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**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

**EARTHWORK SUMMARY**

SHEET 1 OF 3

|             |           |           |    |
|-------------|-----------|-----------|----|
| PROJECT NO. | 25-015-03 | SHEET NO. | 12 |
| REVISIONS   |           |           |    |
| NO.         |           |           |    |
|             |           |           |    |

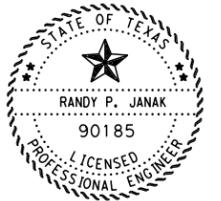
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CENTRAL AVENUE

| Station | Material Name | End Areas (sq. ft.) | Unadjusted Volumes (cu.yd.) | Adjusted Volumes (cu.yd.) | Mult Factor | Mass Ordinate |
|---------|---------------|---------------------|-----------------------------|---------------------------|-------------|---------------|
| 0+34.48 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 36                  | 0                           | 0                         | 1           |               |
|         | Fill          | 0                   | 0                           | 0                         | 1           | 0             |
| 0+56.69 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 36.2                | 30                          | 30                        | 1           |               |
|         | Fill          | 0                   | 0                           | 0                         | 1           | 30            |
| 1+03.32 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 36.6                | 63                          | 63                        | 1           |               |
|         | Fill          | 1.1                 | 1                           | 1                         | 1           | 66            |
| 1+45.35 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 36.3                | 57                          | 57                        | 1           |               |
|         | Fill          | 1.7                 | 2                           | 2                         | 1           | 68            |
| 2+05.18 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 35.6                | 80                          | 80                        | 1           |               |
|         | Fill          | 1.3                 | 3                           | 3                         | 1           | 99            |
| 2+45.00 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 39                  | 55                          | 55                        | 1           |               |
|         | Fill          | 3.1                 | 3                           | 3                         | 1           | 84            |
| 3+09.26 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 41.5                | 96                          | 96                        | 1           |               |
|         | Fill          | 1.4                 | 5                           | 5                         | 1           | 128           |
| 3+29.26 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 42.9                | 31                          | 31                        | 1           |               |
|         | Fill          | 0                   | 1                           | 1                         | 1           | 84            |
| 3+66.26 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 42.8                | 59                          | 59                        | 1           |               |
|         | Fill          | 0.3                 | 0                           | 0                         | 1           | 120           |
| 3+95.26 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 46.5                | 48                          | 48                        | 1           |               |
|         | Fill          | 0                   | 0                           | 0                         | 1           | 127           |
| 4+27.76 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 44                  | 54                          | 54                        | 1           |               |
|         | Fill          | 0.9                 | 1                           | 1                         | 1           | 147           |
| 4+37.26 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 44.3                | 16                          | 16                        | 1           |               |
|         | Fill          | 0.5                 | 0                           | 0                         | 1           | 125           |
| 4+52.26 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 44.9                | 25                          | 25                        | 1           |               |
|         | Fill          | 0                   | 0                           | 0                         | 1           | 139           |
| 4+73.26 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 43.3                | 34                          | 34                        | 1           |               |
|         | Fill          | 0                   | 0                           | 0                         | 1           | 156           |
| 4+96.26 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 44.6                | 37                          | 37                        | 1           |               |
|         | Fill          | 0.2                 | 0                           | 0                         | 1           | 169           |
| 5+15.26 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 43.7                | 31                          | 31                        | 1           |               |
|         | Fill          | 0.3                 | 0                           | 0                         | 1           | 173           |

| Station | Material Name | End Areas (sq. ft.) | Unadjusted Volumes (cu.yd.) | Adjusted Volumes (cu.yd.) | Mult Factor | Mass Ordinate |
|---------|---------------|---------------------|-----------------------------|---------------------------|-------------|---------------|
| 5+37.26 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 43.1                | 35                          | 35                        | 1           |               |
|         | Fill          | 0.1                 | 0                           | 0                         | 1           | 186           |
| 5+73.26 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 41.5                | 56                          | 56                        | 1           |               |
|         | Fill          | 0.3                 | 0                           | 0                         | 1           | 216           |
| 5+85.26 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 42.6                | 19                          | 19                        | 1           |               |
|         | Fill          | 0                   | 0                           | 0                         | 1           | 194           |
| 6+09.26 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 41.3                | 37                          | 37                        | 1           |               |
|         | Fill          | 0.4                 | 0                           | 0                         | 1           | 217           |
| 6+37.26 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 40.6                | 42                          | 42                        | 1           |               |
|         | Fill          | 0.4                 | 0                           | 0                         | 1           | 233           |
| 6+69.26 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 39.3                | 47                          | 47                        | 1           |               |
|         | Fill          | 0                   | 0                           | 0                         | 1           | 249           |
| 6+95.26 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 38                  | 37                          | 37                        | 1           |               |
|         | Fill          | 0.4                 | 0                           | 0                         | 1           | 250           |
| 7+17.26 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 37.5                | 31                          | 31                        | 1           |               |
|         | Fill          | 0.6                 | 0                           | 0                         | 1           | 252           |
| 7+73.26 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 40.4                | 81                          | 81                        | 1           |               |
|         | Fill          | 1.2                 | 2                           | 2                         | 1           | 306           |
| 7+90.26 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 40.3                | 25                          | 25                        | 1           |               |
|         | Fill          | 0.5                 | 1                           | 1                         | 1           | 268           |
| 8+21.26 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 41.7                | 47                          | 47                        | 1           |               |
|         | Fill          | 0.1                 | 0                           | 0                         | 1           | 296           |
| 8+37.26 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 40.4                | 24                          | 24                        | 1           |               |
|         | Fill          | 0.9                 | 0                           | 0                         | 1           | 286           |
| 8+47.26 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 40                  | 15                          | 15                        | 1           |               |
|         | Fill          | 0.8                 | 0                           | 0                         | 1           | 283           |
| 8+87.26 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 38.3                | 58                          | 58                        | 1           |               |
|         | Fill          | 0.9                 | 1                           | 1                         | 1           | 330           |
| 9+05.26 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 38.1                | 25                          | 25                        | 1           |               |
|         | Fill          | 1.1                 | 1                           | 1                         | 1           | 309           |
| 9+37.26 | DIRT          |                     |                             |                           |             |               |
|         | Excavation    | 34.2                | 43                          | 43                        | 1           |               |
|         | Fill          | 2.3                 | 2                           | 2                         | 1           | 329           |

| Station                                      | Material Name        | End Areas (sq. ft.) | Unadjusted Volumes (cu.yd.)         | Adjusted Volumes (cu.yd.)         | Mult Factor        | Mass Ordinate |
|--|----------------------|---------------------|-------------------------------------|-----------------------------------|--------------------|---------------|
| 9+70.26                                      | DIRT                 |                     |                                     |                                   |                    |               |
|  | Excavation           | 32.5                | 41                                  | 41                                | 1                  |               |
|  | Fill                 | 2.6                 | 3                                   | 3                                 | 1                  | 332           |
| 9+97.26                                      | DIRT                 |                     |                                     |                                   |                    |               |
|  | Excavation           | 33.2                | 33                                  | 33                                | 1                  |               |
|  | Fill                 | 2.3                 | 2                                   | 2                                 | 1                  | 327           |
| 10+27.26                                     | DIRT                 |                     |                                     |                                   |                    |               |
|  | Excavation           | 37.7                | 39                                  | 39                                | 1                  |               |
|  | Fill                 | 0.7                 | 2                                   | 2                                 | 1                  | 335           |
| 10+37.26                                     | DIRT                 |                     |                                     |                                   |                    |               |
|  | Excavation           | 39.2                | 14                                  | 14                                | 1                  |               |
|  | Fill                 | 0.3                 | 0                                   | 0                                 | 1                  | 317           |
| 10+60.26                                     | DIRT                 |                     |                                     |                                   |                    |               |
|  | Excavation           | 40.9                | 34                                  | 34                                | 1                  |               |
|  | Fill                 | 0.1                 | 0                                   | 0                                 | 1                  | 341           |
| 10+80.26                                     | DIRT                 |                     |                                     |                                   |                    |               |
|  | Excavation           | 36.3                | 29                                  | 29                                | 1                  |               |
|  | Fill                 | 0.2                 | 0                                   | 0                                 | 1                  | 344           |
| <b>CENTRAL AVENUE - GRAND SUMMARY TOTALS</b> |                      |                     |                                     |                                   |                    |               |
|  | <b>Material Name</b> |                     | <b>Unadjusted Volumes (cu. yd.)</b> | <b>Adjusted Volumes (cu. yd.)</b> | <b>Mult Factor</b> |               |
|  | <b>DIRT</b>          |                     |                                     |                                   |                    |               |
|  | <b>Excavation</b>    |                     | <b>1528</b>                         | <b>1528</b>                       | <b>1</b>           |               |
|  | <b>Fill</b>          |                     | <b>30</b>                           | <b>30</b>                         | <b>1</b>           |               |



NAME: Randy P. Janak PE  
 DATE: 2/24/2026



**CivilCorp**  
 an ESP COMPANY  
 4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
 TEL: (361) 570-7500 TXSURV FIRM #100576-00 TXENG FIRM #10283

**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

**EARTHWORK SUMMARY**

SHEET 2 OF 3

PROJECT NO. 25-015-03 SHEET NO. 13

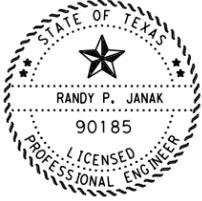
REVISIONS

| NO. |  |
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**WAREHOUSE STREET**

| Station  | Material Name        | End Areas<br>(sq. ft.) | Unadjusted Volumes<br>(cu.yd.)          | Adjusted Volumes<br>(cu.yd.)          | Mult Factor        | Mass Ordinate |
|--|----------------------|------------------------|---|---------------------------------------|--------------------|---------------|
| 0+32.00  | DIRT                 |                        |   |                                       |                    |               |
|  | Excavation           | 31.1                   | 0                                       | 0                                     | 1                  |               |
|  | Fill                 | 0.2                    | 0                                       | 0                                     | 1                  | 0             |
| 0+50.00  | DIRT                 |                        |   |                                       |                    |               |
|  | Excavation           | 30.7                   | 21                                      | 21                                    | 1                  |               |
|  | Fill                 | 0.6                    | 0                                       | 0                                     | 1                  | 21            |
| 0+85.00  | DIRT                 |                        |   |                                       |                    |               |
|  | Excavation           | 29                     | 39                                      | 39                                    | 1                  |               |
|  | Fill                 | 0.7                    | 1                                       | 1                                     | 1                  | 38            |
| 1+00.00  | DIRT                 |                        |   |                                       |                    |               |
|  | Excavation           | 34.5                   | 18                                      | 18                                    | 1                  |               |
|  | Fill                 | 0                      | 0                                       | 0                                     | 1                  | 17            |
| 1+41.00  | DIRT                 |                        |   |                                       |                    |               |
|  | Excavation           | 32.5                   | 51                                      | 51                                    | 1                  |               |
|  | Fill                 | 0.5                    | 0                                       | 0                                     | 1                  | 51            |
| 1+50.00  | DIRT                 |                        |   |                                       |                    |               |
|  | Excavation           | 31.8                   | 11                                      | 11                                    | 1                  |               |
|  | Fill                 | 0.9                    | 0                                       | 0                                     | 1                  | 15            |
| 2+00.00  | DIRT                 |                        |   |                                       |                    |               |
|  | Excavation           | 35.4                   | 62                                      | 62                                    | 1                  |               |
|  | Fill                 | 0                      | 1                                       | 1                                     | 1                  | 66            |
| 2+50.00  | DIRT                 |                        |   |                                       |                    |               |
|  | Excavation           | 36.4                   | 66                                      | 66                                    | 1                  |               |
|  | Fill                 | 0                      | 0                                       | 0                                     | 1                  | 76            |
| 2+74.00  | DIRT                 |                        |   |                                       |                    |               |
|  | Excavation           | 45                     | 36                                      | 36                                    | 1                  |               |
|  | Fill                 | 0.1                    | 0                                       | 0                                     | 1                  | 50            |
| 3+00.00  | DIRT                 |                        |   |                                       |                    |               |
|  | Excavation           | 33.8                   | 38                                      | 38                                    | 1                  |               |
|  | Fill                 | 0.6                    | 0                                       | 0                                     | 1                  | 52            |
| 3+50.00  | DIRT                 |                        |   |                                       |                    |               |
|  | Excavation           | 31.3                   | 60                                      | 60                                    | 1                  |               |
|  | Fill                 | 1.6                    | 2                                       | 2                                     | 1                  | 74            |
| 4+03.00  | DIRT                 |                        |   |                                       |                    |               |
|  | Excavation           | 29.4                   | 60                                      | 60                                    | 1                  |               |
|  | Fill                 | 4.3                    | 6                                       | 6                                     | 1                  | 71            |
| <b>WAREHOUSE STREET - GRAND SUMMARY TOTALS</b> |                      |                        |   |                                       |                    |               |
|  | <b>Material Name</b> |                        | <b>Unadjusted Volumes<br/>(cu. yd.)</b> | <b>Adjusted Volumes<br/>(cu. yd.)</b> | <b>Mult Factor</b> |               |
|  | DIRT                 |                        |   |                                       |                    |               |
|  | Excavation           |                        | <b>462</b>                              | <b>462</b>                            | <b>1</b>           |               |
|  | Fill                 |                        | <b>10</b>                               | <b>10</b>                             | <b>1</b>           |               |

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NAME: *Randy P. Janak* PE  
 DATE: *2/24/2026*



**CITY OF PORT LAVACA**  
TEXAS



an ESP COMPANY  
 4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
 TEL: (361) 570-7500 TXSURV FIRM #100576-00 TXENG FIRM #10283

**WESTERN HEIGHTS STREET  
IMPROVEMENT PROJECT**

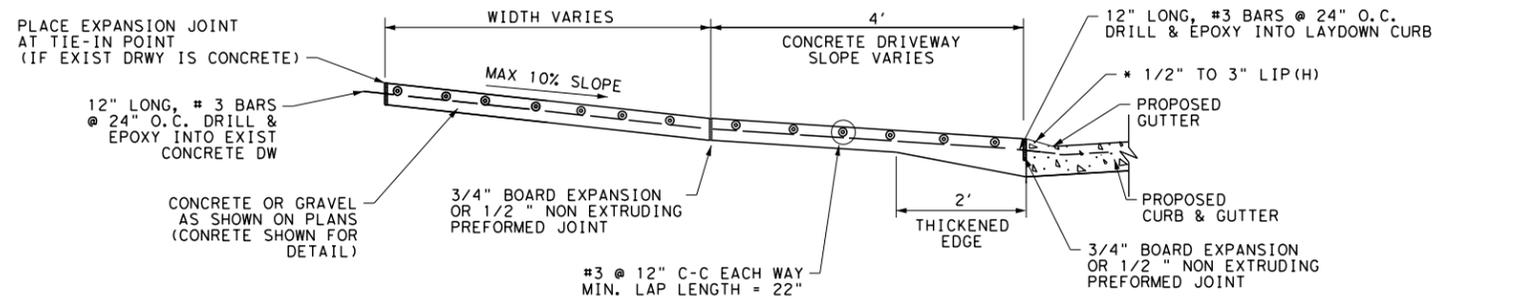
**EARTHWORK SUMMARY**

SHEET 3 OF 3

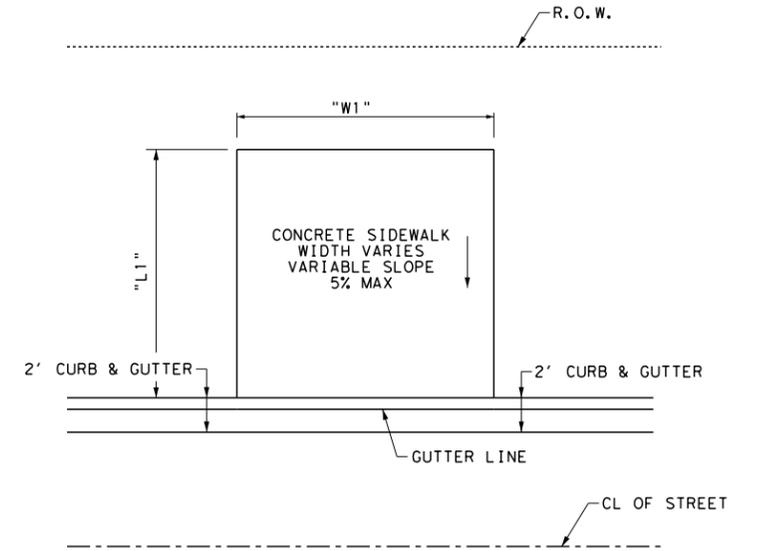
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| PROJECT NO. | 25-015-03 | SHEET NO.<br>14 |
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| NO.         |           |                 |
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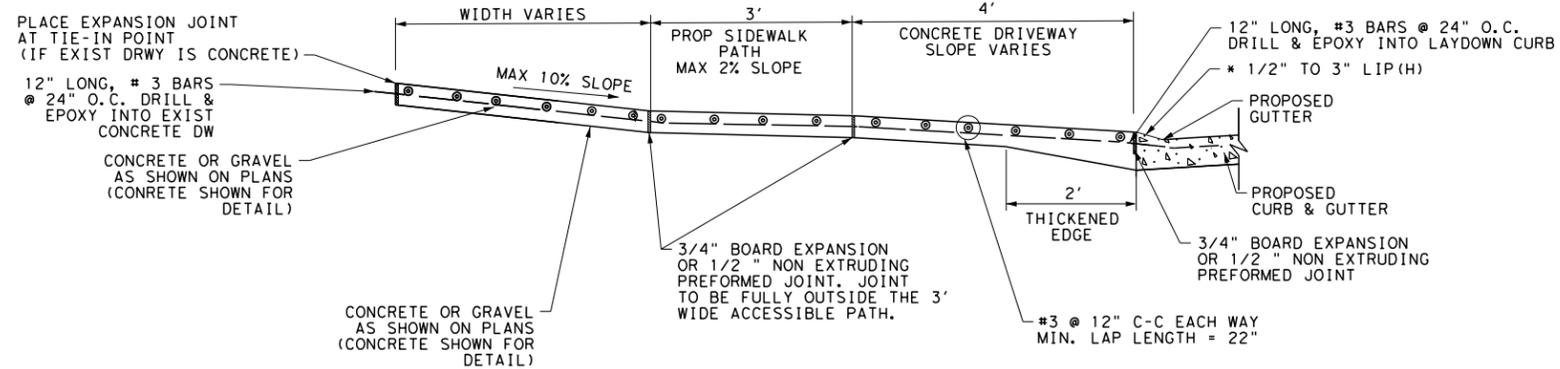
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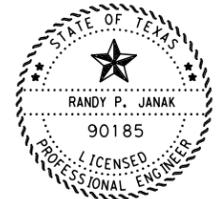
**DRIVEWAY SECTION w/o SIDEWALK  
 BORDER, CENTRAL AND WAREHOUSE ST**



**PLAN OF TYPICAL  
 RESIDENTIAL SIDEWALK**



**DRIVEWAY SECTION w/ SIDEWALK  
 BORDER AND CENTRAL ST**



NAME: *Randy P. Janak* PE  
 DATE: 2/24/2026



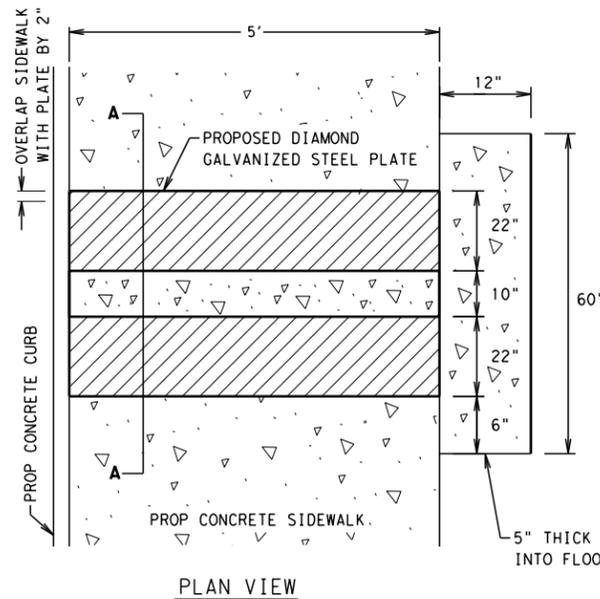
**WESTERN HEIGHTS STREET  
 IMPROVEMENT PROJECT**

**DRIVEWAY, SIDEWALK AND  
 DITCH DRAIN DETAILS**

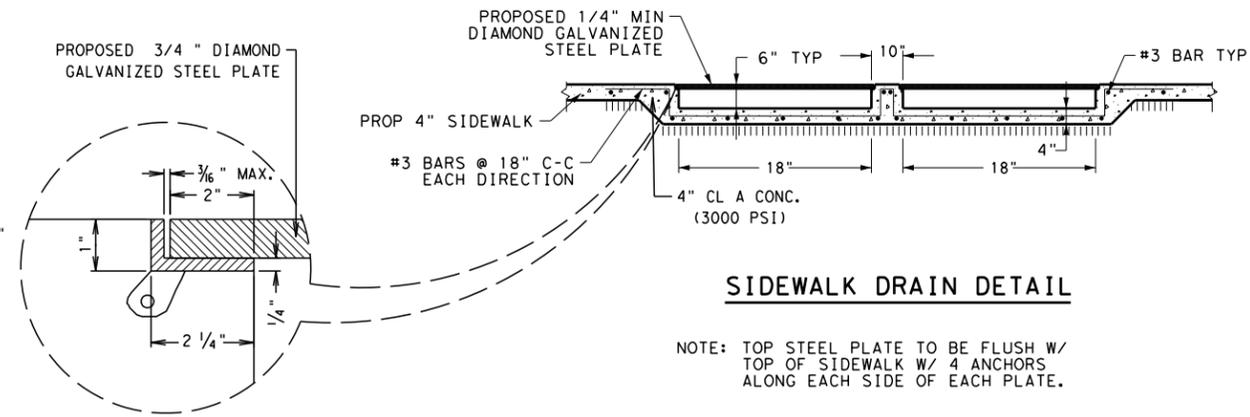
SCALE: N.T.S. SHEET 2 OF 3

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| PROJECT NO. | 25-015-03 | SHEET NO. | 16 |
| REVISIONS   |           |           |    |
| NO.         |           |           |    |
|             |           |           |    |

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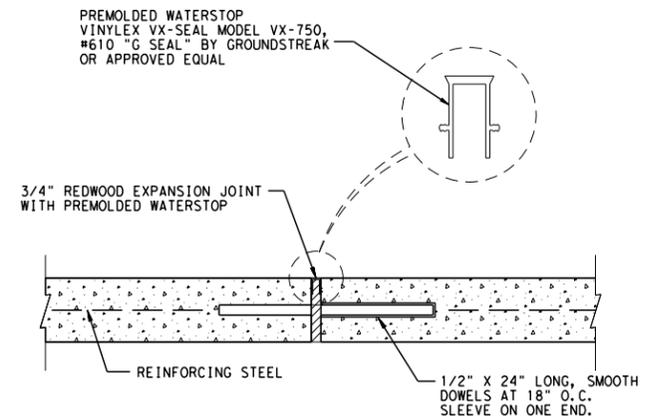


PLAN VIEW

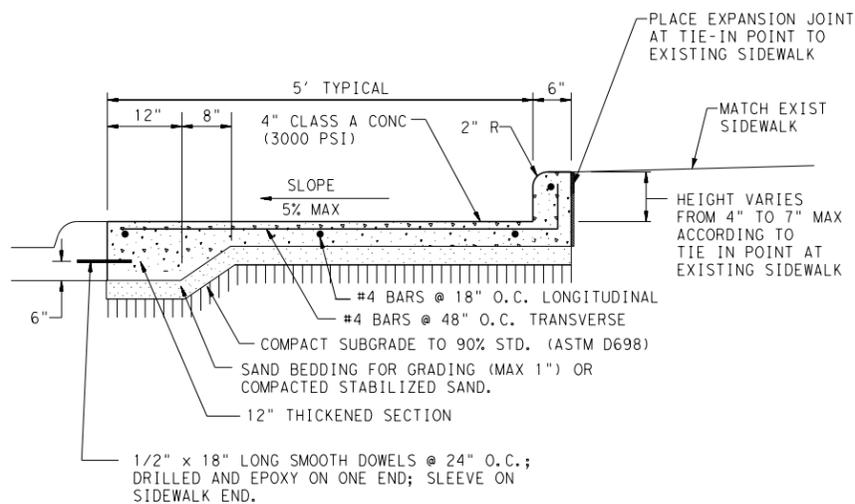


SIDEWALK DRAIN DETAIL

NOTE: TOP STEEL PLATE TO BE FLUSH W/ TOP OF SIDEWALK W/ 4 ANCHORS ALONG EACH SIDE OF EACH PLATE.

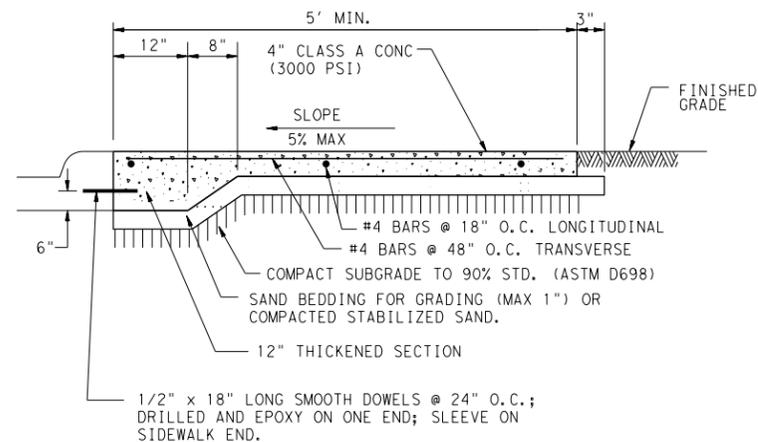


EXPANSION JOINT DETAIL



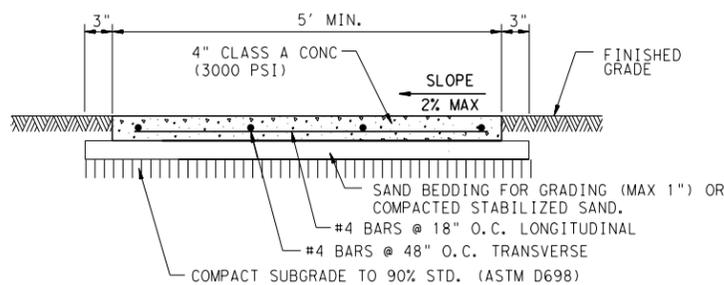
TYPICAL RESIDENTIAL SIDEWALK SECTION

ATTACHED TO CURB



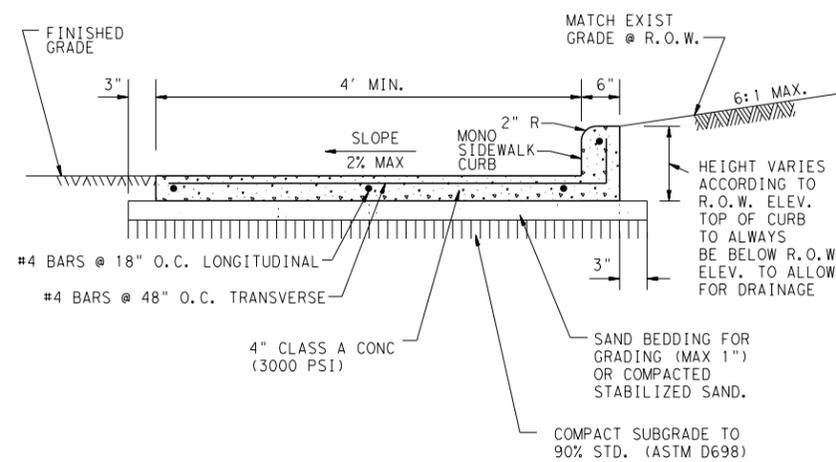
TYPICAL RESIDENTIAL SIDEWALK SECTION

ATTACHED TO CURB



TYPICAL RESIDENTIAL SIDEWALK SECTION

REMOTE FROM CURB

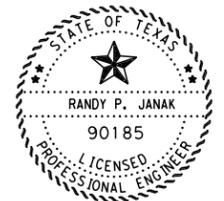


TYPICAL RESIDENTIAL SIDEWALK SECTION

REMOTE FROM CURB

GENERAL NOTES

1. PROVIDE 1" DEEP OR 1/4" THE THICKNESS OF THE CONCRETE, TOOLED CONTRACTION JOINTS AT SPACING EQUAL TO SIDEWALK WIDTH.
2. FINISH EXPOSED EDGES WITH 1/4" RADIUS.
3. ALL REBAR TO BE SET ON BAR CHAIRS. PLASTIC OR METAL BAR CHAIRS ARE ACCEPTABLE; NO BRICKS, BROKEN CONCRETE, ROCKS, ETC.
4. SEE DESIGN STANDARD PED-18 FOR SIDEWALK DETAILS AT LAVACA STREET STA 0+66 RT.



NAME: *Randy P. Janak* PE  
DATE: 2/24/2026

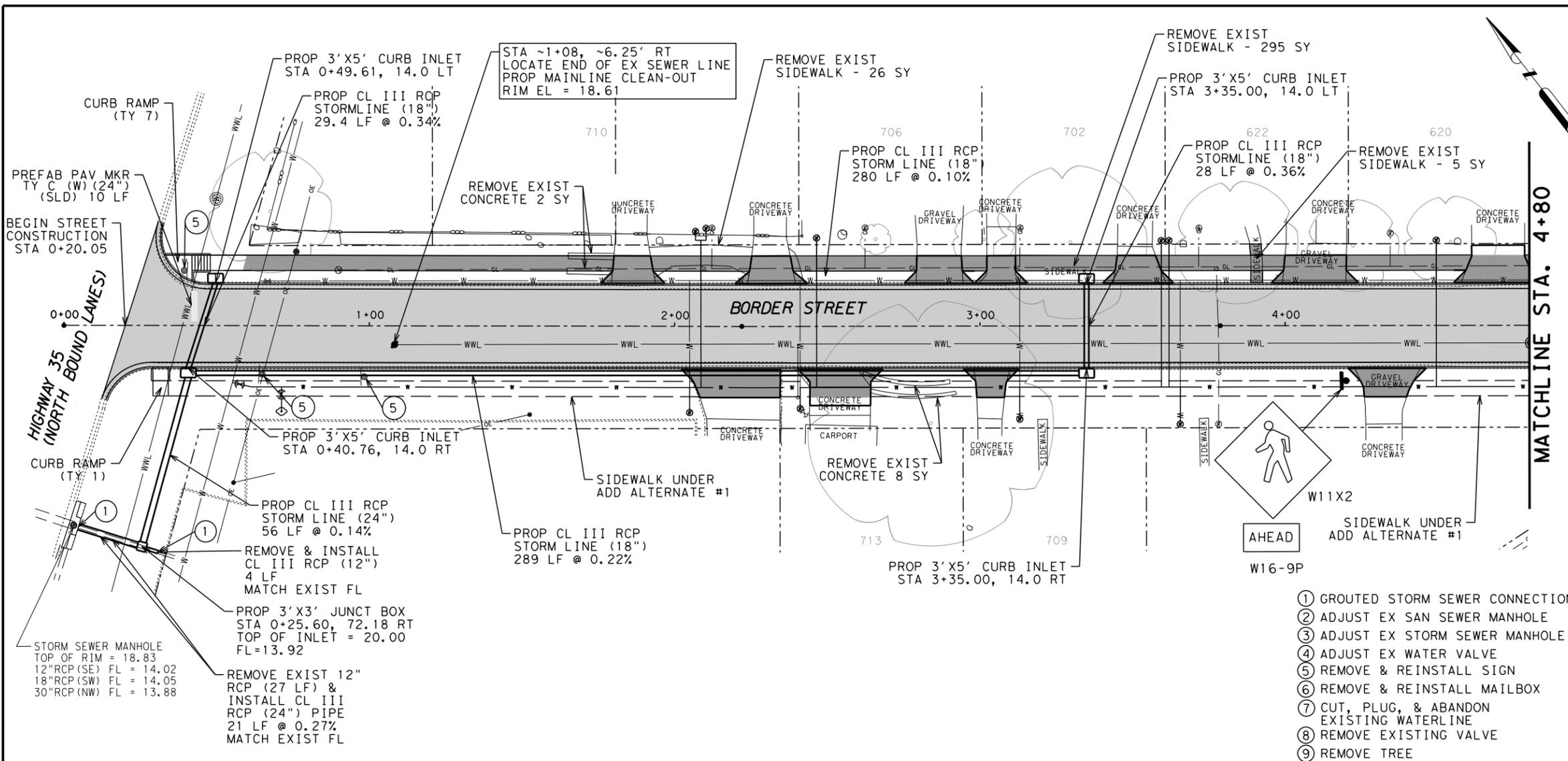


WESTERN HEIGHTS STREET IMPROVEMENT PROJECT

DRIVEWAY, SIDEWALK AND DITCH DRAIN DETAILS

|               |           |              |    |
|---------------|-----------|--------------|----|
| SCALE: N.T.S. |           | SHEET 3 OF 3 |    |
| PROJECT NO.   | 25-015-03 | SHEET NO.    | 17 |
| REVISIONS     |           |              |    |
| NO.           |           |              |    |
|               |           |              |    |

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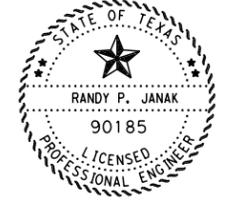
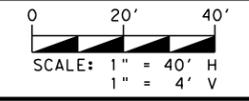
**LEGEND**

|     |     |                           |
|-----|-----|---------------------------|
| --- | GL  | EX GAS LINE               |
| ⊙   | ⊙   | EX GAS METER              |
| --- | OE  | EX OVERHEAD ELECTRIC      |
| --- | WWL | EX SANITARY SEWER LINE    |
| --- | --- | EX FENCE                  |
| --- | --- | EX R.O.W.                 |
| ⊙   | ⊙   | EX SANITARY SEWER MANHOLE |
| W   | W   | EX WATER LINE             |
| ⊙   | ⊙   | EX POWER POLE             |
| ⊙   | ⊙   | EX STORM DRAIN MANHOLE    |
| --- | --- | EX STORM LINE             |
| ⊙   | ⊙   | EX SIGN                   |
| ⊙   | ⊙   | EX MAILBOX                |
| ⊙   | ⊙   | EX FIRE HYDRANT           |
| ⊙   | ⊙   | EX WATER METER            |
| ⊙   | ⊙   | EX WATER VALVE            |
| ⊙   | ⊙   | PROP FIRE HYDRANT         |
| --- | --- | PROP SERVICE LINE         |
| W   | W   | PROP WATER MAIN           |
| ⊙   | ⊙   | PROP WATER SERVICE        |
| ⊙   | ⊙   | PROP WATER VALVE          |
| ⊙   | ⊙   | PROP PLUG                 |
| ⊙   | ⊙   | PROP REDUCER              |
| ⊙   | ⊙   | PROP CLEANOUT             |
| --- | --- | PROP STORM LINE           |

**NOTES:**

- FOR CURB INLETS, STA IS TO MIDDLE OF INLET AND OFFSET IS TO BACK OF CURB. FOR JUNCTION BOX, STA, OFFSET AND ELEVATION IS TO CENTER OF BOX.

- ① GROUTED STORM SEWER CONNECTION
- ② ADJUST EX SAN SEWER MANHOLE
- ③ ADJUST EX STORM SEWER MANHOLE
- ④ ADJUST EX WATER VALVE
- ⑤ REMOVE & REINSTALL SIGN
- ⑥ REMOVE & REINSTALL MAILBOX
- ⑦ CUT, PLUG, & ABANDON EXISTING WATERLINE
- ⑧ REMOVE EXISTING VALVE
- ⑨ REMOVE TREE



NAME: *Randy P. Janak* PE  
DATE: 2/24/2026

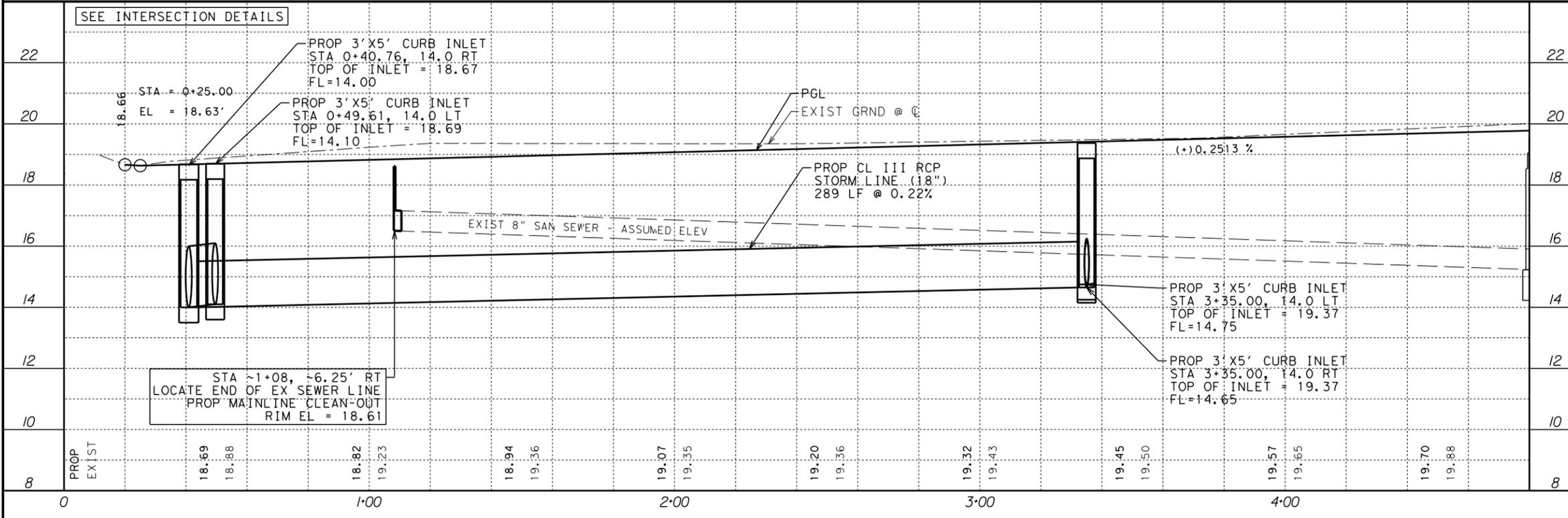


**CivilCorp**  
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TEL: (361)570-7500 TXSURV FIRM #100576-00 TXENG FIRM #10283

**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

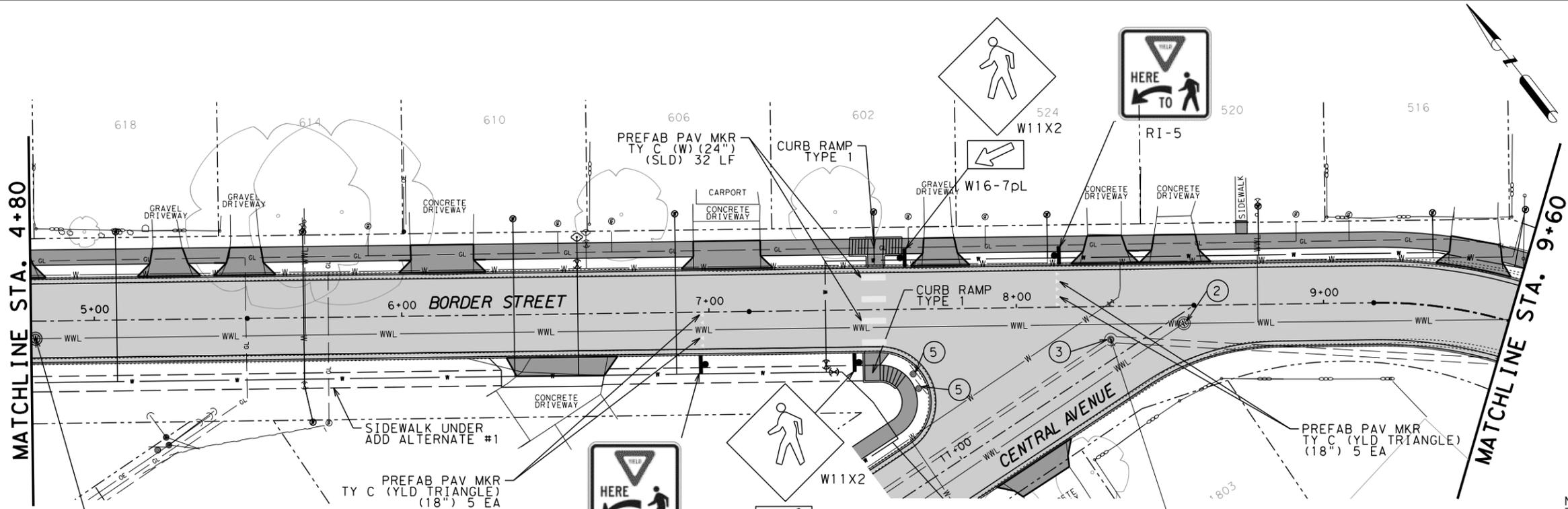
**BORDER STREET  
PLAN/PROFILE  
BEGIN TO STA. 4+80**

SHEET 1 OF 3



|             |           |           |    |
|-------------|-----------|-----------|----|
| PROJECT NO. | 25-015-03 | SHEET NO. | 18 |
| REVISIONS   |           |           |    |
| NO.         |           |           |    |

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**LEGEND**

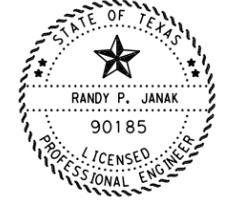
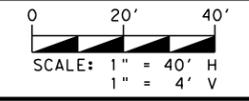
|     |     |     |                           |
|-----|-----|-----|---------------------------|
| --- | GL  | --- | EX GAS LINE               |
| ⊙   | ⊙   | --- | EX GAS METER              |
| --- | OE  | --- | EX OVERHEAD ELECTRIC      |
| --- | WWL | --- | EX SANITARY SEWER LINE    |
| --- | --- | --- | EX FENCE                  |
| --- | --- | --- | EX R.O.W.                 |
| ⊙   | ⊙   | --- | EX SANITARY SEWER MANHOLE |
| --- | W   | --- | EX WATER LINE             |
| ⊙   | ⊙   | --- | EX POWER POLE             |
| ⊙   | ⊙   | --- | EX STORM DRAIN MANHOLE    |
| --- | --- | --- | EX STORM LINE             |
| ⊙   | ⊙   | --- | EX SIGN                   |
| ⊙   | ⊙   | --- | EX MAILBOX                |
| ⊙   | ⊙   | --- | EX FIRE HYDRANT           |
| ⊙   | ⊙   | --- | EX WATER METER            |
| ⊙   | ⊙   | --- | EX WATER VALVE            |
| ⊙   | ⊙   | --- | PROP FIRE HYDRANT         |
| --- | --- | --- | PROP SERVICE LINE         |
| --- | --- | --- | PROP WATER MAIN           |
| ⊙   | ⊙   | --- | PROP WATER SERVICE        |
| ⊙   | ⊙   | --- | PROP WATER VALVE          |
| ⊙   | ⊙   | --- | PROP PLUG                 |
| ⊙   | ⊙   | --- | PROP REDUCER              |
| ⊙   | ⊙   | --- | PROP CLEANOUT             |
| --- | --- | --- | PROP STORM LINE           |

STA 4+80.32, ~6.25' RT  
LOCATE EX SEWER LINE  
INSTALL PROP 4' DIA FIBERGLASS  
SS MANHOLE  
RIM EL = 19.55  
FL 8" ~15.2 (MEE)

STORM SEWER MANHOLE  
TOP OF RIM = 20.97  
18"RCP (W) FL = 15.62  
24"RCP (SE) FL = 15.62

**NOTES:**  
1. FOR CURB INLETS, STA IS TO MIDDLE OF INLET AND OFFSET IS TO BACK OF CURB. FOR JUNCTION BOX, STA, OFFSET AND ELEVATION IS TO CENTER OF BOX.

- ① GROUTED STORM SEWER CONNECTION
- ② ADJUST EX SAN SEWER MANHOLE
- ③ ADJUST EX STORM SEWER MANHOLE
- ④ ADJUST EX WATER VALVE
- ⑤ REMOVE & REINSTALL SIGN
- ⑥ REMOVE & REINSTALL MAILBOX
- ⑦ CUT, PLUG, & ABANDON EXISTING WATERLINE
- ⑧ REMOVE EXISTING VALVE
- ⑨ REMOVE TREE



NAME: *Randy P. Janak* PE  
DATE: 2/24/2026



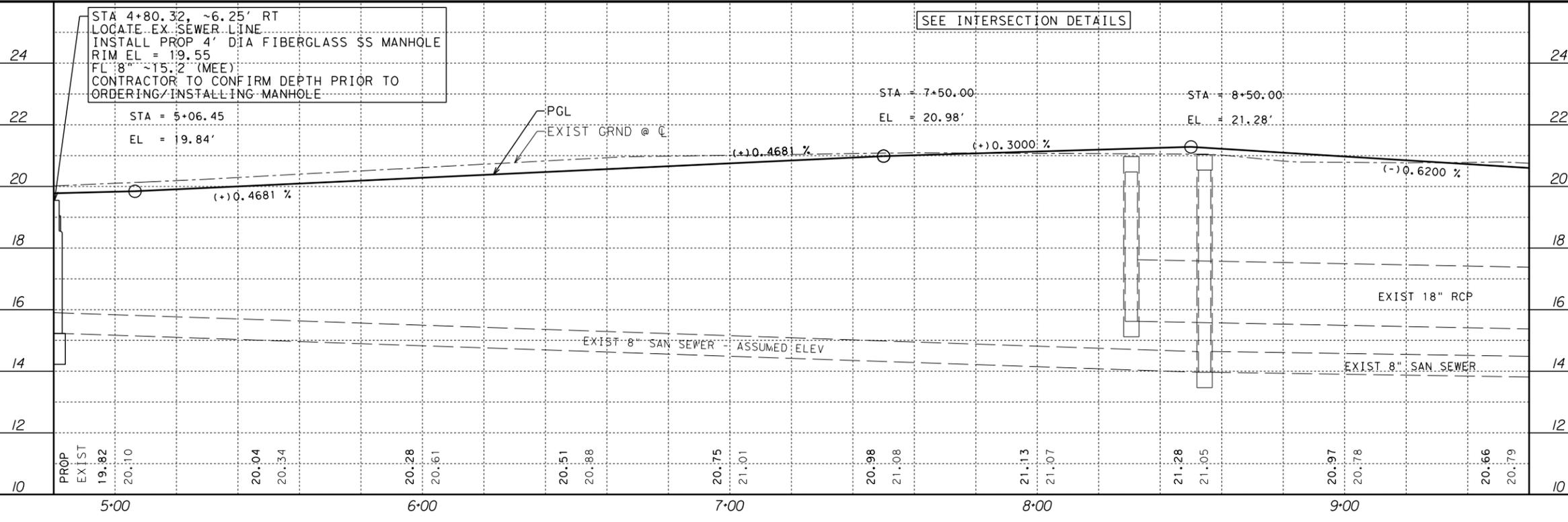
**CivilCorp**  
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TEL: (361) 570-7500 TXSURV FIRM #100576-00 TXENG FIRM #10283

**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

**BORDER STREET PLAN/PROFILE STA. 4+80 TO STA. 9+60**

SHEET 2 OF 3

|             |           |           |    |
|-------------|-----------|-----------|----|
| PROJECT NO. | 25-015-03 | SHEET NO. | 19 |
| REVISIONS   |           |           |    |
| NO.         |           |           |    |



STA 4+80.32, ~6.25' RT  
LOCATE EX SEWER LINE  
INSTALL PROP 4' DIA FIBERGLASS SS MANHOLE  
RIM EL = 19.55  
FL 8" ~15.2 (MEE)  
CONTRACTOR TO CONFIRM DEPTH PRIOR TO ORDERING/INSTALLING MANHOLE

SEE INTERSECTION DETAILS

STA = 7+50.00 EL = 20.98'  
STA = 8+50.00 EL = 21.28'

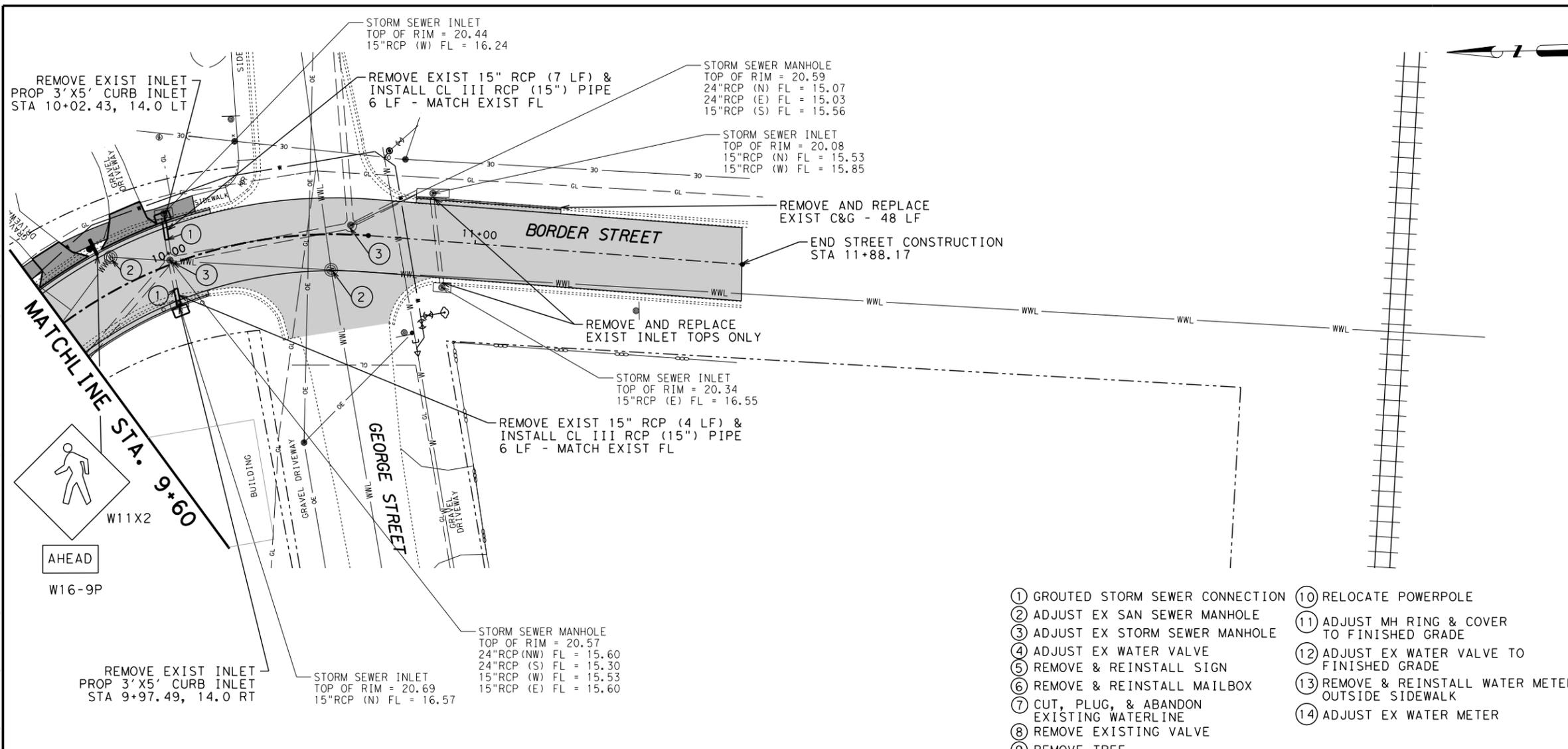
EXIST 18" RCP

EXIST 8" SAN SEWER ASSUMED ELEV

EXIST 8" SAN SEWER

|    |       |       |       |       |       |       |       |       |       |       |       |       |    |
|----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----|
| 10 | PROP  | 19.82 | 20.04 | 20.28 | 20.51 | 20.75 | 20.98 | 21.13 | 21.28 | 20.97 | 20.66 | 20.79 | 10 |
|    | EXIST | 20.10 | 20.34 | 20.61 | 20.88 | 21.01 | 21.08 | 21.07 | 21.05 | 20.78 | 20.79 |       |    |

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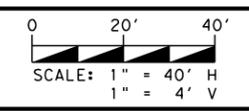
**LEGEND**

|     |                           |
|-----|---------------------------|
| GL  | EX GAS LINE               |
| ⊙   | EX GAS METER              |
| OE  | EX OVERHEAD ELECTRIC      |
| WWL | EX SANITARY SEWER LINE    |
| --- | EX FENCE                  |
| --- | EX R.O.W.                 |
| ⊙   | EX SANITARY SEWER MANHOLE |
| W   | EX WATER LINE             |
| ⊙   | EX POWER POLE             |
| ⊙   | EX STORM DRAIN MANHOLE    |
| --- | EX STORM LINE             |
| ⊙   | EX SIGN                   |
| □   | EX MAILBOX                |
| ⊙   | EX FIRE HYDRANT           |
| ⊙   | EX WATER METER            |
| ⊙   | EX WATER VALVE            |
| ⊙   | PROP FIRE HYDRANT         |
| --- | PROP SERVICE LINE         |
| W   | PROP WATER MAIN           |
| ⊙   | PROP WATER SERVICE        |
| ⊙   | PROP WATER VALVE          |
| □   | PROP PLUG                 |
| △   | PROP REDUCER              |
| ■   | PROP CLEANOUT             |
| --- | PROP STORM LINE           |

**NOTES:**

- FOR CURB INLETS, STA IS TO MIDDLE OF INLET AND OFFSET IS TO BACK OF CURB. FOR JUNCTION BOX, STA, OFFSET AND ELEVATION IS TO CENTER OF BOX.

- |   |   |
|---|---|
| ① GROUTED STORM SEWER CONNECTION          | ⑩ RELOCATE POWERPOLE                              |
| ② ADJUST EX SAN SEWER MANHOLE             | ⑪ ADJUST MH RING & COVER TO FINISHED GRADE        |
| ③ ADJUST EX STORM SEWER MANHOLE           | ⑫ ADJUST EX WATER VALVE TO FINISHED GRADE         |
| ④ ADJUST EX WATER VALVE                   | ⑬ REMOVE & REINSTALL WATER METER OUTSIDE SIDEWALK |
| ⑤ REMOVE & REINSTALL SIGN                 | ⑭ ADJUST EX WATER METER                           |
| ⑥ REMOVE & REINSTALL MAILBOX              |   |
| ⑦ CUT, PLUG, & ABANDON EXISTING WATERLINE |   |
| ⑧ REMOVE EXISTING VALVE                   |   |
| ⑨ REMOVE TREE                             |   |



NAME: *Randy P. Janak* PE  
DATE: 2/24/2026



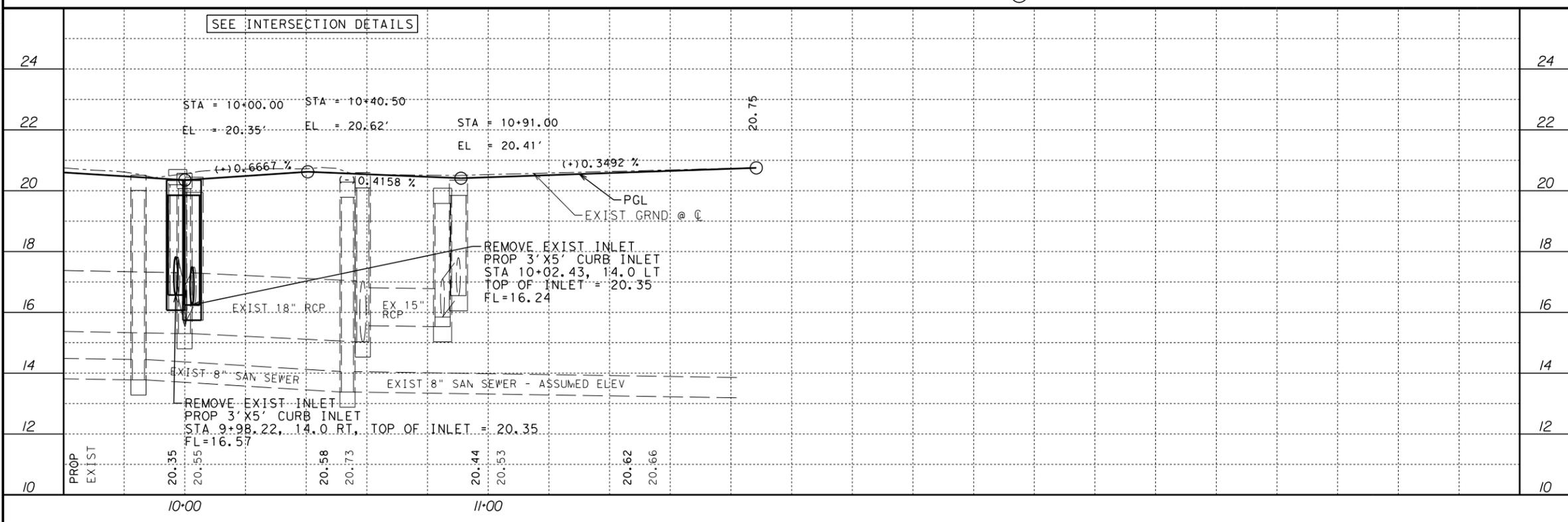
**CivilCorp**  
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4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
TEL: (361) 570-7500 TXSURV FIRM #100576-00 TXENG FIRM #10283

**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

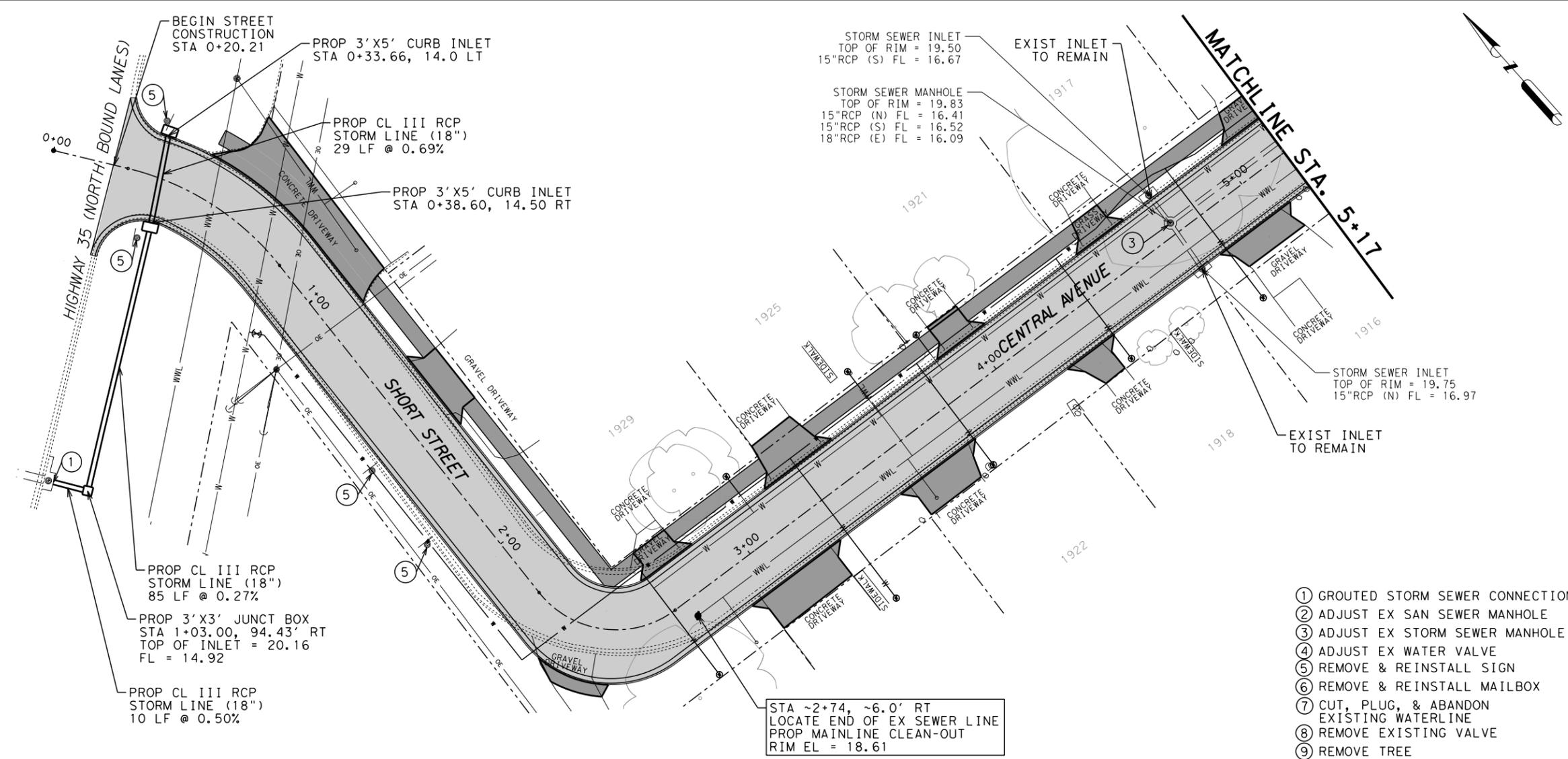
**BORDER STREET  
PLAN/PROFILE  
STA. 9+60 TO END**

SHEET 3 OF 3

|             |           |           |    |
|-------------|-----------|-----------|----|
| PROJECT NO. | 25-015-03 | SHEET NO. | 20 |
| REVISIONS   |           |           |    |
| NO.         |           |           |    |



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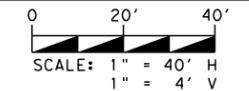
**LEGEND**

|     |     |     |                           |
|-----|-----|-----|---------------------------|
| --- | GL  | --- | EX GAS LINE               |
| ⊙   | ⊙   | --- | EX GAS METER              |
| --- | OE  | --- | EX OVERHEAD ELECTRIC      |
| --- | WWL | --- | EX SANITARY SEWER LINE    |
| --- |     | --- | EX FENCE                  |
| --- |     | --- | EX R.O.W.                 |
| ⊙   | ⊙   | --- | EX SANITARY SEWER MANHOLE |
| --- | W   | --- | EX WATER LINE             |
| ⊙   | ⊙   | --- | EX POWER POLE             |
| ⊙   | ⊙   | --- | EX STORM DRAIN MANHOLE    |
| --- |     | --- | EX STORM LINE             |
| ⊙   | ⊙   | --- | EX SIGN                   |
| ⊙   | ⊙   | --- | EX MAILBOX                |
| ⊙   | ⊙   | --- | EX FIRE HYDRANT           |
| ⊙   | ⊙   | --- | EX WATER METER            |
| ⊙   | ⊙   | --- | EX WATER VALVE            |
| ⊙   | ⊙   | --- | PROP FIRE HYDRANT         |
| --- |     | --- | PROP SERVICE LINE         |
| --- | W   | --- | PROP WATER MAIN           |
| ⊙   | ⊙   | --- | PROP WATER SERVICE        |
| ⊙   | ⊙   | --- | PROP WATER VALVE          |
| ⊙   | ⊙   | --- | PROP PLUG                 |
| ⊙   | ⊙   | --- | PROP REDUCER              |
| ⊙   | ⊙   | --- | PROP CLEANOUT             |
| --- |     | --- | PROP STORM LINE           |

**NOTES:**

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- GRouted STORM SEWER CONNECTION
- ADJUST EX SAN SEWER MANHOLE
- ADJUST EX STORM SEWER MANHOLE
- ADJUST EX WATER VALVE
- REMOVE & REINSTALL SIGN
- REMOVE & REINSTALL MAILBOX
- CUT, PLUG, & ABANDON EXISTING WATERLINE
- REMOVE EXISTING VALVE
- REMOVE TREE



NAME: *Randy P. Janak* PE  
 DATE: 2/24/2026

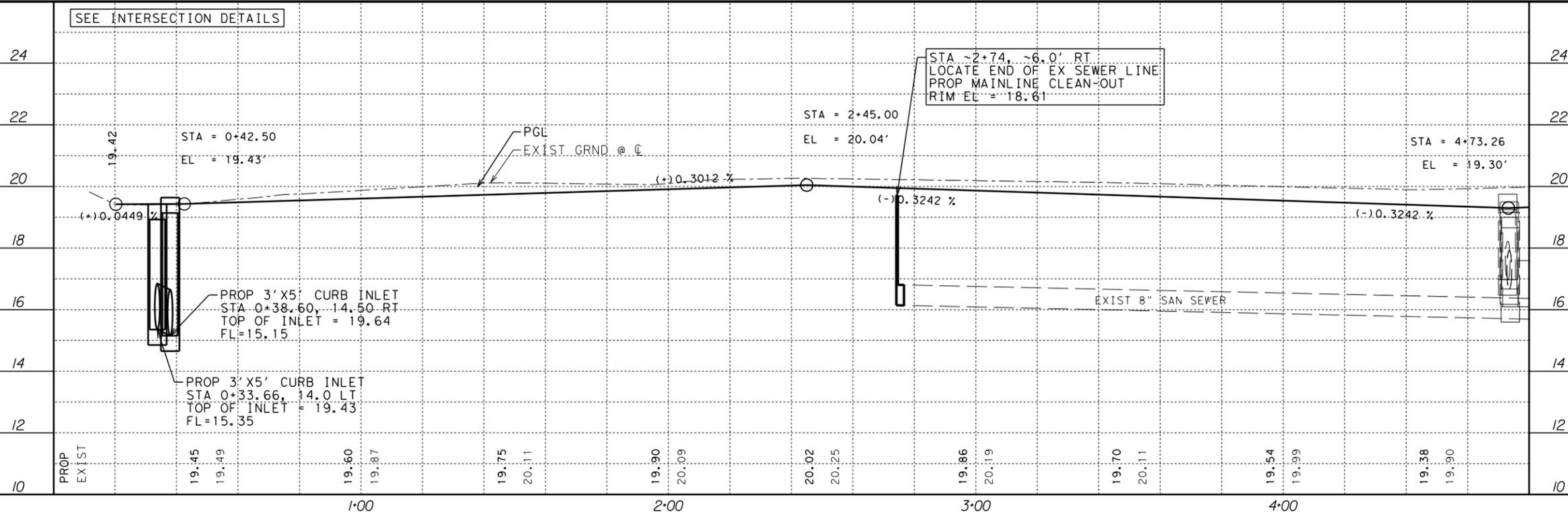


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**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**  
**SHORT ST/CENTRAL AVE**  
**PLAN/PROFILE**  
**BEGIN TO STA. 5+17**

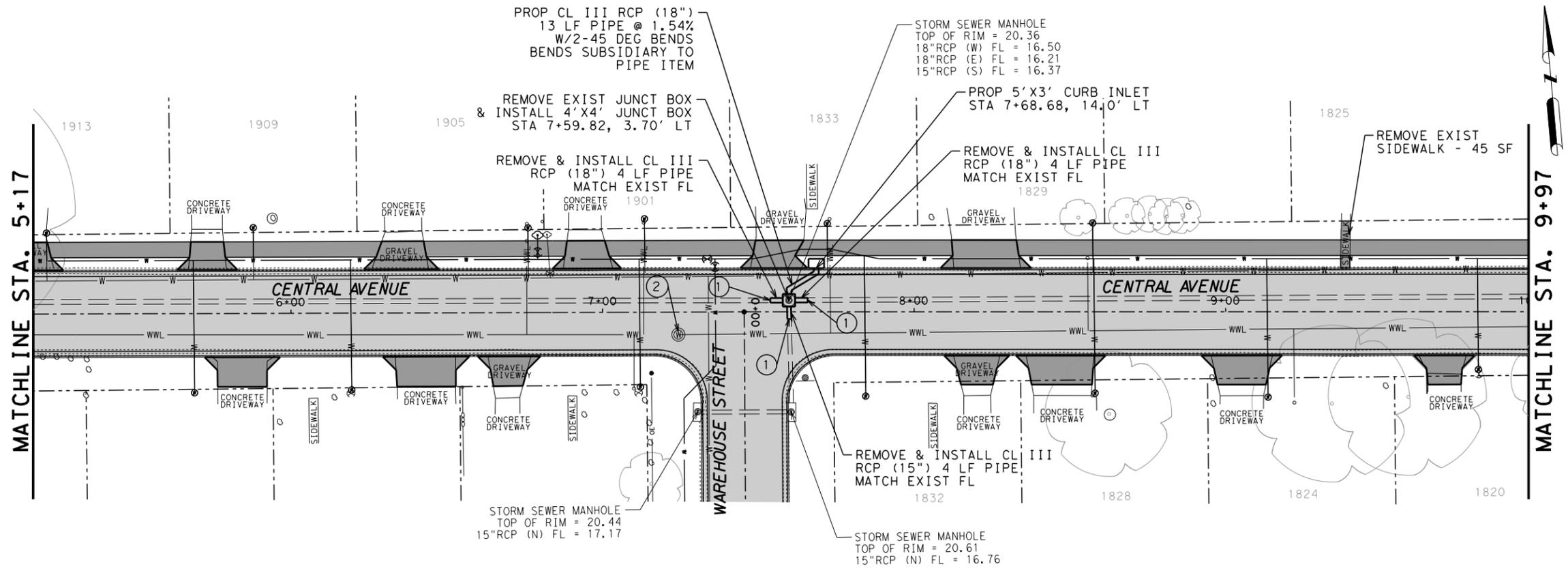
SHEET 1 OF 3

|             |           |           |    |
|-------------|-----------|-----------|----|
| PROJECT NO. | 25-015-03 | SHEET NO. | 21 |
| REVISIONS   |           |           |    |
| NO.         |           |           |    |



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MATCHLINE STA. 5+17



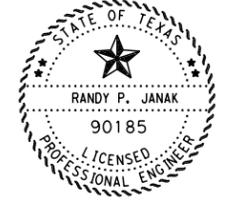
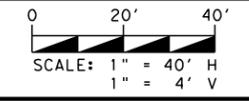
**LEGEND**

|     |     |     |                           |
|-----|-----|-----|---------------------------|
| --- | GL  | --- | EX GAS LINE               |
| ⊙   | ⊙   | --- | EX GAS METER              |
| --- | OE  | --- | EX OVERHEAD ELECTRIC      |
| --- | WWL | --- | EX SANITARY SEWER LINE    |
| --- | --- | --- | EX FENCE                  |
| --- | --- | --- | EX R.O.W.                 |
| ⊙   | ⊙   | --- | EX SANITARY SEWER MANHOLE |
| --- | --- | --- | EX WATER LINE             |
| ⊙   | ⊙   | --- | EX POWER POLE             |
| ⊙   | ⊙   | --- | EX STORM DRAIN MANHOLE    |
| --- | --- | --- | EX STORM LINE             |
| ⊙   | ⊙   | --- | EX SIGN                   |
| ⊙   | ⊙   | --- | EX MAILBOX                |
| ⊙   | ⊙   | --- | EX FIRE HYDRANT           |
| ⊙   | ⊙   | --- | EX WATER METER            |
| ⊙   | ⊙   | --- | EX WATER VALVE            |
| ⊙   | ⊙   | --- | PROP FIRE HYDRANT         |
| --- | --- | --- | PROP SERVICE LINE         |
| --- | --- | --- | PROP WATER MAIN           |
| ⊙   | ⊙   | --- | PROP WATER SERVICE        |
| ⊙   | ⊙   | --- | PROP WATER VALVE          |
| ⊙   | ⊙   | --- | PROP PLUG                 |
| ⊙   | ⊙   | --- | PROP REDUCER              |
| ⊙   | ⊙   | --- | PROP CLEANOUT             |
| --- | --- | --- | PROP STORM LINE           |

**NOTES:**

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- ① GROUTED STORM SEWER CONNECTION
- ② ADJUST EX SAN SEWER MANHOLE
- ③ ADJUST EX STORM SEWER MANHOLE
- ④ ADJUST EX WATER VALVE
- ⑤ REMOVE & REINSTALL SIGN
- ⑥ REMOVE & REINSTALL MAILBOX
- ⑦ CUT, PLUG, & ABANDON EXISTING WATERLINE
- ⑧ REMOVE EXISTING VALVE
- ⑨ REMOVE TREE



NAME: *Randy P. Janak* PE  
 DATE: 2/24/2026



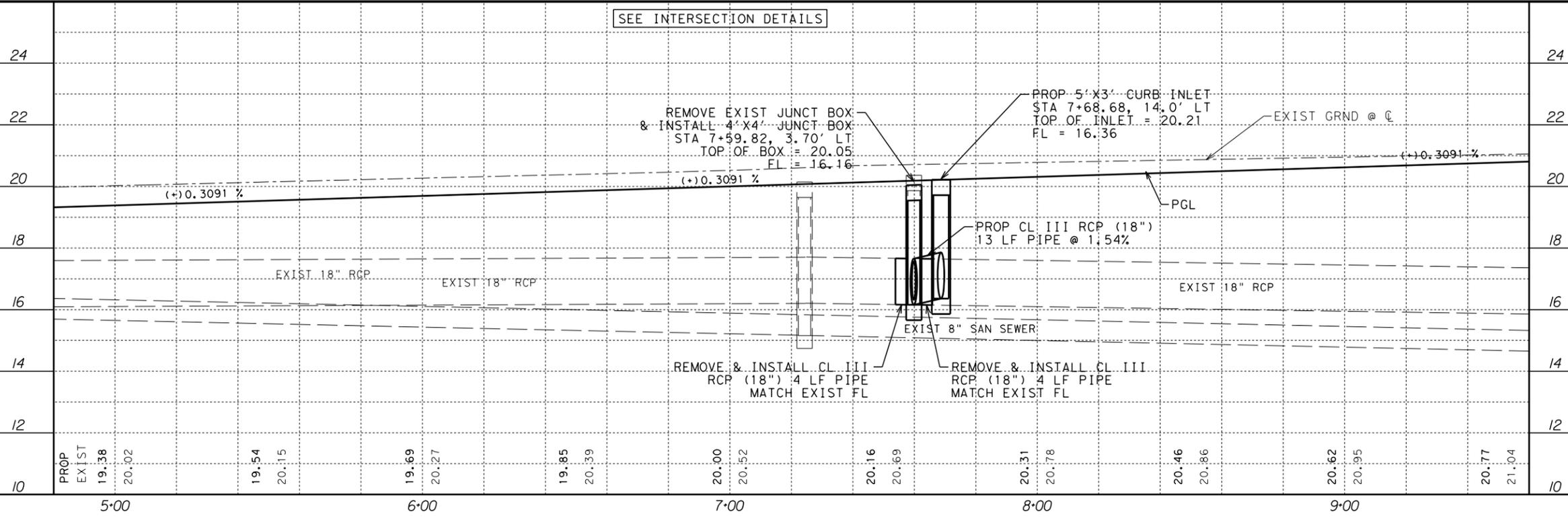
**CivilCorp**  
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 TEL: (361) 570-7500 TXSURV FIRM #100576-00 TXENG FIRM #10283

**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

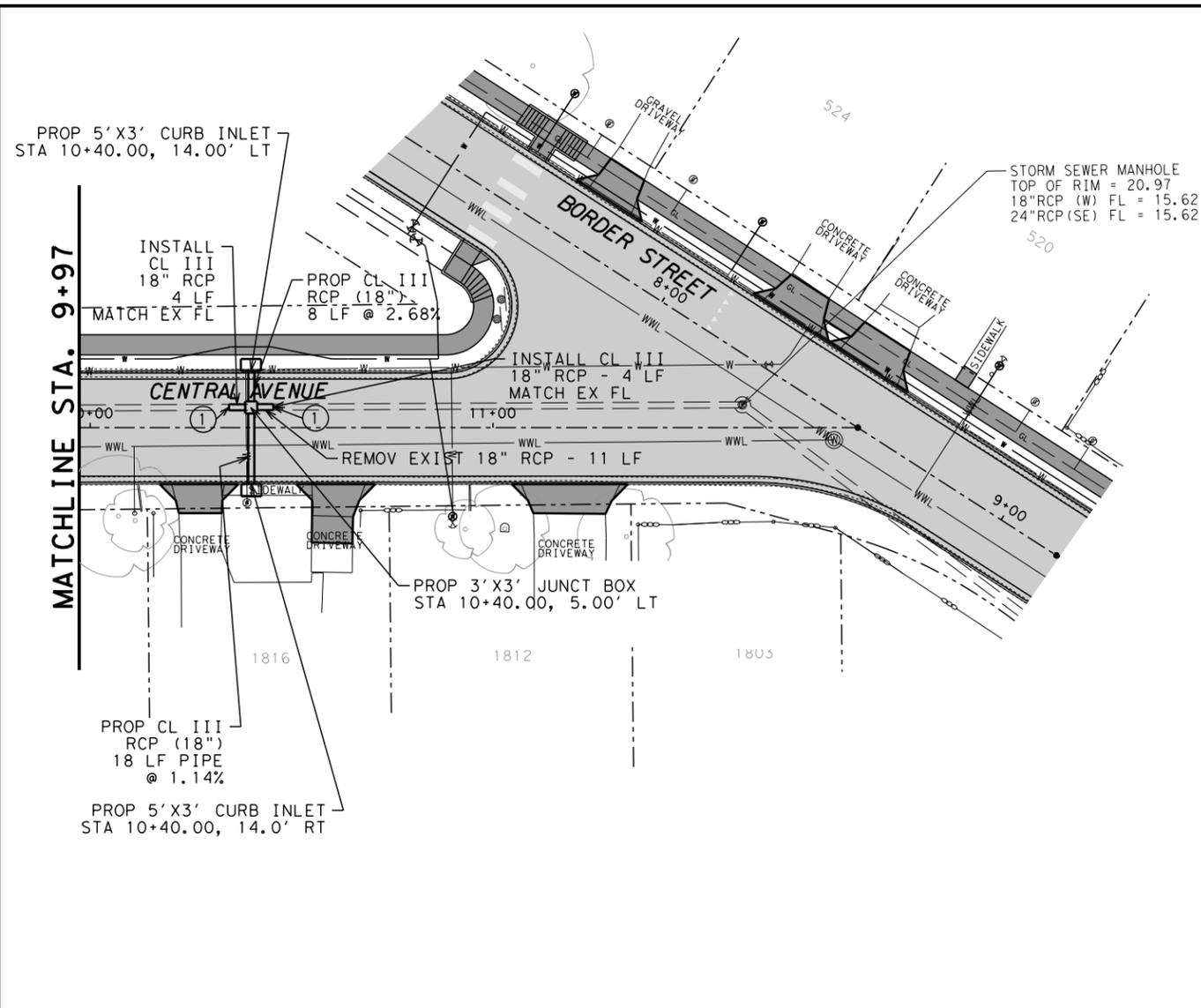
**CENTRAL AVENUE  
 PLAN/PROFILE  
 STA. 5+17 TO STA. 9+97**

SHEET 2 OF 3

|             |           |           |    |
|-------------|-----------|-----------|----|
| PROJECT NO. | 25-015-03 | SHEET NO. | 22 |
| REVISIONS   |           |           |    |
| NO.         |           |           |    |



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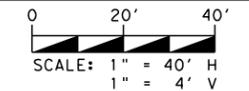
**LEGEND**

|     |     |     |                           |
|-----|-----|-----|---------------------------|
| --- | GL  | --- | EX GAS LINE               |
| ⊙   | ⊙   | --- | EX GAS METER              |
| --- | OE  | --- | EX OVERHEAD ELECTRIC      |
| --- | WWL | --- | EX SANITARY SEWER LINE    |
| --- | --- | --- | EX FENCE                  |
| --- | --- | --- | EX R.O.W.                 |
| ⊙   | ⊙   | --- | EX SANITARY SEWER MANHOLE |
| --- | W   | --- | EX WATER LINE             |
| ⊙   | ⊙   | --- | EX POWER POLE             |
| ⊙   | ⊙   | --- | EX STORM DRAIN MANHOLE    |
| --- | --- | --- | EX STORM LINE             |
| ⊙   | ⊙   | --- | EX SIGN                   |
| ⊙   | ⊙   | --- | EX MAILBOX                |
| ⊙   | ⊙   | --- | EX FIRE HYDRANT           |
| ⊙   | ⊙   | --- | EX WATER METER            |
| ⊙   | ⊙   | --- | EX WATER VALVE            |
| ⊙   | ⊙   | --- | PROP FIRE HYDRANT         |
| --- | --- | --- | PROP SERVICE LINE         |
| --- | --- | --- | PROP WATER MAIN           |
| ⊙   | ⊙   | --- | PROP WATER SERVICE        |
| ⊙   | ⊙   | --- | PROP WATER VALVE          |
| ⊙   | ⊙   | --- | PROP PLUG                 |
| ⊙   | ⊙   | --- | PROP REDUCER              |
| ⊙   | ⊙   | --- | PROP CLEANOUT             |
| --- | --- | --- | PROP STORM LINE           |

**NOTES:**

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- Ⓛ GROUTED STORM SEWER CONNECTION
- Ⓛ ADJUST EX SAN SEWER MANHOLE
- Ⓛ ADJUST EX STORM SEWER MANHOLE
- Ⓛ ADJUST EX WATER VALVE
- Ⓛ REMOVE & REINSTALL SIGN
- Ⓛ REMOVE & REINSTALL MAILBOX
- Ⓛ CUT, PLUG, & ABANDON EXISTING WATERLINE
- Ⓛ REMOVE EXISTING VALVE
- Ⓛ REMOVE TREE



NAME: *Randy P. Janak* PE  
 DATE: 2/24/2026



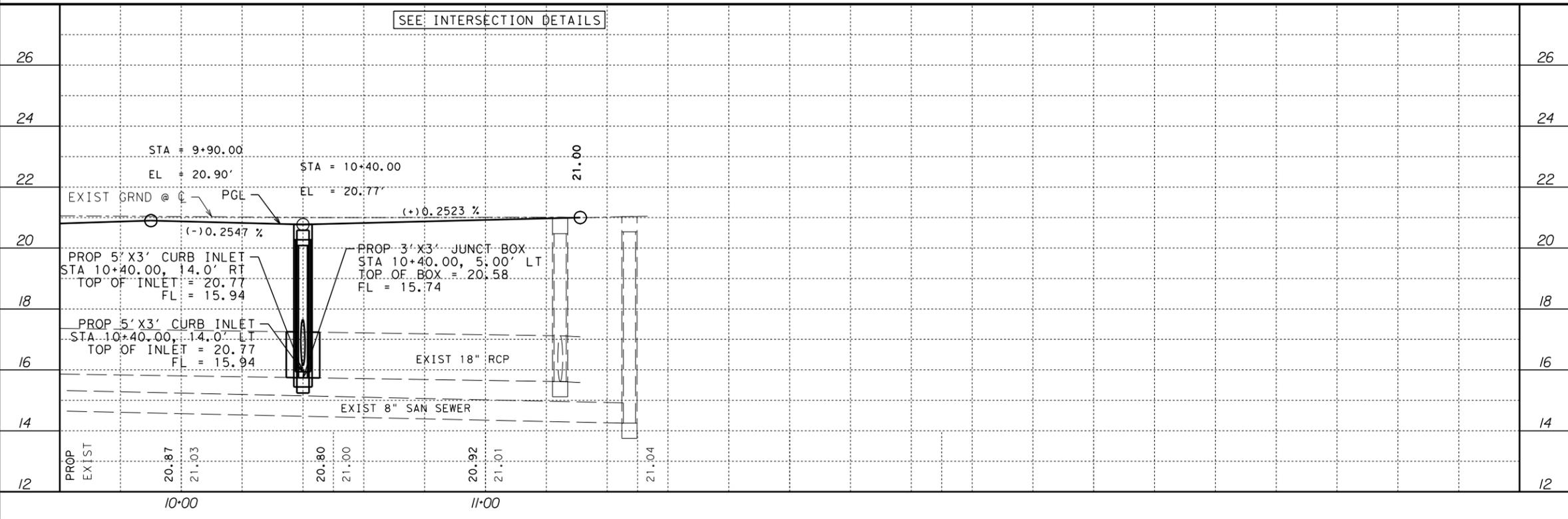
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 TEL: (361) 570-7500 TXSURV FIRM #100576-00 TXENG FIRM #10283

**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

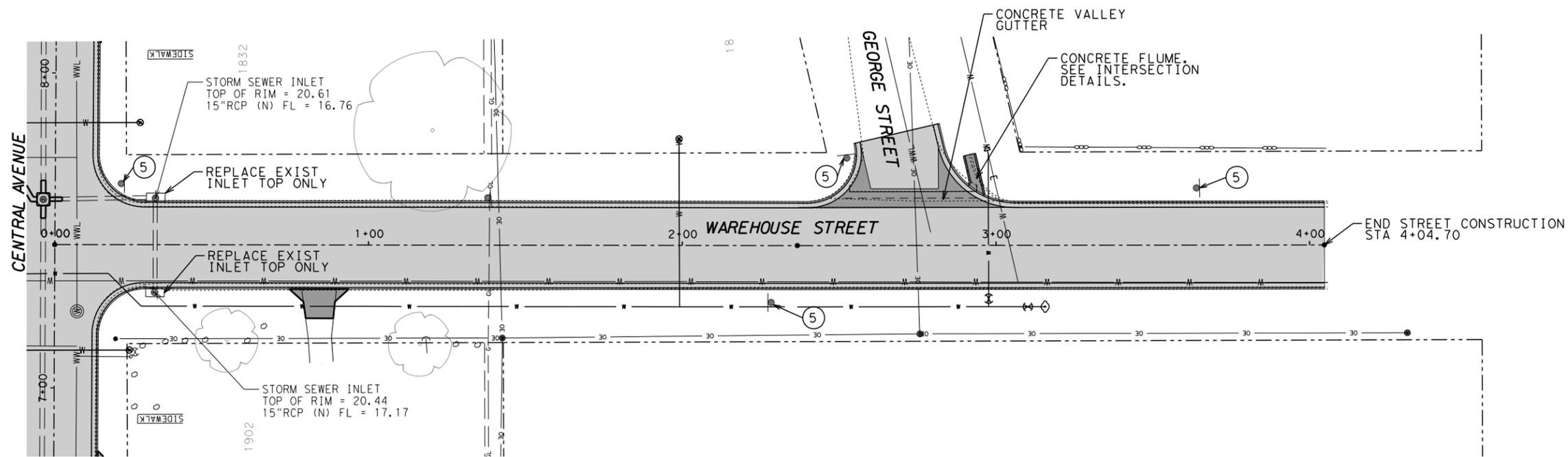
**CENTRAL AVENUE  
 PLAN/PROFILE  
 STA. 9+97 TO END**

SHEET 3 OF 3

|             |           |           |    |
|-------------|-----------|-----------|----|
| PROJECT NO. | 25-015-03 | SHEET NO. | 23 |
| REVISIONS   |           |           |    |
| NO.         |           |           |    |
|             |           |           |    |



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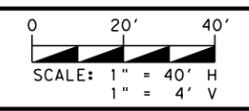
**LEGEND**

|     |                           |
|-----|---------------------------|
| GL  | EX GAS LINE               |
| ⊙   | EX GAS METER              |
| OE  | EX OVERHEAD ELECTRIC      |
| WWL | EX SANITARY SEWER LINE    |
| —   | EX FENCE                  |
| --- | EX R.O.W.                 |
| ⊙   | EX SANITARY SEWER MANHOLE |
| W   | EX WATER LINE             |
| ⊙   | EX POWER POLE             |
| ⊙   | EX STORM DRAIN MANHOLE    |
| --- | EX STORM LINE             |
| ⊙   | EX SIGN                   |
| □   | EX MAILBOX                |
| ⊙   | EX FIRE HYDRANT           |
| ⊙   | EX WATER METER            |
| ⊙   | EX WATER VALVE            |
| ⊙   | PROP FIRE HYDRANT         |
| --- | PROP SERVICE LINE         |
| W   | PROP WATER MAIN           |
| ⊙   | PROP WATER SERVICE        |
| ⊙   | PROP WATER VALVE          |
| □   | PROP PLUG                 |
| △   | PROP REDUCER              |
| ■   | PROP CLEANOUT             |
| --- | PROP STORM LINE           |

**NOTES:**

- FOR CURB INLETS, STA IS TO MIDDLE OF INLET AND OFFSET IS TO BACK OF CURB. FOR JUNCTION BOX, STA, OFFSET AND ELEVATION IS TO CENTER OF BOX.

- |   |   |
|---|---|
| ① GROUTED STORM SEWER CONNECTION          | ⑧ REMOVE EXISTING VALVE                           |
| ② ADJUST EX SAN SEWER MANHOLE             | ⑨ REMOVE TREE                                     |
| ③ ADJUST EX STORM SEWER MANHOLE           | ⑩ RELOCATE POWERPOLE                              |
| ④ ADJUST EX WATER VALVE TO FINISHED GRADE | ⑪ ADJUST MH RING & COVER TO FINISHED GRADE        |
| ⑤ REMOVE & REINSTALL SIGN                 | ⑫ ADJUST EX WATER VALVE TO FINISHED GRADE         |
| ⑥ REMOVE & REINSTALL MAILBOX              | ⑬ REMOVE & REINSTALL WATER METER OUTSIDE SIDEWALK |
| ⑦ CUT, PLUG, & ABANDON EXISTING WATERLINE | ⑭ ADJUST EX WATER METER                           |



NAME: *Randy P. Janak* PE  
 DATE: 2/24/2026



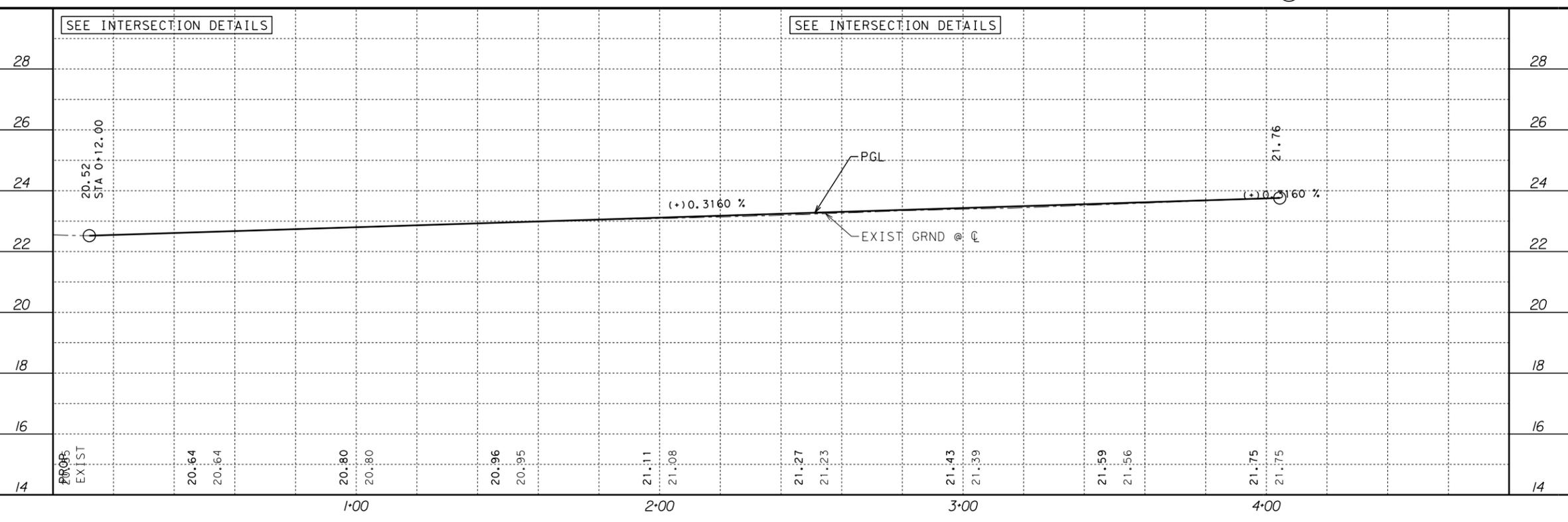
**CivilCorp**  
 AN ESP COMPANY  
 4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
 TEL: (361) 570-7500 TXSURV FIRM #100576-00 TXENG FIRM #10283

**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

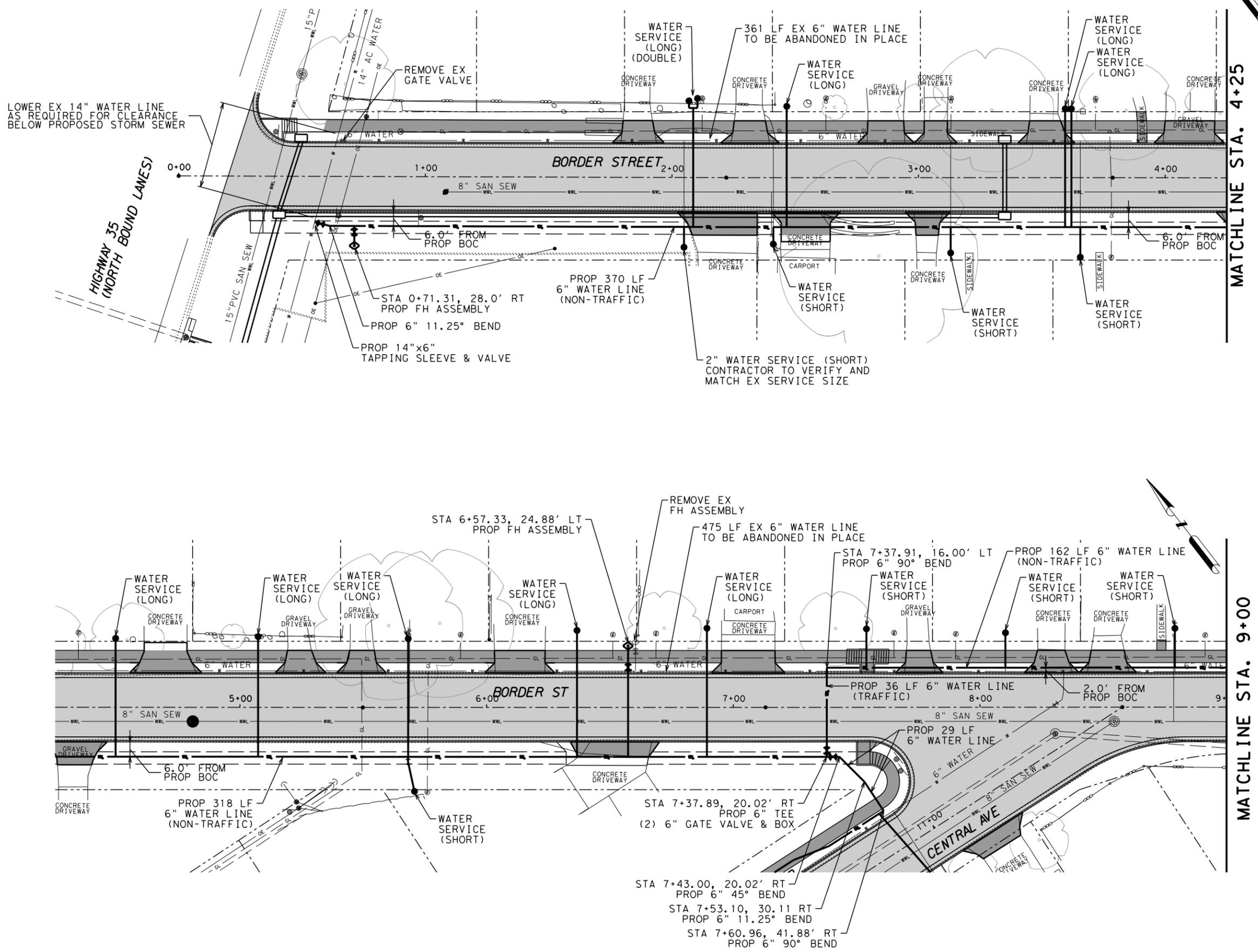
**WAREHOUSE STREET PLAN/PROFILE BEGIN TO END**

SHEET 1 OF 1

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| REVISIONS   |           |           |    |
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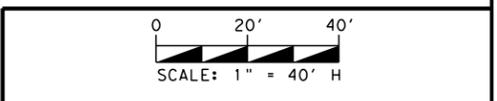


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**LEGEND**

|     |     |     |                           |
|-----|-----|-----|---------------------------|
| --- | GL  | --- | EX GAS LINE               |
| ⊙   | ⊙   | --- | EX GAS METER              |
| --- | OE  | --- | EX OVERHEAD ELECTRIC      |
| --- | WWL | --- | EX SANITARY SEWER LINE    |
| --- | --- | --- | EX FENCE                  |
| --- | --- | --- | EX R.O.W.                 |
| ⊙   | ⊙   | --- | EX SANITARY SEWER MANHOLE |
| --- | --- | --- | EX WATER LINE             |
| ⊙   | ⊙   | --- | EX POWER POLE             |
| ⊙   | ⊙   | --- | EX STORM DRAIN MANHOLE    |
| --- | --- | --- | EX STORM LINE             |
| ⊙   | ⊙   | --- | EX SIGN                   |
| ⊙   | ⊙   | --- | EX MAILBOX                |
| ⊙   | ⊙   | --- | EX FIRE HYDRANT           |
| ⊙   | ⊙   | --- | EX WATER METER            |
| ⊙   | ⊙   | --- | EX WATER VALVE            |
| ⊙   | ⊙   | --- | PROP FIRE HYDRANT         |
| --- | --- | --- | PROP SERVICE LINE         |
| --- | --- | --- | PROP WATER MAIN           |
| --- | --- | --- | PROP WATER SERVICE        |
| --- | --- | --- | PROP WATER VALVE          |
| --- | --- | --- | PROP PLUG                 |
| --- | --- | --- | PROP REDUCER              |
| --- | --- | --- | PROP STORM LINE           |



NAME: Randy P. Janak PE  
 DATE: 2/24/2026



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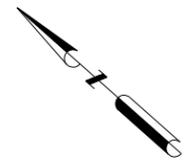
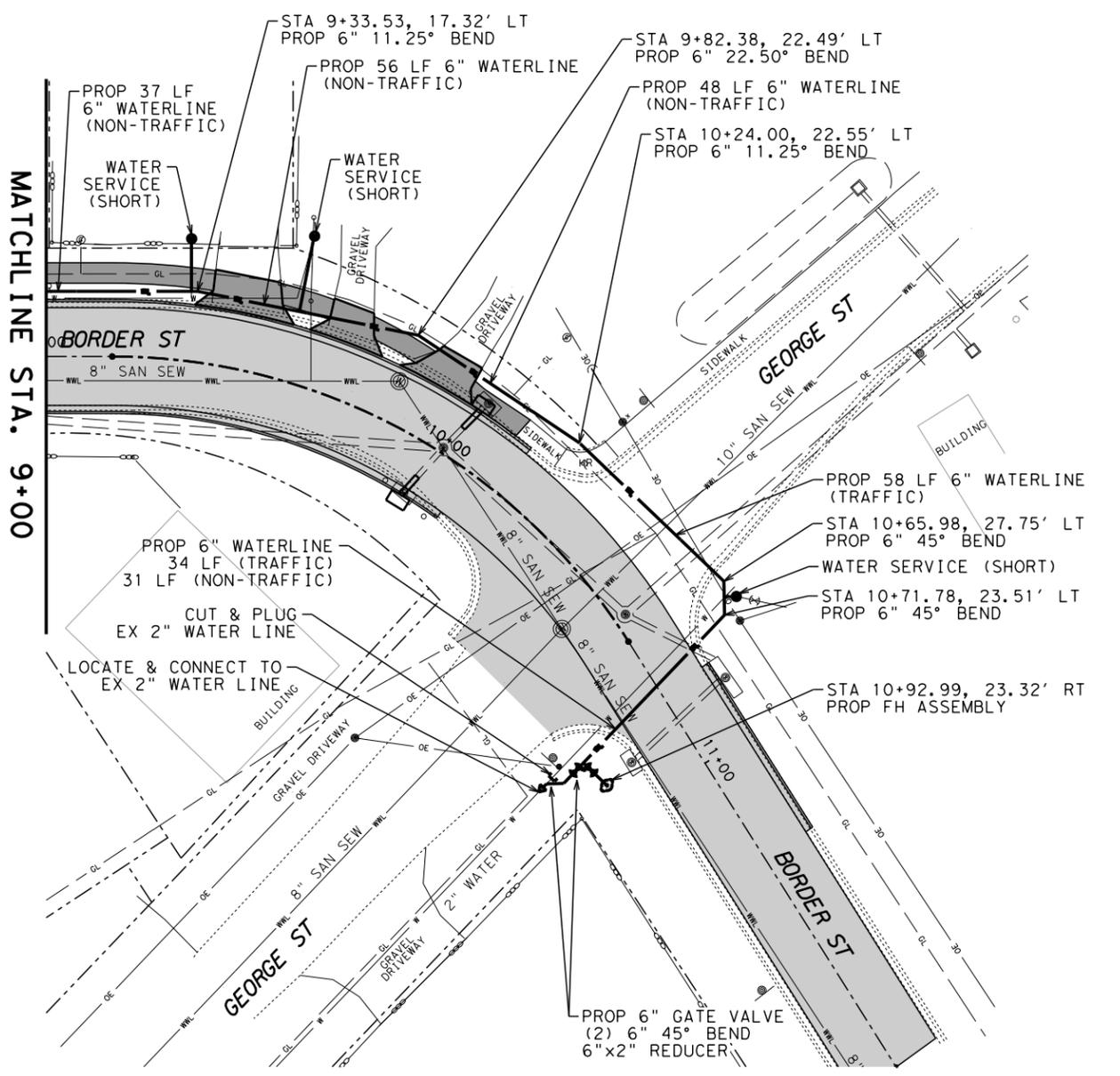
**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

**BORDER STREET**  
**WATER PLAN/PROFILE**  
 BEGIN TO STA. 4+80

SHEET 1 OF 2

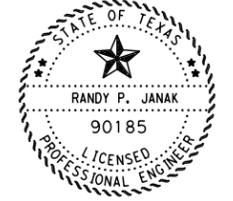
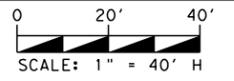
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**LEGEND**

|       |                           |
|-------|---------------------------|
| GL    | EX GAS LINE               |
| ⊙     | EX GAS METER              |
| OE    | EX OVERHEAD ELECTRIC      |
| WWL   | EX SANITARY SEWER LINE    |
| ---   | EX FENCE                  |
| - - - | EX R.O.W.                 |
| ⊙     | EX SANITARY SEWER MANHOLE |
| W     | EX WATER LINE             |
| ⊙     | EX POWER POLE             |
| ⊙     | EX STORM DRAIN MANHOLE    |
| ---   | EX STORM LINE             |
| ⊙     | EX SIGN                   |
| □     | EX MAILBOX                |
| ⊙     | EX FIRE HYDRANT           |
| ⊙     | EX WATER METER            |
| ⊙     | EX WATER VALVE            |
| ⊙     | PROP FIRE HYDRANT         |
| ---   | PROP SERVICE LINE         |
| ---   | PROP WATER MAIN           |
| ●     | PROP WATER SERVICE        |
| ⊙     | PROP WATER VALVE          |
| ⊙     | PROP PLUG                 |
| △     | PROP REDUCER              |
| ---   | PROP STORM LINE           |



NAME: *Randy P. Janak* PE  
 DATE: 2/24/2026



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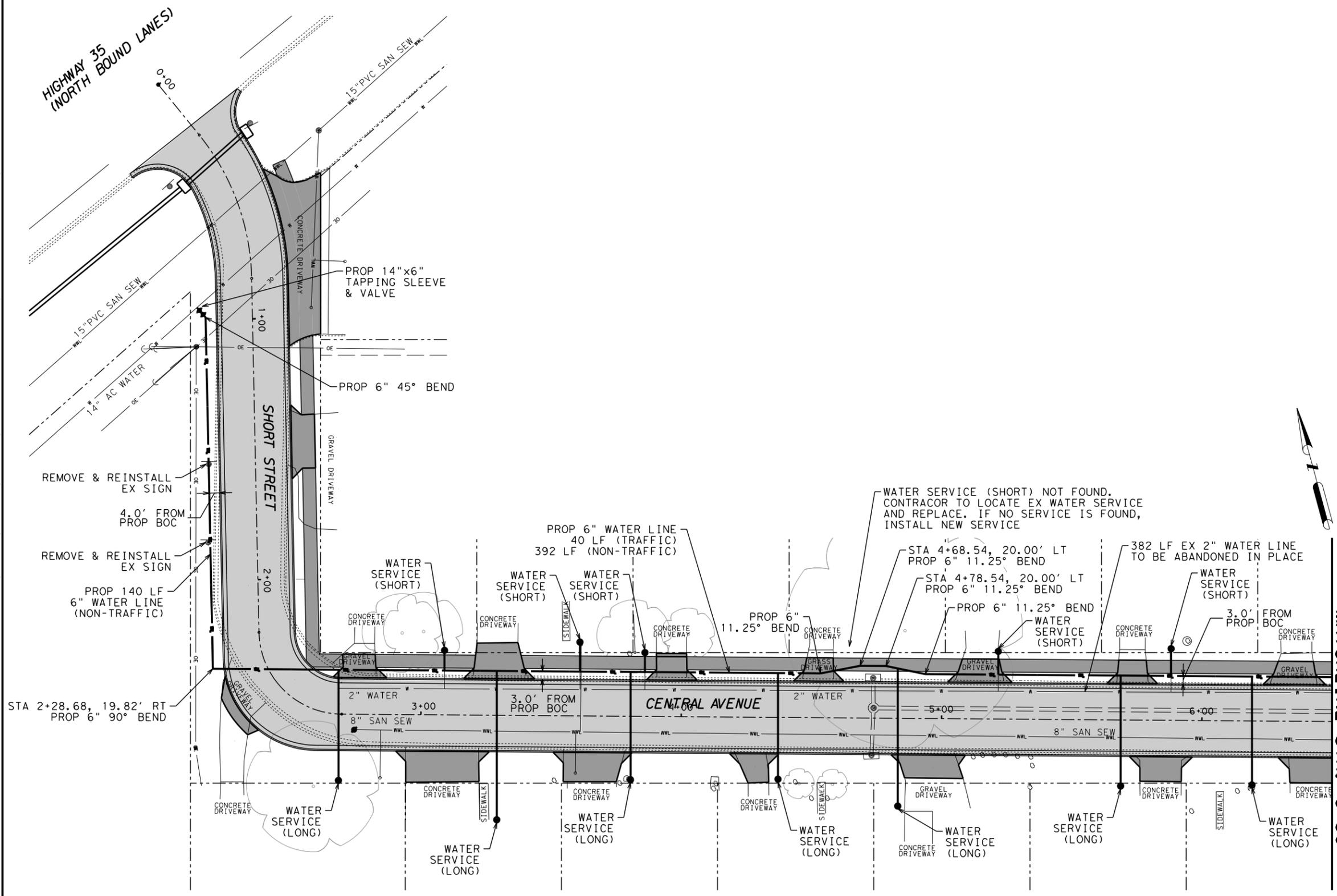
**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

**BORDER STREET**  
**WATER PLAN/PROFILE**  
 BEGIN TO STA. 4+80

SHEET 2 OF 2

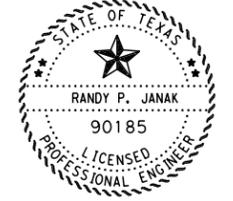
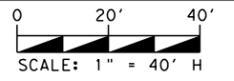
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**LEGEND**

|     |     |     |                           |
|-----|-----|-----|---------------------------|
| --- | GL  | --- | EX GAS LINE               |
| ⊙   | ⊙   | --- | EX GAS METER              |
| --- | OE  | --- | EX OVERHEAD ELECTRIC      |
| --- | WWL | --- | EX SANITARY SEWER LINE    |
| --- | --- | --- | EX FENCE                  |
| --- | --- | --- | EX R.O.W.                 |
| ⊙   | ⊙   | --- | EX SANITARY SEWER MANHOLE |
| --- | W   | --- | EX WATER LINE             |
| ⊙   | ⊙   | --- | EX POWER POLE             |
| ⊙   | ⊙   | --- | EX STORM DRAIN MANHOLE    |
| --- | --- | --- | EX STORM LINE             |
| ⊙   | ⊙   | --- | EX SIGN                   |
| ⊙   | ⊙   | --- | EX MAILBOX                |
| ⊙   | ⊙   | --- | EX FIRE HYDRANT           |
| ⊙   | ⊙   | --- | EX WATER METER            |
| ⊙   | ⊙   | --- | EX WATER VALVE            |
| ⊙   | ⊙   | --- | PROP FIRE HYDRANT         |
| --- | --- | --- | PROP SERVICE LINE         |
| --- | --- | --- | PROP WATER MAIN           |
| --- | --- | --- | PROP WATER SERVICE        |
| --- | --- | --- | PROP WATER VALVE          |
| --- | --- | --- | PROP PLUG                 |
| --- | --- | --- | PROP REDUCER              |
| --- | --- | --- | PROP STORM LINE           |



NAME: *Randy P. Janak* PE  
 DATE: 2/24/2026



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**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

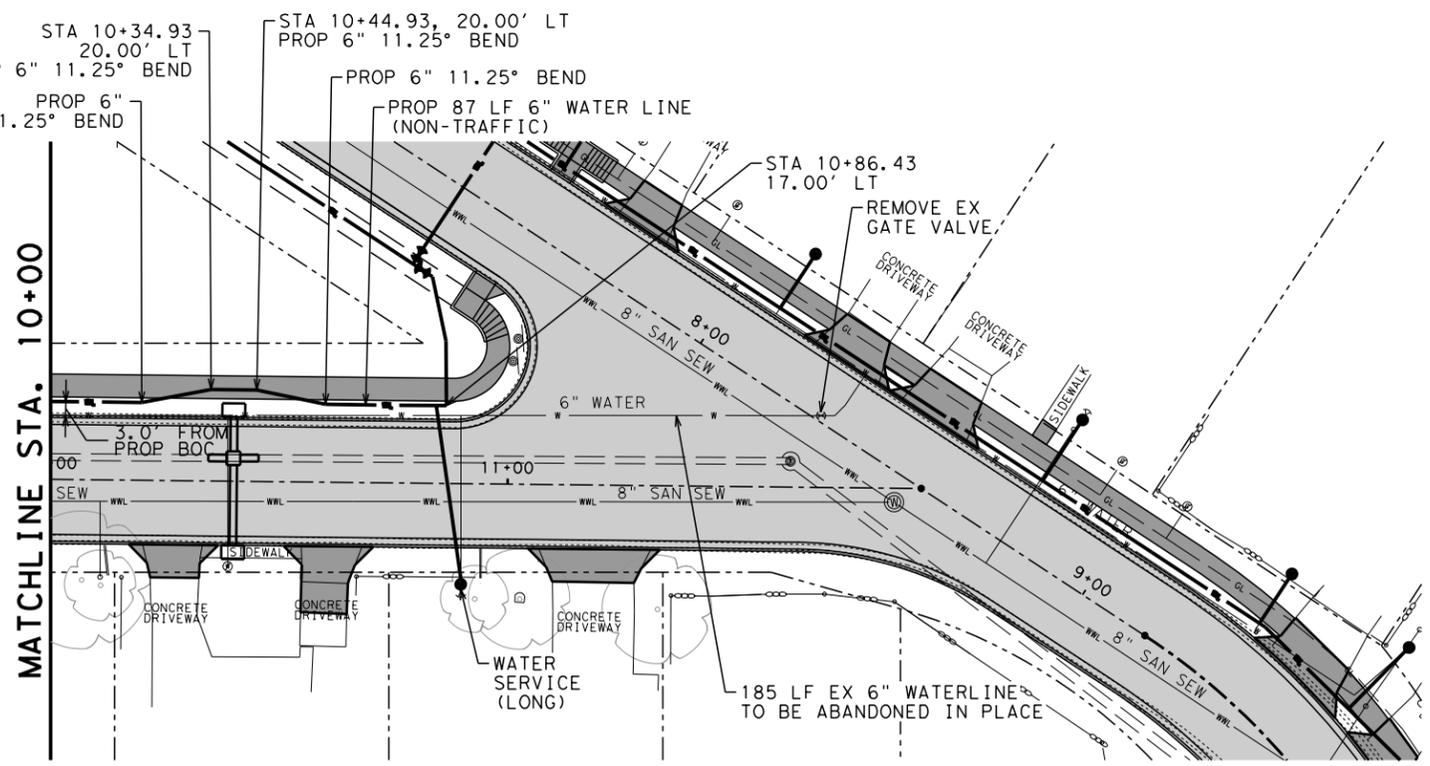
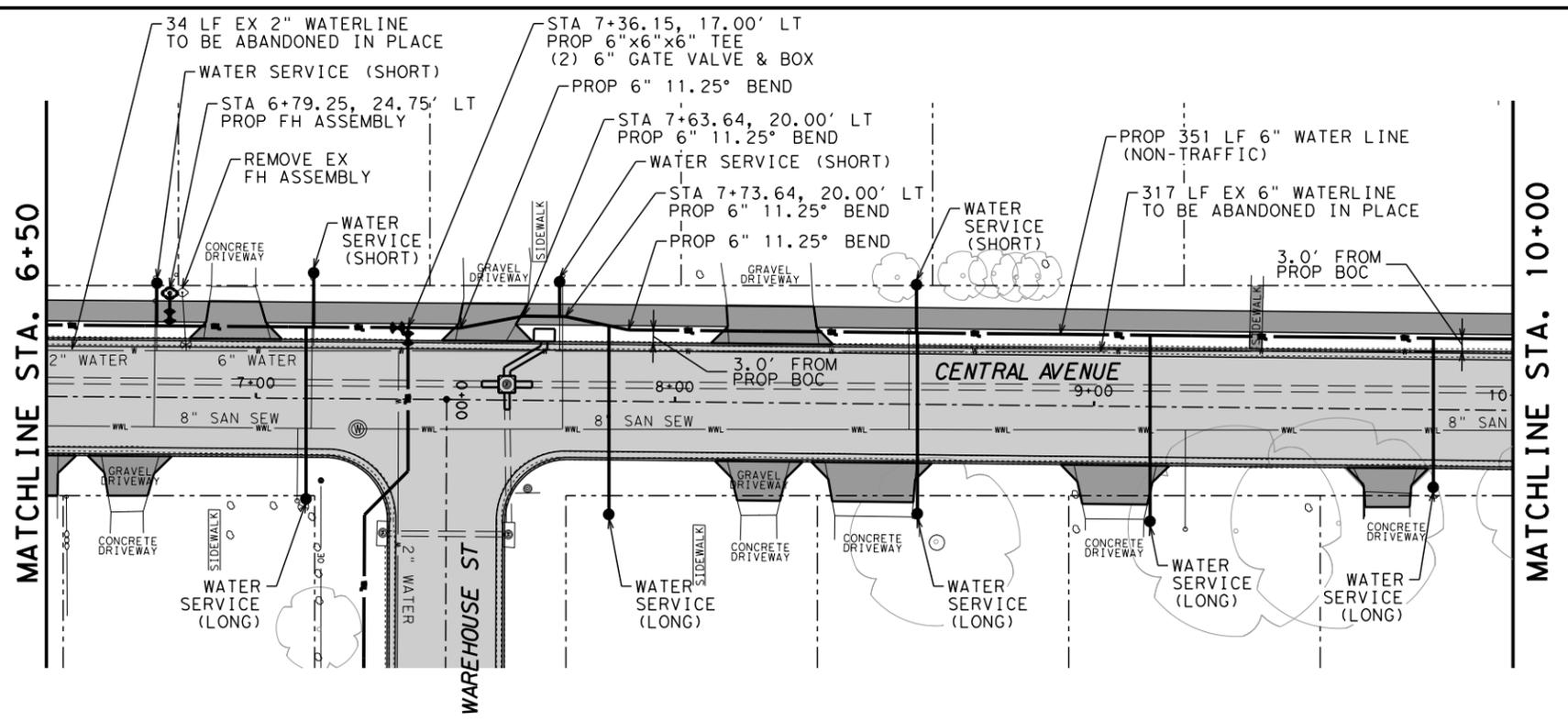
**CENTRAL AVENUE**  
**WATER PLAN/PROFILE**  
 BEGIN TO STA. 7+00

SHEET 1 OF 2

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| PROJECT NO. | 25-015-03 | SHEET NO. | 27 |
| REVISIONS   |           |           |    |
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MATCHLINE STA. 6+50

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**LEGEND**

|     |     |     |                           |
|-----|-----|-----|---------------------------|
| --- | GL  | --- | EX GAS LINE               |
| ⊙   |     | ⊙   | EX GAS METER              |
| --- | OE  | --- | EX OVERHEAD ELECTRIC      |
| --- | WWL | --- | EX SANITARY SEWER LINE    |
| --- |     | --- | EX FENCE                  |
| --- |     | --- | EX R.O.W.                 |
| ⊙   |     | ⊙   | EX SANITARY SEWER MANHOLE |
| --- | W   | --- | EX WATER LINE             |
| ⊙   |     | ⊙   | EX POWER POLE             |
| ⊙   |     | ⊙   | EX STORM DRAIN MANHOLE    |
| --- |     | --- | EX STORM LINE             |
| ⊙   |     | ⊙   | EX SIGN                   |
| ⊙   |     | ⊙   | EX MAILBOX                |
| ⊙   |     | ⊙   | EX FIRE HYDRANT           |
| ⊙   |     | ⊙   | EX WATER METER            |
| ⊙   |     | ⊙   | EX WATER VALVE            |
| ⊙   |     | ⊙   | PROP FIRE HYDRANT         |
| --- |     | --- | PROP SERVICE LINE         |
| --- |     | --- | PROP WATER MAIN           |
| --- |     | --- | PROP WATER SERVICE        |
| --- |     | --- | PROP WATER VALVE          |
| --- |     | --- | PROP PLUG                 |
| --- |     | --- | PROP REDUCER              |
| --- |     | --- | PROP STORM LINE           |



NAME: *Randy P. Janak* PE  
 DATE: *2/24/2026*



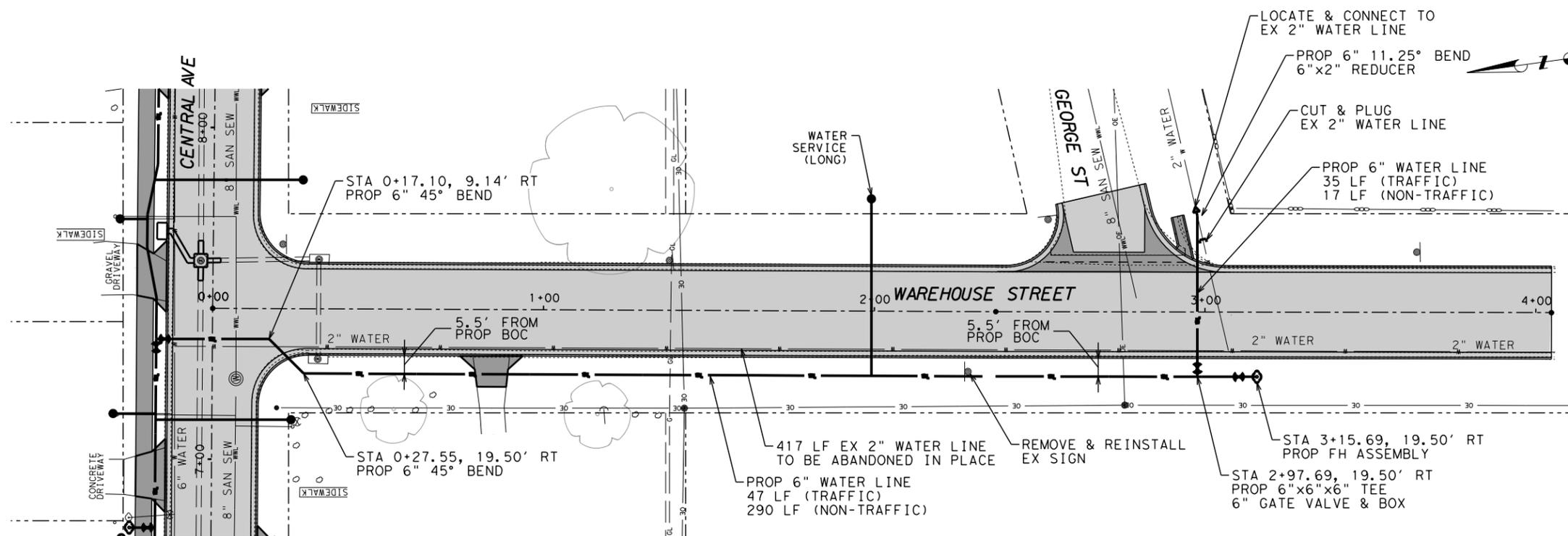
**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

**CENTRAL AVENUE  
 WATER PLAN/PROFILE  
 STA. 7+00 TO END**

SHEET 2 OF 2

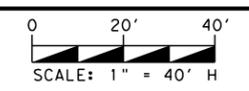
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**LEGEND**

|     |                           |
|-----|---------------------------|
| GL  | EX GAS LINE               |
| ⊙   | EX GAS METER              |
| OE  | EX OVERHEAD ELECTRIC      |
| WWL | EX SANITARY SEWER LINE    |
| —   | EX FENCE                  |
| --- | EX R.O.W.                 |
| ⊙   | EX SANITARY SEWER MANHOLE |
| W   | EX WATER LINE             |
| ⊙   | EX POWER POLE             |
| ⊙   | EX STORM DRAIN MANHOLE    |
| --- | EX STORM LINE             |
| ⊙   | EX SIGN                   |
| ⊙   | EX MAILBOX                |
| ⊙   | EX FIRE HYDRANT           |
| ⊙   | EX WATER METER            |
| ⊙   | EX WATER VALVE            |
| ⊙   | PROP FIRE HYDRANT         |
| --- | PROP SERVICE LINE         |
| --- | PROP WATER MAIN           |
| ⊙   | PROP WATER SERVICE        |
| ⊙   | PROP WATER VALVE          |
| ⊙   | PROP PLUG                 |
| ⊙   | PROP REDUCER              |
| --- | PROP STORM LINE           |



NAME: *Randy P. Janak* PE  
 DATE: 2/24/2026



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 4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
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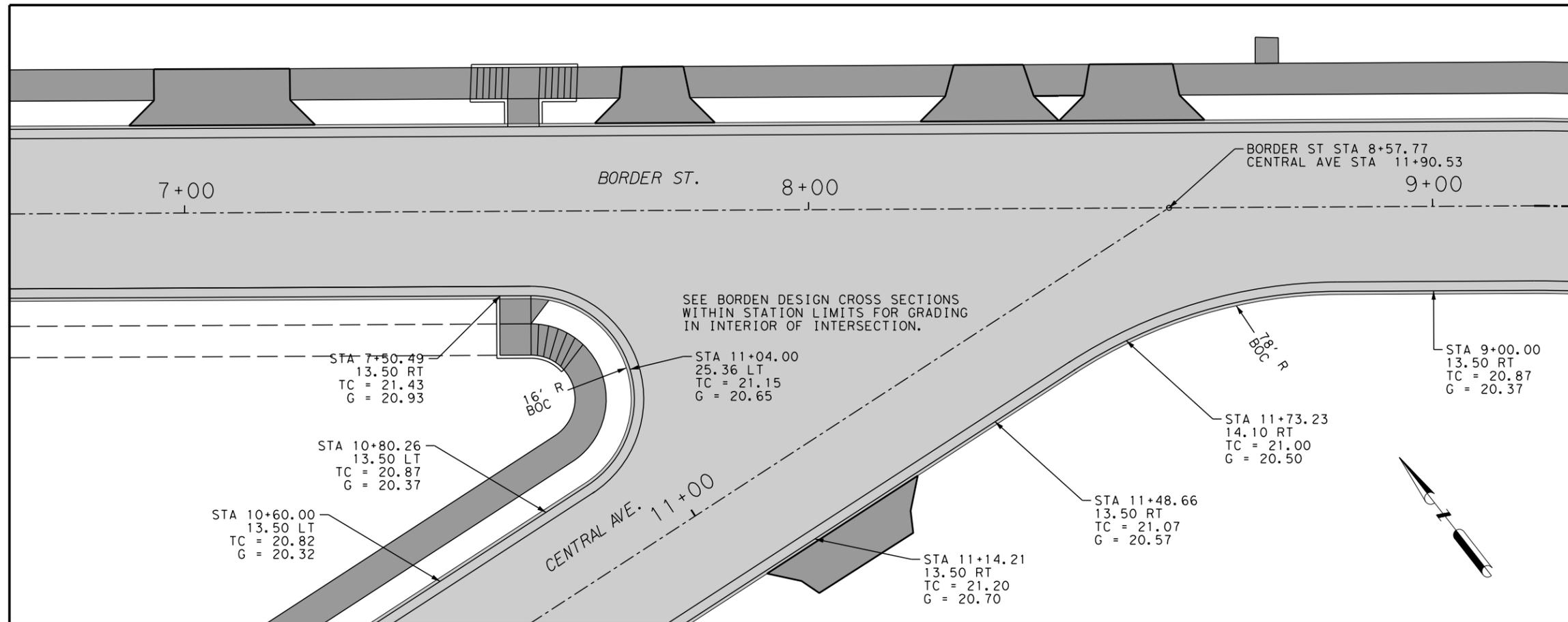
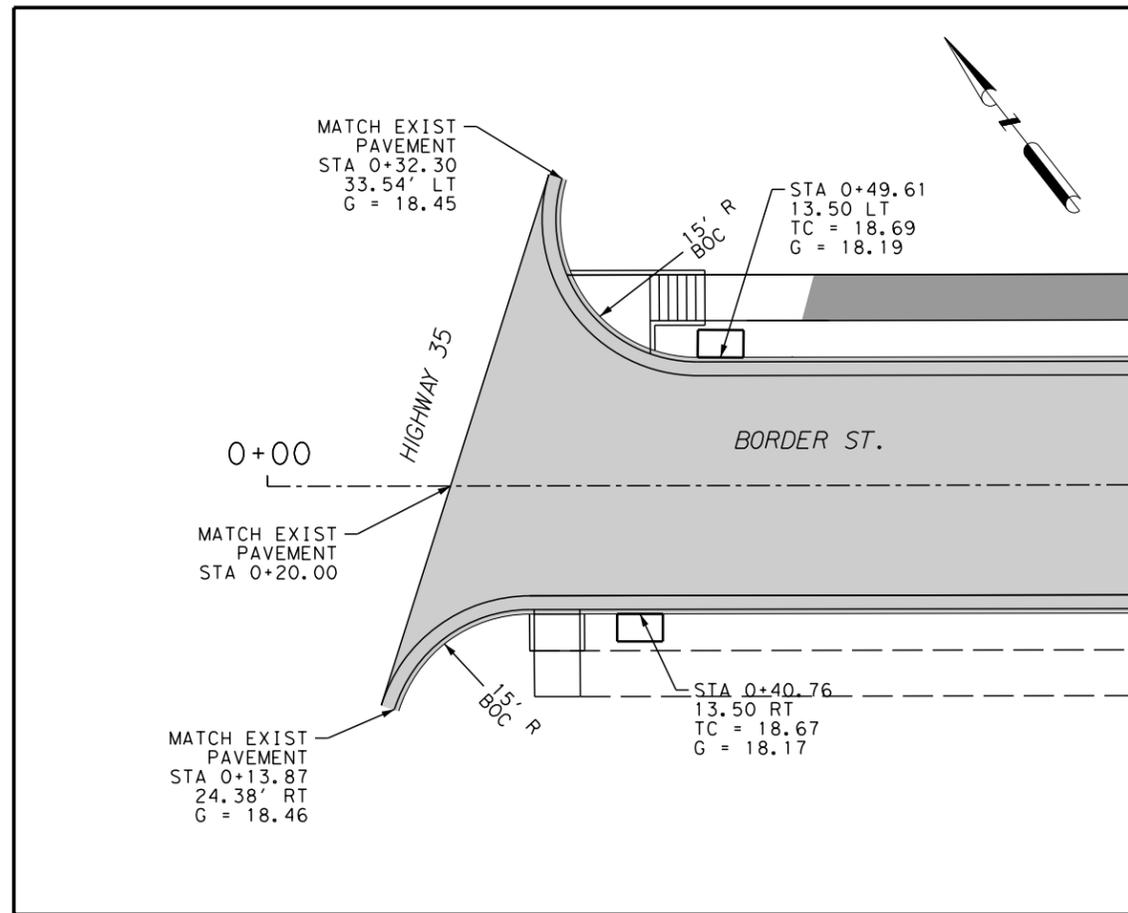
**WESTERN HEIGHTS STREET  
 IMPROVEMENT PROJECT**

**WAREHOUSE STREET  
 WATER PLAN  
 BEGIN TO END**

SHEET 1 OF 1

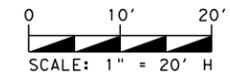
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**NOTE:**

INTERSECTION DRAINAGE IS PROVIDED AROUND RADII BY CORNER INLETS AND NOT ACROSS ROADWAY. GRADE ROADWAY SURFACE AT INTERSECTIONS TO PROVIDE A SMOOTH, UNIFORM TRANSITION FROM THE CROWN SHOWN ON THE TYPICAL SECTIONS THROUGH THE INTERSECTION AREA. PROVIDE POSITIVE DRAINAGE TO CURB ON ALL SIDES AND CORNERS WITH NO VALLEYS AT PROJECTED CURB LINES.



NAME: *Randy P. Janak* PE  
 DATE: 2/24/2026



**CivilCorp**  
 AN ESP COMPANY  
 4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
 TEL: (361) 570-7500 TXSURV FIRM #100576-00 TXENG FIRM #10283

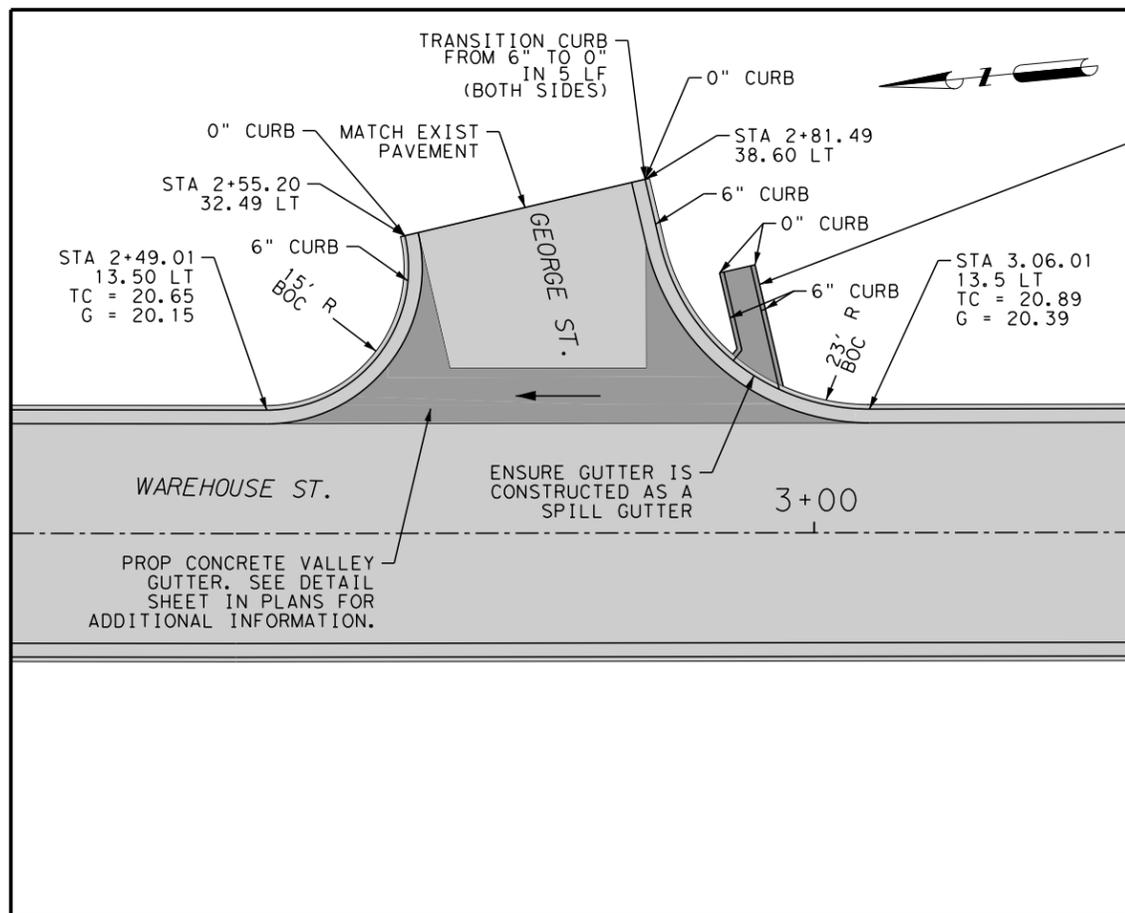
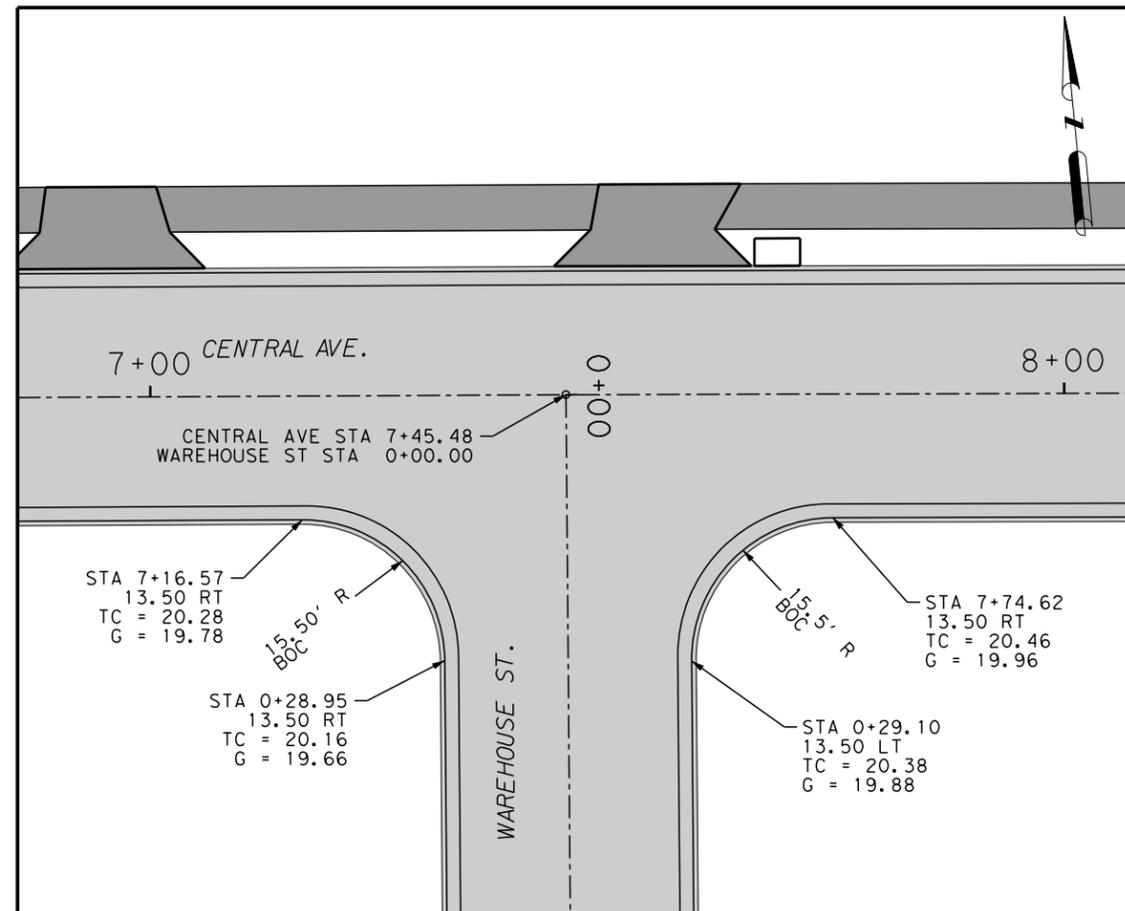
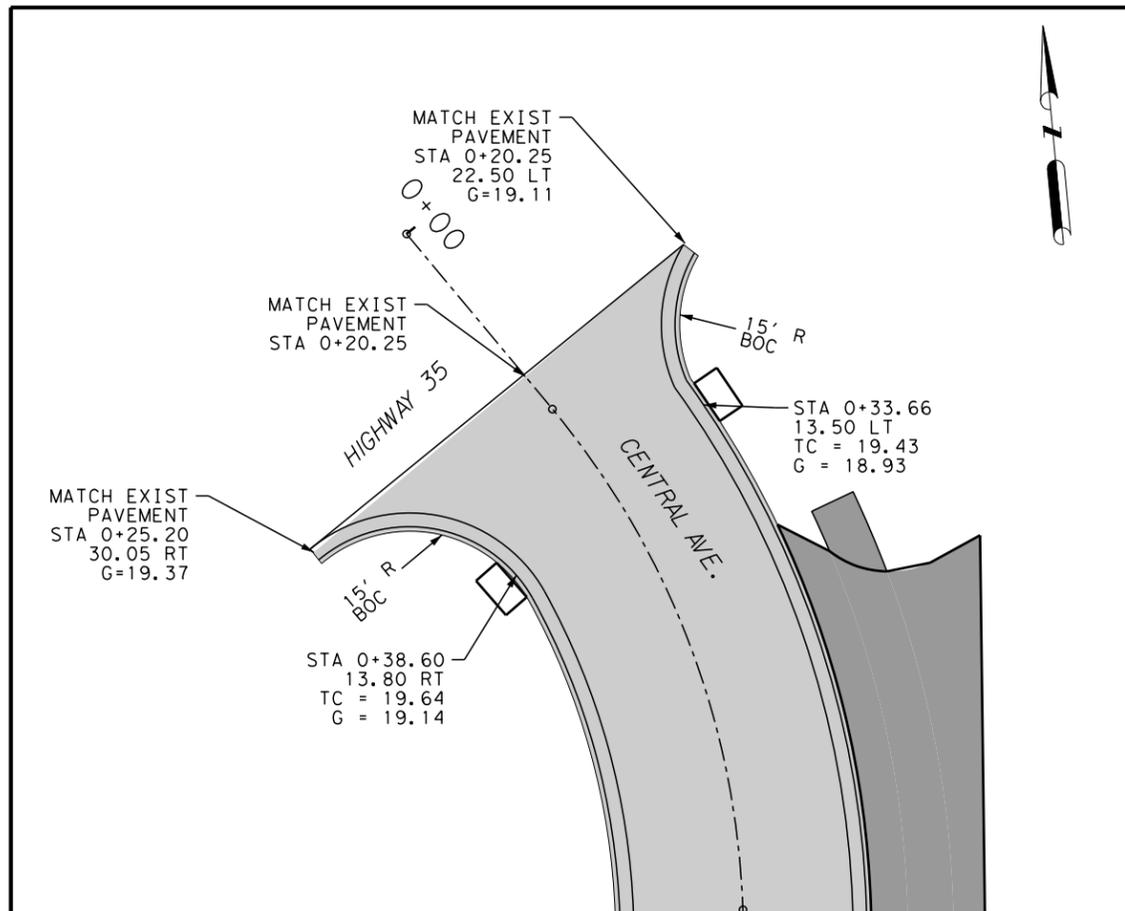
**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

**BORDER STREET INTERSECTION LAYOUTS**

SHEET 1 OF 2

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| PROJECT NO. | 25-015-03 | SHEET NO. | 30 |
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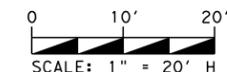
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PROP 3' WIDE CONCRETE FLUME WITH 6" CURB TO DRAIN DITCH ALONG GEORGE ST TO PROP VALLEY GUTTER. GRADE TO DRAIN. PLACE CURB MONOLITHICALLY WITH FLUME AND EXTEND REINFORCEMENT INTO CURB. TRANSITION 5' OF CURB EACH SIDE FROM 6" TO 0" AT EXIST DITCH - 5 SY

**NOTE:**

INTERSECTION DRAINAGE IS PROVIDED AROUND RADII BY CORNER INLETS AND NOT ACROSS ROADWAY. GRADE ROADWAY SURFACE AT INTERSECTIONS TO PROVIDE A SMOOTH, UNIFORM TRANSITION FROM THE CROWN SHOWN ON THE TYPICAL SECTIONS THROUGH THE INTERSECTION AREA. PROVIDE POSITIVE DRAINAGE TO CURB ON ALL SIDES AND CORNERS WITH NO VALLEYS AT PROJECTED CURB LINES.



NAME: *Randy P. Janak* PE  
 DATE: 2/24/2026



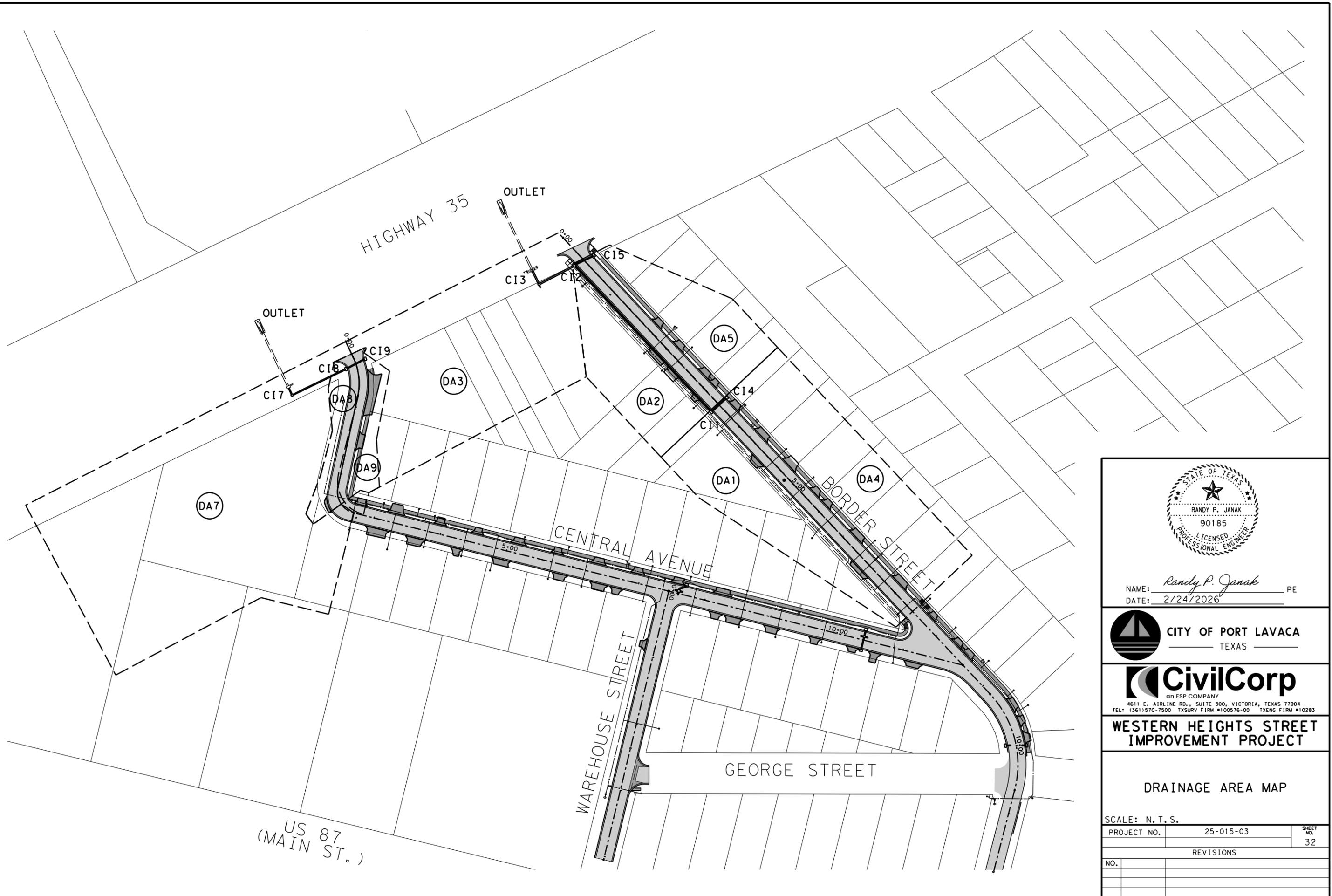
**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

**CENTRAL AVE/WAREHOUSE ST INTERSECTION LAYOUTS**

SHEET 1 OF 1

|             |           |           |    |
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| PROJECT NO. | 25-015-03 | SHEET NO. | 31 |
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NAME: *Randy P. Janak* PE  
 DATE: 2/24/2026



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**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

**DRAINAGE AREA MAP**

SCALE: N. T. S.

|             |           |           |    |
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| PROJECT NO. | 25-015-03 | SHEET NO. | 32 |
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### DRAINAGE AREAS

| ID  | AREA (AC) | RESIDENTIAL | PAVEMENT | TC | INTENSITY | DISCHARGE |
|-----|-----------|-------------|----------|----|-----------|-----------|
| DA1 | 0.786     | 0.6501      | 0.1359   | 35 | 3.974     | 1.332     |
| DA2 | 0.624     | 0.529       | 0.095    | 25 | 4.864     | 1.337     |
| DA3 | 1.822     | 1.54        | 0.282    | 45 | 3.386     | 2.726     |
| DA4 | 1.15      | 1.017       | 0.1326   | 40 | 3.653     | 1.79      |
| DA5 | 0.611     | 1.54        | 0.282    | 25 | 4.864     | 1.313     |
| DA7 | 2.861     | 2.61        | 0.251    | 45 | 3.386     | 4.021     |
| DA8 | 0.184     | 0.107       | 0.077    | 15 | 6.402     | 0.645     |
| DA9 | 0.212     | 0.139       | 0.073    | 15 | 6.402     | 0.703     |

Runoff Coefficient for Pavement = 0.78  
 Runoff Coefficient for Residential = 0.38

### INLETS

| INLET | TYPE     | DISCHARGE | POND WIDTH | POND DEPTH | LENGTH | DEPR. | CAPACITY | BY PASS | TO NODE |
|-------|----------|-----------|------------|------------|--------|-------|----------|---------|---------|
| CI-1  | ON GRADE | 1.332     | 6.346      | 0.235      | 5      | 0.25  | 1.263    | 0.069   | CI-2    |
| CI-2  | ON GRADE | 1.406     | 6.476      | 0.24       | 5      | 0.25  | 1.318    | 0.088   | CI-3    |
| CI-3  | SAG      | 2.814     | 11.002     | 0.168      | 5      | 0.25  | 14.393   | N/A     | N/A     |
| CI-4  | ON GRADE | 1.79      | 7.09       | 0.262      | 5      | 0.25  | 1.581    | 0.21    | CI-5    |
| CI-5  | ON GRADE | 1.523     | 6.673      | 0.247      | 5      | 0.25  | 1.402    | 0.121   | CI-6    |
| CI-7  | SAG      | 4.021     | 12         | 0.267      | 15     | 0.25  | 10.327   | N/A     | N/A     |
| CI-8  | SAG      | 0.645     | 6.965      | 0.09       | 5      | 0.25  | 8.457    | N/A     | N/A     |
| CI-9  | SAG      | 0.703     | 4.899      | 0.095      | 5      | 0.25  | 8.457    | N/A     | N/A     |

### PIPE RUNS

| RUN ID | UPSTREAM | DOWNSTREAM | US HGL | DS HGL | DISCHARGE | CAPACITY | SLOPE | LOSS  | UNIFORM  |       | ACTUAL   |       |
|--------|----------|------------|--------|--------|-----------|----------|-------|-------|----------|-------|----------|-------|
|        |          |            |        |        |           |          |       |       | VELOCITY | DEPTH | VELOCITY | DEPTH |
| R-1    | CI-1     | CI-2       | 16.984 | 16.714 | 3.005     | 5.753    | 0.212 | 0.063 | 3.068    | 0.814 | 1.701    | 1.5   |
| R-2    | CI-2     | JB-1       | 16.714 | 16.131 | 4.866     | 9.839    | 0.131 | 0.559 | 2.892    | 1.056 | 1.549    | 2     |
| R-3    | JB-1     | CI-3       | 16.131 | 16.08  | 4.866     | 12.547   | 0.219 | 0.043 | 3.501    | 0.909 | 1.549    | 2     |
| R-4    | CI-3     | OUTLET     | 16.08  | 16.06  | 7.365     | 26.23    | 0.31  | 0.003 | 4.396    | 0.935 | 1.506    | 2.46  |
| R-5    | CI-4     | CI-1       | 17.01  | 16.984 | 1.79      | 6.897    | 0.324 | 0.016 | 3.133    | 0.539 | 1.013    | 1.5   |
| R-6    | CI-5     | CI-2       | 16.727 | 16.714 | 1.313     | 6.77     | 0.314 | 0.009 | 2.84     | 0.462 | 0.743    | 1.5   |
| L-1    | CI-9     | CI-8       | 15.858 | 15.831 | 0.703     | 9.344    | 0.582 | 0.033 | 2.953    | 0.289 | 0.902    | 0.681 |
| L-2    | CI-8     | CI-7       | 15.831 | 15.772 | 1.34      | 6.555    | 0.285 | 0.013 | 2.76     | 0.479 | 1.207    | 0.902 |
| L-3    | CI-7     | OUTLET     | 15.772 | 15.84  | 4.734     | 62.826   | 1.728 | 0.048 | 7.155    | 0.481 | 0.964    | 2.5   |



NAME: *Randy P. Janak* PE  
 DATE: 2/24/2026

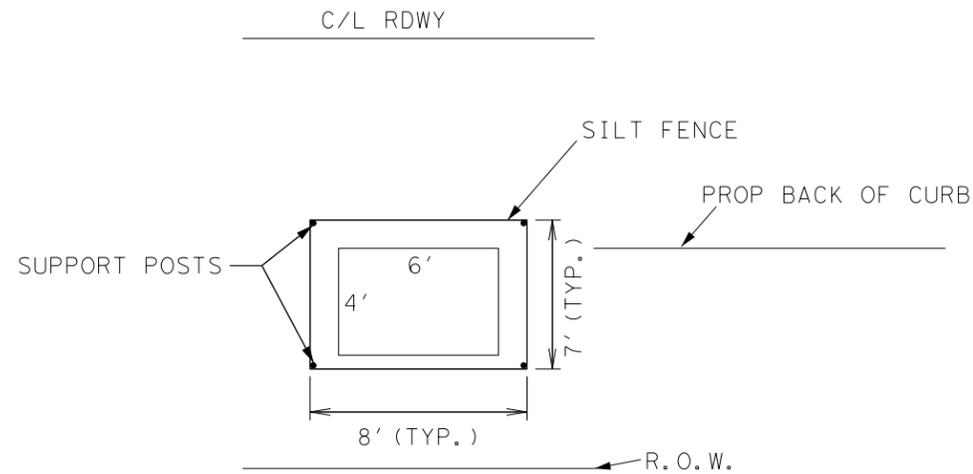


### WESTERN HEIGHTS STREET IMPROVEMENT PROJECT

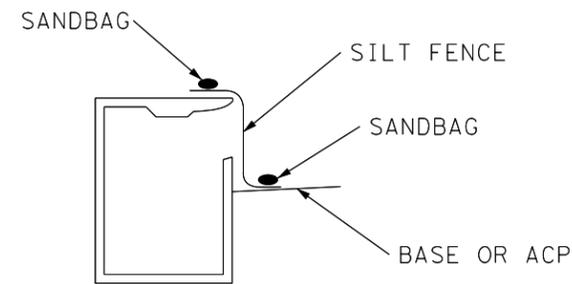
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|             |           |           |    |
|-------------|-----------|-----------|----|
| PROJECT NO. | 25-015-03 | SHEET NO. | 33 |
| REVISIONS   |           |           |    |
| NO.         |           |           |    |
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**DETAIL 1**  
 TYPICAL SILT FENCE DETAIL  
 30 L.F. /CURB INLET (TYP.)

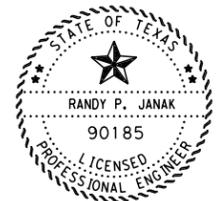


**DETAIL 2**  
 TYPICAL SILT FENCE @ FRONT  
 OF COMPLETE CURB INLET  
 W/ TOP  
 10 L.F. /INLET OPENING (TYP.)

SW3P SUMMARY

|                                |  |
|--------------------------------|--|
| 506                            | 506  |
| TEMP<br>SEDMT<br>CONT<br>FENCE | TEMP<br>SEDMT<br>CONT<br>FENCE<br>(REMOVE) |
| LF                             | LF   |
| 470                            | 470  |

15 PROP - NEW/REBUILT CURB INLETS  
 2 EXIST - CURB INLET



NAME: *Randy P. Janak* PE  
 DATE: 2/24/2026



**CITY OF PORT LAVACA**  
 TEXAS



an ESP COMPANY  
 4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
 TEL: (361)570-7500 TXSURV FIRM #100576-00 TXENG FIRM #10283

**WESTERN HEIGHTS STREET  
 IMPROVEMENT PROJECT**

**STORM WATER  
 POLLUTION  
 PREVENTION  
 PLAN  
 SUMMARY & DETAILS**

SCALE: N.T.S.

|             |           |           |    |
|-------------|-----------|-----------|----|
| PROJECT NO. | 25-015-03 | SHEET NO. | 34 |
| REVISIONS   |           |           |    |
| NO.         |           |           |    |
|             |           |           |    |
|             |           |           |    |

SITE DESCRIPTION

PROJECT LIMITS:

BORDER ST FROM SH 35 TO 0.023 MILES SOUTH OF GEORGE ST  
 SHORT AND CENTRAL ST FROM SH 35 TO BORDER ST  
 WAREHOUSE ST FROM CENTRAL ST 0.074 MILES SOUTH

PROJECT DESCRIPTION:

STREET RECONSTRUCTION INCLUDING STORM SEWER, GRADING, GEOGRID PLACEMENT, FLEX BASE, SURFACING, AND WATER LINE REPLACEMENT.

MAJOR SOIL DISTURBING ACTIVITIES:

STREET RECONSTRUCTION, DRIVEWAY RECONSTRUCTION, YARD GRADING, STORM SEWER INSTALLATION

TOTAL PROJECT AREA: 2.876 ACRES (ROW AREA)

TOTAL AREA TO BE DISTURBED: 2.157 ACRES (AT EACH SITE)

WEIGHTED RUNOFF COEFFICIENT (AFTER CONSTRUCTION): 0.65

EXISTING CONDITION OF SOIL & VEGETATIVE COVER AND % OF EXISTING VEGETATIVE COVER:

THE EXISTING SOILS UNDER ARE CLAYS (CH) WITH A VEGETATIVE COVER OF 95% WITH VARIOUS GRASSES WHICH ARE IN GOOD CONDITION.

NAME OF RECEIVING WATERS: LAVACA BAY (2453)

EROSION AND SEDIMENT CONTROLS

SOIL STABILIZATION PRACTICES:

- TEMPORARY SEEDING
- PERMANENT PLANTING, SODDING, OR SEEDING
- MULCHING
- SOIL RETENTION BLANKET
- BUFFER ZONES
- PRESERVATION OF NATURAL RESOURCES

OTHER: DISTURBED AREAS ON WHICH CONSTRUCTION ACTIVITY HAS CEASED (TEMPORARILY OR PERMANENTLY) SHALL BE STABILIZED WITHIN 14 DAYS UNLESS ACTIVITIES ARE SCHEDULED TO RESUME WITHIN 21 DAYS.

STRUCTURAL PRACTICES:

- SILT FENCES
- HAY BALES
- ROCK FILTER DAMS
- DIVERSION, INTERCEPTOR, OR PERIMETER DIKES
- DIVERSION, INTERCEPTOR, OR PERIMETER SWALES
- DIVERSION DIKE AND SWALE COMBINATIONS
- PIPE SLOPE DRAINS
- PAVED FLUMES
- ROCK BEDDING AT CONSTRUCTION EXIT
- TIMBER MATTING AT CONSTRUCTION EXIT
- CHANNEL LINERS
- SEDIMENT TRAPS

EROSION AND SEDIMENT CONTROLS (CONT.)

STRUCTURAL PRACTICES (CONT.):

- SEDIMENT BASINS
  - STORM INLET SEDIMENT TRAP
  - STONE OUTLET STRUCTURES
  - CURBS AND GUTTERS
  - STORM SEWERS
  - VELOCITY CONTROL DEVICES
  - VEGETATIVE FILTER STRIPS
  - TEMPORARY EROSION CONTROL LOGS (BIOLOGS)
- T= TEMPORARY  
 P= PERMANENT

NARRATIVE - SEQUENCE OF CONSTRUCTION (STORM WATER MANAGEMENT) ACTIVITIES:

THE ORDER OF ACTIVITIES WILL BE AS FOLLOWS:

1. INSTALL EROSION CONTROL DEVICES ON EXISTING INLETS.
2. INSTALL STORM SEWER AND WATER LINES.
3. PERFORM ROAD WORK INCLUDING STREET EXCAVATION, CEMENT TREAT SUBGRADE, PLACEMENT OF GEOGRID, PLACEMENT OF 6" FLEX BASE, CONSTRUCT CURBS & DRIVEWAYS, PLACEMENT OF 4" FLEX BASE, PLACE PRIME COAT, ONE COURSE SURFACE TREATMENT, AND HMAC.
4. REMOVE TEMPORARY EROSION CONTROL DEVICES.

STORM WATER MANAGEMENT:

ALL STORMWATER FROM THE PROJECT WILL BE DIRECTED TO CURB AND GUTTERS AND STORM SEWER INLETS/PIPE. THIS SYSTEM WILL CARRY DRAINAGE WITHIN THE R.O.W. TO OUTFALL AT LAVACA BAY.

OTHER EROSION AND SEDIMENT CONTROLS:

MAINTENANCE:

ALL EROSION AND SEDIMENT CONTROLS WILL BE MAINTAINED IN GOOD WORKING ORDER. IF A REPAIR IS NECESSARY, IT WILL BE DONE AT THE EARLIEST DATE POSSIBLE, BUT NO LATER THAN 7 CALENDAR DAYS AFTER THE SURROUNDING EXPOSED GROUND HAS DRIED SUFFICIENTLY TO PREVENT FURTHER DAMAGE FROM HEAVY EQUIPMENT. THE AREAS ADJACENT TO CREEKS AND DRAINAGEWAYS SHALL HAVE PRIORITY.

WASTE MATERIALS:

ALL WASTE MATERIALS WILL BE COLLECTED AND STORED IN A SECURELY LIDDED METAL DUMPSTER. THE DUMPSTER WILL MEET ALL STATE AND LOCAL CITY SOLID WASTE MANAGEMENT REGULATIONS. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN THE DUMPSTER. THE DUMPSTER WILL BE EMPTIED AS NECESSARY OR AS REQUIRED BY LOCAL REGULATION AND THE TRASH WILL BE HAULED TO A PERMITTED LANDFILL. NO CONSTRUCTION WASTE MATERIAL WILL BE BURIED ON SITE.

HAZARDOUS WASTE (INCLUDING SPILL REPORTING):

AT A MINIMUM, ANY PRODUCTS IN THE FOLLOWING CATEGORIES ARE CONSIDERED TO BE HAZARDOUS: PAINTS, ACIDS FOR CLEANING MASONRY SURFACES, CLEANING SOLVENTS, ASPHALT PRODUCTS, CHEMICAL ADDITIVES FOR SOIL STABILIZATION, OR CONCRETE CURING COMPOUNDS AND ADDITIVES. IN THE EVENT OF A SPILL WHICH MAY BE HAZARDOUS, THE SPILL COORDINATOR SHALL BE CONTACTED IMMEDIATELY.

SANITARY WASTE:

ALL SANITARY WASTE WILL BE COLLECTED FROM THE PORTABLE UNITS AS NECESSARY OR AS REQUIRED BY LOCAL REGULATION BY A LICENSED SANITARY WASTE MANAGEMENT CONTRACTOR.

OFFSITE VEHICLE TRACKING:

- HAUL ROADS DAMPENED FOR DUST CONTROL
- LOADED HAUL TRUCKS TO BE COVERED WITH TARPULIN
- EXCESS DIRT ON ROAD REMOVED DAILY
- STABILIZED CONSTRUCTION ENTRANCE

INSPECTION:

Qualified personnel shall inspect disturbed areas of the construction site that have not been finally stabilized, areas used for storage of materials that are exposed to precipitation, structural control measures, and locations where vehicles enter or exit the site.

Inspection Cycle Option:

- 1. At least every 14 calendar days or within 24 hrs after 0.5 inches or more of rainfall.
- 2. At least every 7 calendar days.
- 3. At least monthly (Engineer & DEQC approved revision to SW3P required).

a). Disturbed areas that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Sediment and erosion control measures identified on the SW3P shall be observed to ensure that they are operating correctly. Locations where vehicles enter or exit the site shall be inspected for evidence of offsite sediment tracking. Sediments must be removed from sediment control structures no later than the time that the design capacity has been reduced by 50%.

b). Based on the result of the inspection, the SW3P shall be revised to include (show on Site Map) additional or modified BMP's designed to correct the observed deficiency. Revisions to the SW3P must be completed within seven (7) calendar days following the inspection.

c). A report summarizing the scope, date, name and qualifications of inspector, and major observations relating to the implementation of the SW3P shall be produced and retained as part of the SW3P for 3 years from date of final stabilization.

d). The following records must be maintained and either attached to or referenced in the SW3P, and made readily available upon request to the parties in Part III.D.1 of the CGP: 1). The dates when major grading activities occur; 2). The dates when construction activities temporarily or permanently cease on a portion of the site and; 3). The dates when stabilization measures are initiated.

REMARKS:

DISPOSAL AREAS, STOCKPILES, AND HAUL ROADS SHALL BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE AND CONTROL THE AMOUNT OF SEDIMENT THAT MAY ENTER RECEIVING WATERS. DISPOSAL AREAS SHALL NOT BE LOCATED IN ANY WETLAND, WATERBODY OR STREAMBED.

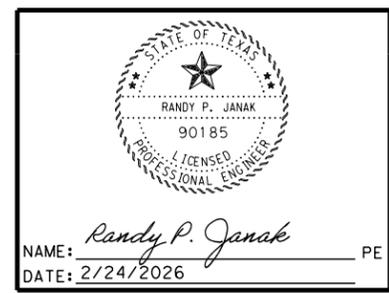
CONSTRUCTION STAGING AREAS AND VEHICLE MAINTENANCE AREAS SHALL BE CONSTRUCTED BY THE CONTRACTOR IN A MANNER TO MINIMIZE THE RUNOFF OF POLLUTANTS.

ALL WATERWAYS SHALL BE CLEARED AS SOON AS PRACTICABLE OF TEMPORARY EMBANKMENT, TEMPORARY BRIDGES, MATTING, FALSEWORK PILING, DEBRIS OR OTHER OBSTRUCTIONS PLACED DURING CONSTRUCTION OPERATIONS THAT ARE NOT PART OF THE FINISHED WORK.

STORM WATER POLLUTION PREVENTION PLAN is consistent with requirements specified in applicable sediment and erosion site plans or site permits, or storm water management site plans or site permits approved by State, Tribal or local officials (i.e. MS4 Permits).

Any reportable quantity of Hazardous Material release must be reported to the National Response Center at 1-800-424-8802.

A copy of the Construction General Permit TXR150000 is part of the SW3P.



SHEET 1 OF 2

|                   |                         |                 |
|-------------------|-------------------------|-----------------|
| FED. RD. DIV. NO. | FEDERAL AID PROJECT NO. | SHEET NO.       |
|                   |                         | 35              |
| STATE             | STATE DIST. NO.         | COUNTY          |
| TEXAS             |                         | CALHOUN         |
| CONT.             | SECT.                   | JOB HIGHWAY NO. |
|                   |                         |                 |

STORM WATER POLLUTION PREVENTION PLAN (SW3P)

## List of Potential Pollutants

### Potential Pollutant

### Related Source

### Controls

Virgin Asphaltic Material inclusive of prime oils, precoat aggregates, and hot mix bituminous mixtures

Applications of prime coats, seal coat, and paving operations

This material shall be applied at appropriate rates for construction purposes which will preclude these materials from entering runoff. In the event of any unintended discharge, controls to contain runoff will be immediately placed and TCEQ will be immediately notified.

Concrete, rebar, wire, wire fabric lumber, nails, styrofoam block, fiberboard, curing compound and linseed oil

Construction of concrete bridge components such as drilled shafts, culverts, abutments, bents, reinforced concrete slabs, rail, inlet, concrete traffic barriers, curb and gutter, riprap and sign foundations

This construction waste shall be properly disposed of in accordance with state and local regulations. When stored on site prior to disposal, it shall be contained so as to ensure that it cannot enter surface runoff. Any temporary fills must be removed in their entirety and the affected areas returned to their preexisting condition/elevation

Wood posts, steel posts, barrels, cones, sign boards (aluminum and plywood)

Placement and/or removal of barricades, signs and traffic control devices

This construction waste shall be properly disposed of in accordance with state and local regulations. When stored on site prior to disposal, it shall be contained so as to ensure that it cannot enter surface runoff.

Wood post, steel post, steel fasteners, nuts, bolts, washers

Construction of metal beam guard fence

This construction waste shall be properly disposed of in accordance with state and local regulations. When stored on site prior to disposal, it shall be contained so as to ensure that it cannot enter surface runoff.

Structural steel I-beam, sign boards, concrete foundations

Removal of roadside sign assemblies large and small

This construction waste shall be properly disposed of in accordance with state and local regulations. When stored on site prior to disposal, it shall be contained so as to ensure that it cannot enter surface runoff.

Thermoplastic paint, glass beads, reflective tabs, raised reflective pavement markers

Application of pavement markings/markers

This construction waste shall be properly disposed of in accordance with state and local regulations. When stored on site prior to disposal, it shall be contained so as to ensure that it cannot enter surface runoff.

Petroleum products (Small quantities introduced by contractor)

Equipment failure, maintenance and repair

All equipment and vehicle maintenance shall be performed in a designated area with appropriate measures for containment and proper disposal of all waste materials including hydraulic oil and other liquids in accordance state and local waste management regulations. All material stored prior to disposal shall be contained in a container with a secure cover meeting all state and local waste management regulations.

Eligible Non-storm water discharges, including but not limited to:  
Non-potable water  
Non-storm Water Discharge

Moisture applications for dust control, density, and vegetation watering

This material shall be applied at appropriate rates for construction purposes which will preclude these materials from entering runoff. In the event of any unintended discharge, controls to contain runoff will be immediately placed and the non-potable water will be recovered and properly stored for reuse.

Survey stake, flagging tape and paint

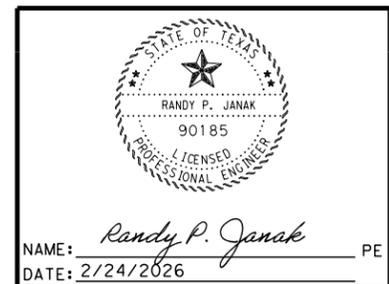
Survey staking, alignment establishment

This construction waste shall be properly disposed of in accordance with state and local regulations. When stored on site prior to disposal, it shall be contained so as to ensure that it cannot enter surface runoff.

Unsuitable fill material

Excavation - roadway, special and erosion control

This construction waste shall be properly disposed of in accordance with state and local regulations. When stored on site prior to disposal, it shall be contained so as to ensure that it cannot enter surface runoff.

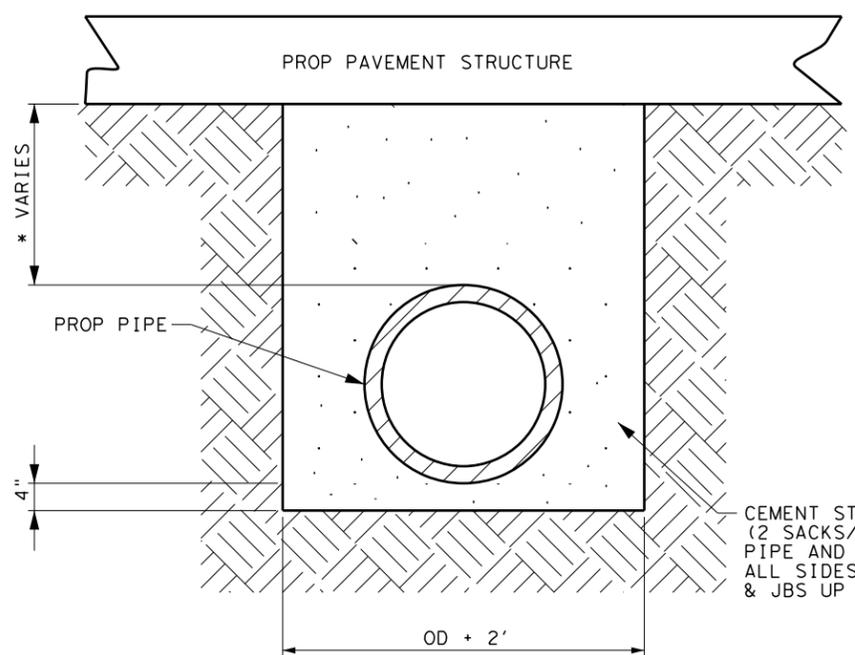


SHEET 2 OF 2

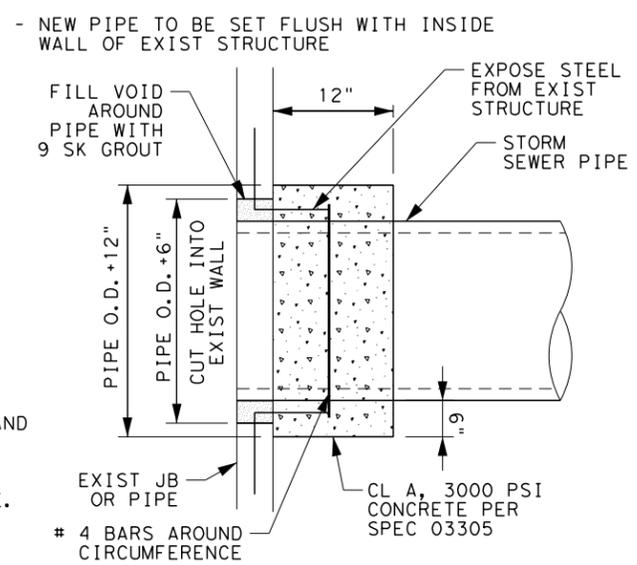
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|                   |                         | 36              |
| STATE             | STATE DIST. NO.         | COUNTY          |
| TEXAS             |                         | CALHOUN         |
| CONT.             | SECT.                   | JOB HIGHWAY NO. |
|                   |                         |                 |

STORM WATER POLLUTION  
PREVENTION PLAN (SW3P)

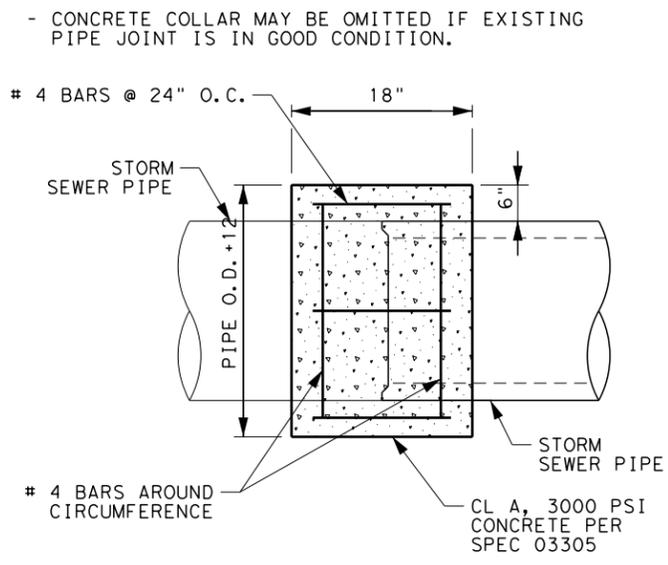
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\* MIN 6" CEMENT SAND IN NON-TRAFFIC AREAS  
**STORM SEWER CEMENT STABILIZED BACKFILL**  
 (NTS)  
 AROUND PIPE, INLETS & JBS



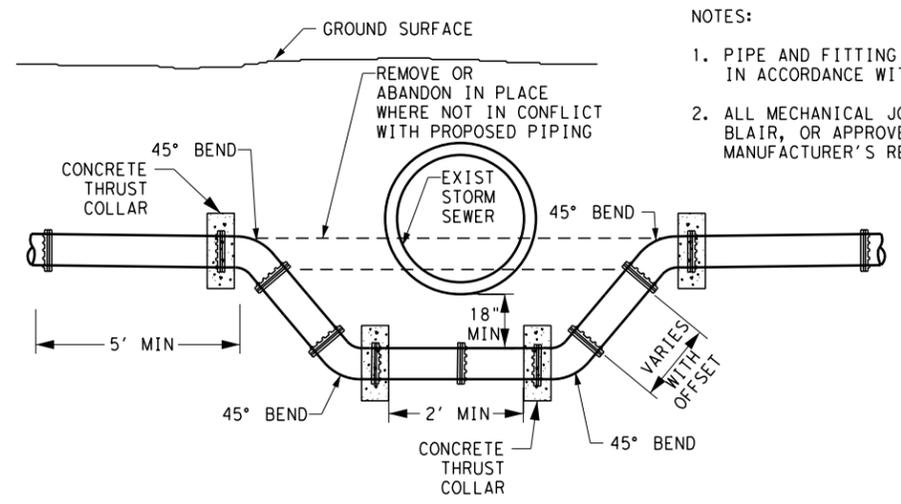
**GRouted STORM SEWER CONNECTION (PIPE TO EXIST JB, OR PIPE)**  
 (NTS)



**GRouted STORM SEWER CONNECTION (CONCRETE COLLAR)**  
 (NTS)

**GENERAL NOTES**

1. INSTALLATION OF PRECAST STRUCTURES SHALL BE PER MANUFACTURERS INSTRUCTIONS. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF PRE-CAST STRUCTURES TO ENGINEER PRIOR TO ORDERING MATERIALS.
2. PRECAST STRUCTURE, RING, AND COVER SHALL BE DESIGNED FOR AASHTO HS-20 LOAD RATED.
3. PLACE RAMNEK OR EQUAL GASKET MATERIAL BETWEEN PRECAST STRUCTURES SECTIONS IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS.
4. BACKFILL AROUND BOX W/CEMENT STABILIZED SAND; 12" MINIMUM; TO WITHIN 6" TO FINISH GRADE.
5. BLOCK OUT AT THE STORM SEWER TIE-IN(S) SHALL BE FILLED W/3000 PSI, CLASS "A" CONCRETE, FLUSH WITH THE OUTSIDE WALL OF THE INLET.
6. TRAFFIC AREA DEFINED AS ANY PART OF TRENCH ZONE WITHIN 2' FROM OUTSIDE BACK OF CURB OR EDGE OF ROAD. PAVED AREAS INCLUDE STREETS, DRIVEWAYS, AND PARKING LOTS.



- NOTES:**
1. PIPE AND FITTING MATERIALS AND INSTALLATION TO BE IN ACCORDANCE WITH CITY AND CONTRACT SPECIFICATIONS.
  2. ALL MECHANICAL JOINTS TO BE RESTRAINED WITH FORD, SMITH BLAIR, OR APPROVED EQUAL JOINT RESTRAINTS AS PER MANUFACTURER'S RECOMMENDATIONS.



NAME: *Randy P. Janak* PE  
 DATE: *2/24/2026*



**CivilCorp**  
 an ESP COMPANY  
 4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
 TEL: (361) 570-7500 TXSURV FIRM #100576-00 TXENG FIRM #10283

**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

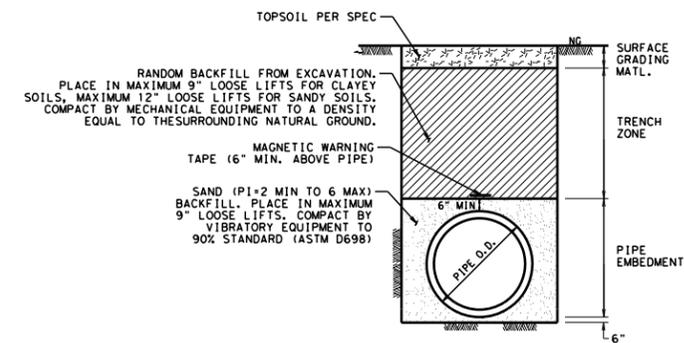
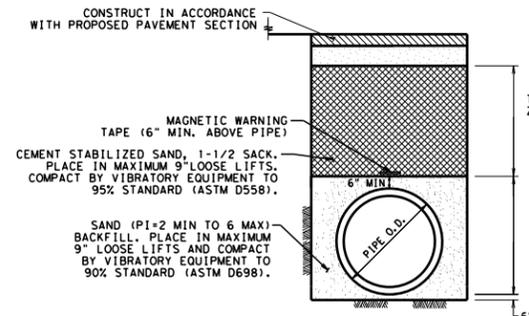
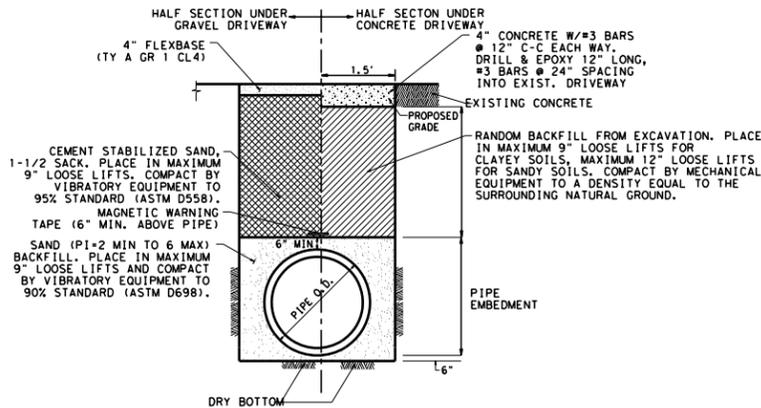
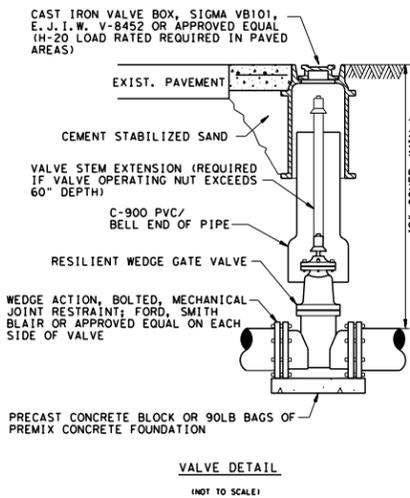
**STORM SEWER DETAILS**

SCALE: N.T.S.

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| PROJECT NO. | 25-015-03 | SHEET NO. | 37 |
| REVISIONS   |           |           |    |
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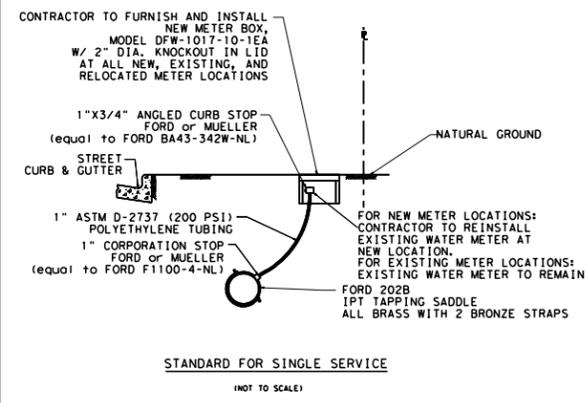
**GENERAL NOTES**

- GATE VALVES SHALL BE USED FOR WATER LINES 12" IN DIAMETER AND SMALLER.
- VALVES LOCATED IN ROADS, DRIVEWAYS, OR WALKS: CONCRETE DISC AROUND TOP OF VALVE BOX SHALL BE 11" RADIUS CIRCLE (MEASURED FROM CENTER OF VALVE BOX), 6" - 10" THICK, CLASS "A" CONCRETE (MATCH ADJACENT CONCRETE PAVEMENT, IF ASPHALT USE 6"), REINFORCE WITH #4 REINFORCEMENT BARS AT 8" O.C.E.W. ONE LAYER.

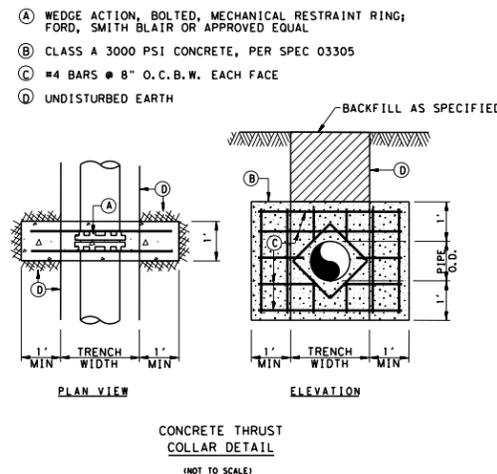


| WATER TRENCH WIDTHS |                   |                   |
|---------------------|-------------------|-------------------|
| PIPE SIZE (INCHES)  | MIN. TRENCH WIDTH | MAX. TRENCH WIDTH |
| LESS THAN 24"       | O.D. + 12"        | O.D. + 36"        |

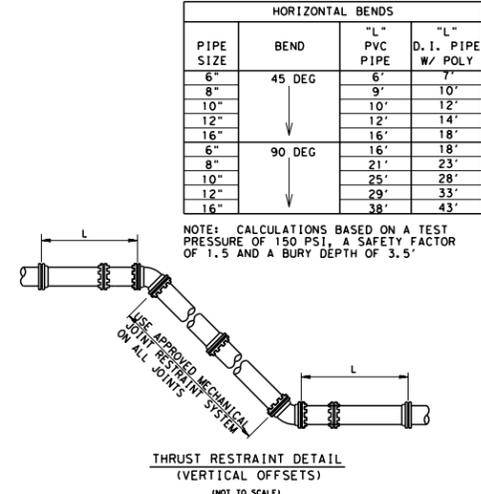
- NOTE:**
- BACKFILL W/ CEMENT STABILIZED SAND ABOVE PIPE BEDDING IN PAVED AREAS.
  - SERVICES UNDER PAVEMENT/DRIVEWAYS TO BE BACKFILLED IN ACCORDANCE W/ TRENCH-ZONE BACKFILL DETAILS. WHERE ROAD IS NOT BEING REBUILT, PAVEMENT, DRIVEWAY, & SIDEWALK REPAIR/RESTORATION DUE TO INSTALLATION OF SERVICES IS SUBSIDIARY TO THE WATER SERVICE BID ITEM.
  - CONTRACTOR SHALL RESTORE PRIVATE PROPERTY TO A CONDITION EQUAL TO OR BETTER THAN EXISTING PRIOR TO CONSTRUCTION AT THE SERVICE CONNECTION LOCATIONS.



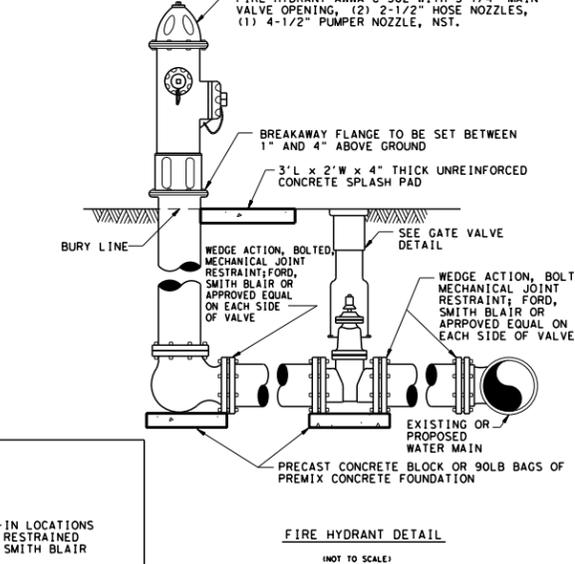
- GENERAL NOTES**
- CONCRETE THRUST COLLARS MAY BE USED IN OTHER LOCATIONS, SUCH AS TIE-INS, WHERE THE DISTANCE REQUIRED FOR JOINT RESTRAINT WOULD REQUIRE RESTRAINING OF EXISTING PIPE BEYOND THE TIE-IN POINT



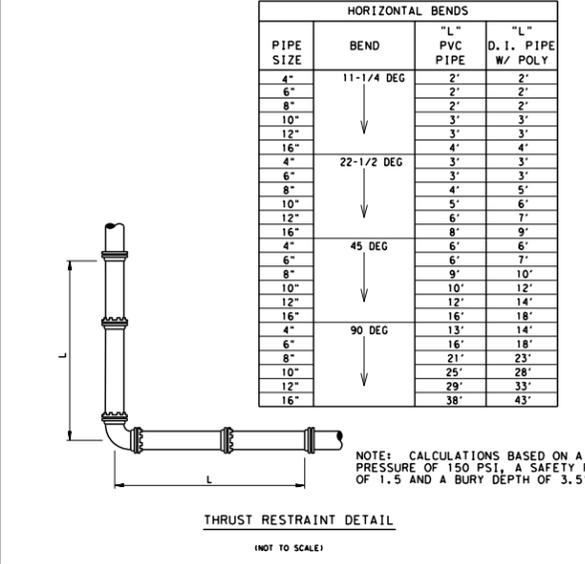
- GENERAL NOTES**
- ALL JOINTS WITHIN DISTANCE "L" OF A HORIZONTAL BEND SHALL BE RESTRAINED USING A MECHANICAL RESTRAINT SYSTEM; FORD, SMITH BLAIR OR APPROVED EQUAL.



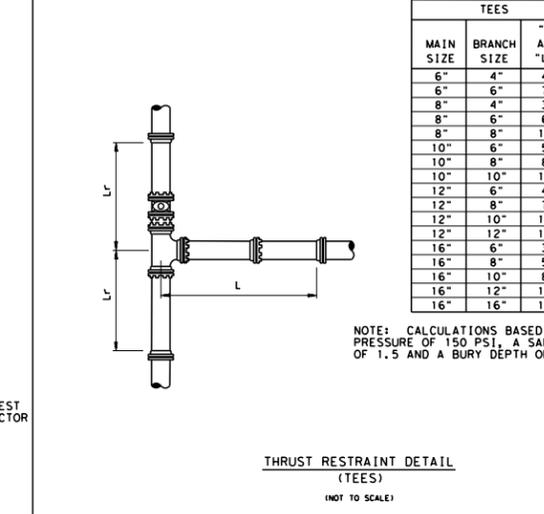
- GENERAL NOTES**
- INSTALL WEDGE ACTION, BOLTED MECHANICAL JOINT RESTRAINT; FORD, SMITH BLAIR OR APPROVED EQUAL ON ALL PIPE JOINTS BETWEEN MAIN AND HYDRANT.
  - BLUE REFLECTORIZED MARKERS SHALL BE LOCATED ON THE CENTERLINE OF THE PAVEMENT ACROSS FROM ALL FIRE HYDRANTS. PAVEMENT MARKERS AT INTERSECTIONS SHALL BE FOUR-SIDED. MARKERS SHALL BE SUBSIDIARY TO THE FIRE HYDRANT.



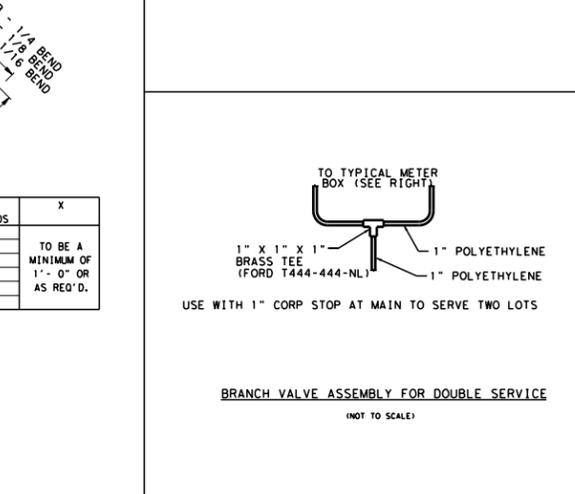
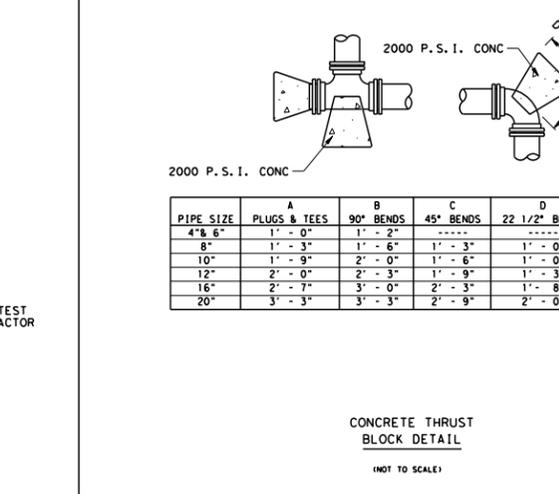
- GENERAL NOTES**
- ALL JOINTS WITHIN DISTANCE "L" OF A HORIZONTAL BEND SHALL BE RESTRAINED USING A MECHANICAL RESTRAINT SYSTEM; FORD, SMITH BLAIR OR APPROVED EQUAL.



- GENERAL NOTES**
- THE VALUES IN THE TABLE WERE ESTABLISHED FOR DISTANCE "L" EQUAL TO "L". OTHER VALUES OF "L" MAY BE CALCULATED FOR VARYING DISTANCES OF "L".
  - ALL JOINTS WITHIN DISTANCE "L" OF A TEE SHALL BE RESTRAINED USING A MECHANICAL RESTRAINT SYSTEM; FORD, SMITH BLAIR OR APPROVED EQUAL.
  - NO JOINTS, OTHER THAN RESTRAINED VALVES LOCATED ADJACENT TO THE TEE, ARE ALLOWED WITHIN DISTANCE "L" OF A TEE.



- GENERAL NOTES**
- CONCRETE THRUST BLOCKS MAY ONLY BE UTILIZED AT TIE-IN LOCATIONS WITH EXISTING MAINS. ALL OTHER LOCATIONS SHALL BE RESTRAINED USING A MECHANICAL JOINT RESTRAINING SYSTEM; FORD, SMITH BLAIR OR APPROVED EQUAL.



NAME: *Randy P. Janak* PE  
DATE: 2/25/2026



**CivilCorp**  
an ESP COMPANY  
4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
TEL: (361) 570-7500 TXSURV FIRM #100576-00 TXENG FIRM #10283

**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

**WATER DETAIL SHEET**

SCALE: N. T. S.

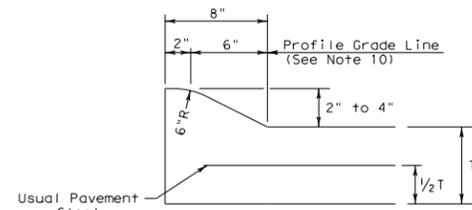
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| REVISIONS   |           |           |    |
| NO.         |           |           |    |

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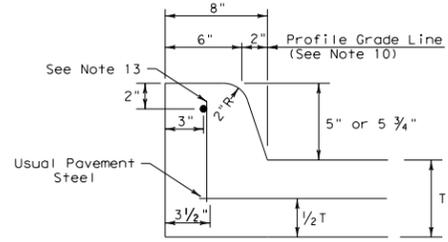


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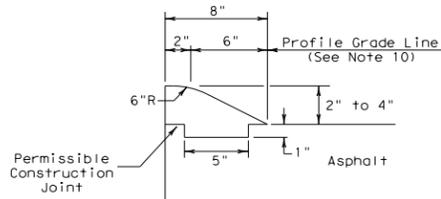
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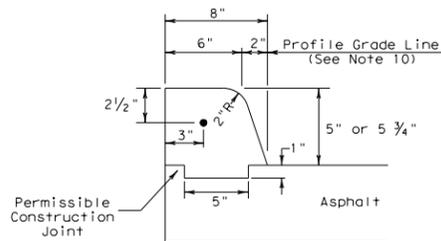
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2" - 4" HEIGHT



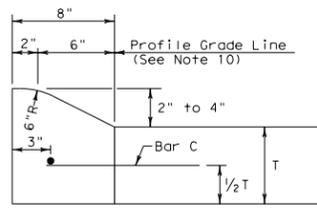
TYPE II CURB (MONOLITHIC)  
5" - 5 3/4" HEIGHT



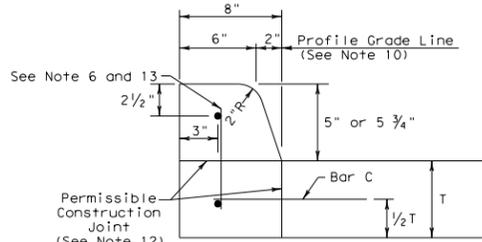
TYPE III CURB (KEYED)  
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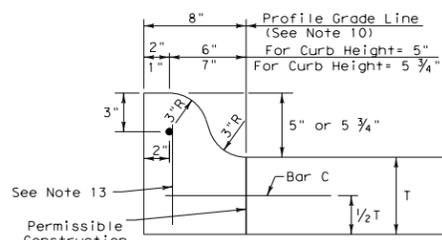
TYPE IV CURB (KEYED)  
5" - 5 3/4" HEIGHT



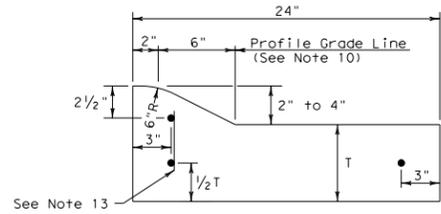
TYPE I CURB  
2" - 4" HEIGHT



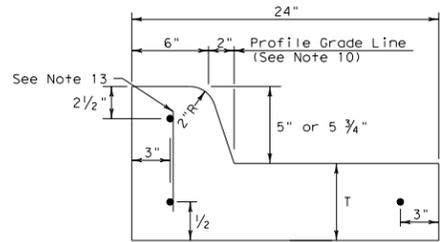
TYPE II CURB  
5" - 5 3/4" HEIGHT



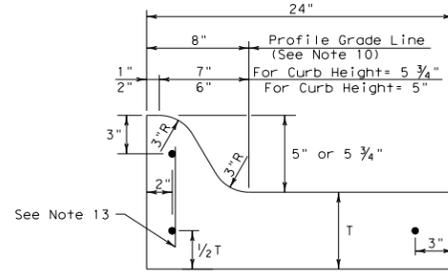
TYPE IIa CURB  
5" - 5 3/4" HEIGHT



TYPE I CURB AND GUTTER  
2" - 4" HEIGHT



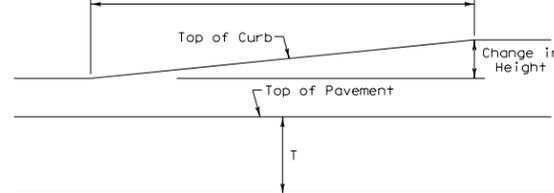
TYPE II CURB AND GUTTER  
5" - 5 3/4" HEIGHT



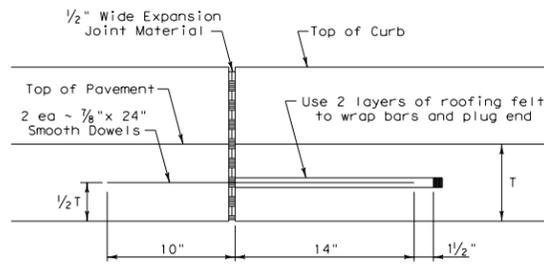
TYPE IIa CURB AND GUTTER  
5" - 5 3/4" HEIGHT

CURB TRANSITION NOTE:  
Field conditions may require a longer or shorter transition, and shall be shown elsewhere in the plans, or as directed by the Engineer.

10'-0" Curb Transition (0" to 2"),  
(See Curb Transition Note)



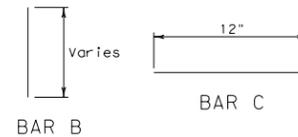
CURB TRANSITION  
Note: To be paid for as Highest Curb



EXPANSION JOINT DETAIL

GENERAL NOTES

- All materials and construction shall be in accordance with Item 529, "Concrete Curb, Gutter, and Combined Curb and Gutter."
- Concrete shall be Class A.
- When reinforcing bars are used, they shall be No.4 unless otherwise shown. The use of fiber reinforced concrete in lieu of reinforcing steel is acceptable. Use fibers meeting the requirements of DMS 4550, "Fibers for Concrete," and dose fibers in accordance with Material Producers List (MPL) "Fibers for Class A and B Concrete Applications."
- Round exposed sharp edges with a rounding tool, to a minimum radius of 1/4 inch.
- All existing curbs and driveways to be removed shall be sawed or removed at existing joints.
- Where concrete curb is to be placed on existing concrete pavement, Bar B may be drilled and grouted in place, or may be inserted into fresh concrete.
- Expansion and contraction joints shall be constructed to match pavement joints in all curbs and curb and gutter adjacent to jointed concrete pavement. Where placement of curb or curb and gutter is not adjacent to concrete pavement, expansion joints shall be provided at structures, curb returns at streets, and at locations directed by The Engineer.
- Vertical and horizontal dowel bars and transverse reinforcing bars shall be placed at four feet C-C.
- Dimension 'T' shown is the thickness of concrete pavement. When curb is installed adjacent to flexible pavement dimension 'T' is 8" maximum.
- Usual profile grade line. Refer to typical sections and plan-profile sheets for exact locations.
- One-half inch expansion joint material shall be provided where curb or curb and gutter is adjacent to sidewalk or riprap.
- When horizontal permissible construction joints are used, the longitudinal pavement steel shall be placed in accordance with pavement details shown elsewhere in the plans. Reinforcing steel for curb section shall then conform to that required for concrete curb.
- Bar B placement as needed (typically at four ft. C-C) to support curb reinforcing steel during concrete placement.

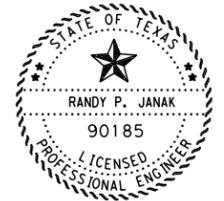


Texas Department of Transportation  
Design Division Standard

CONCRETE CURB AND GUTTER

CCCG-22

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| REVISIONS:       | DIST:      | COUNTY: | SHEET NO.: |         |



NAME: *Randy P. Janak* PE  
DATE: 2/24/2026



CivilCorp  
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4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
TEL: (361) 570-7500 TXSURV FIRM #100576-00 TXENG FIRM #10283

WESTERN HEIGHTS STREET IMPROVEMENT PROJECT

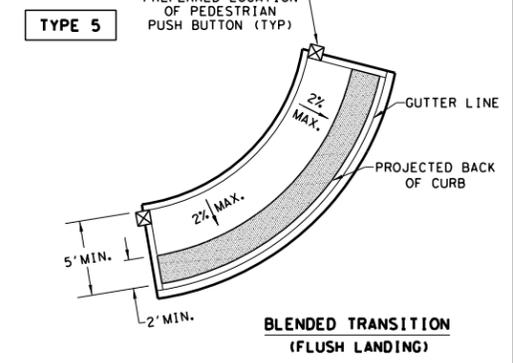
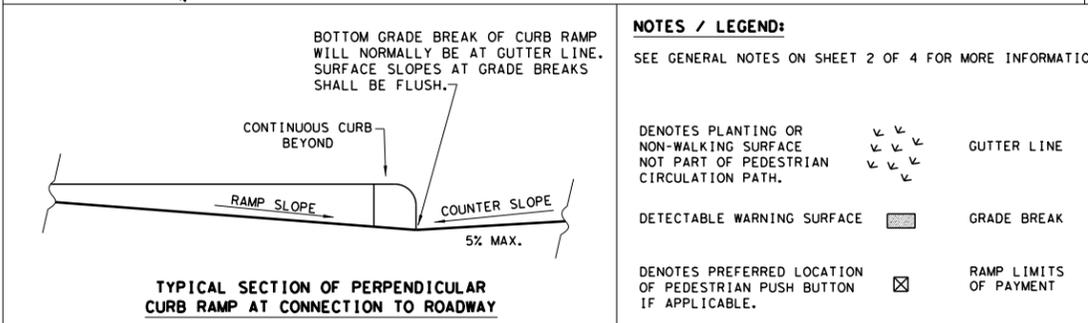
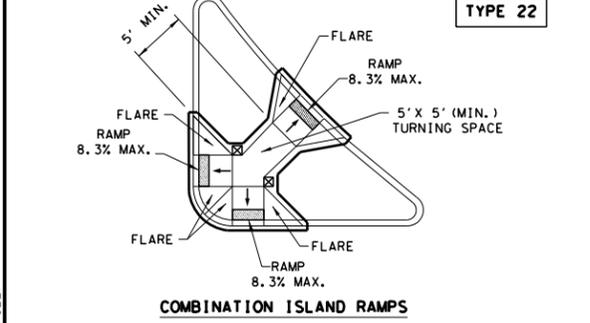
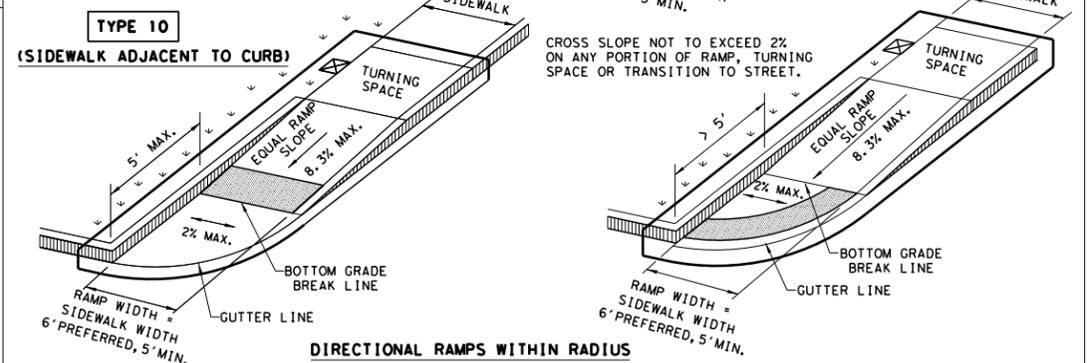
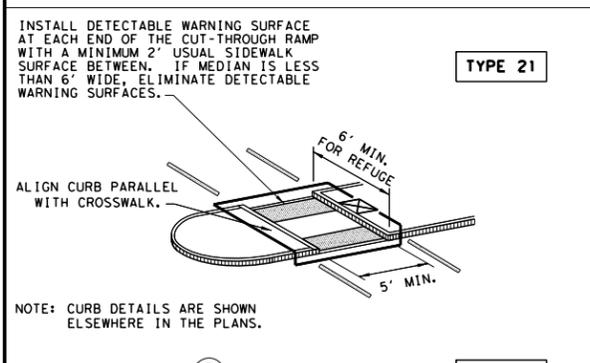
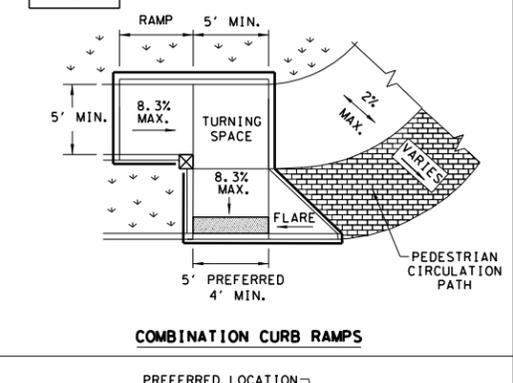
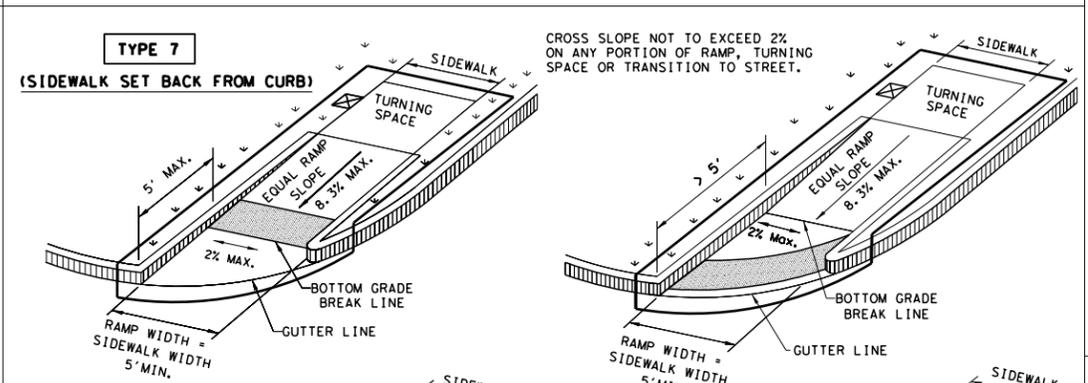
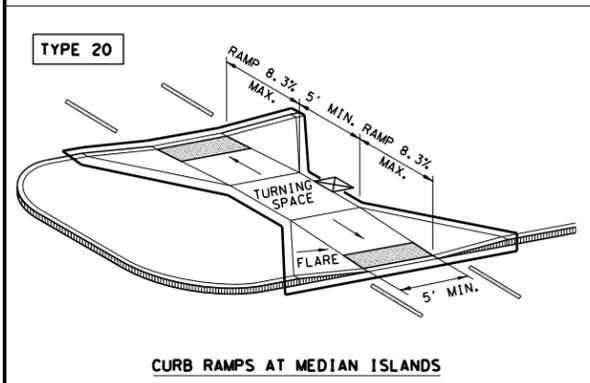
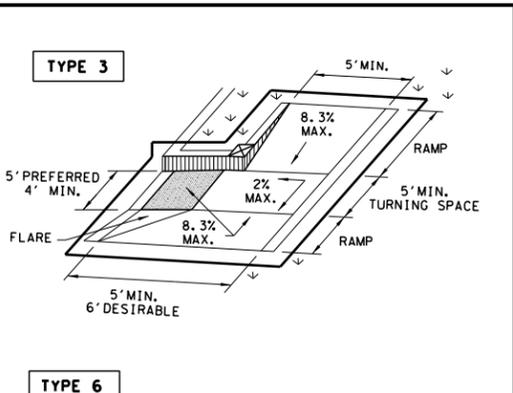
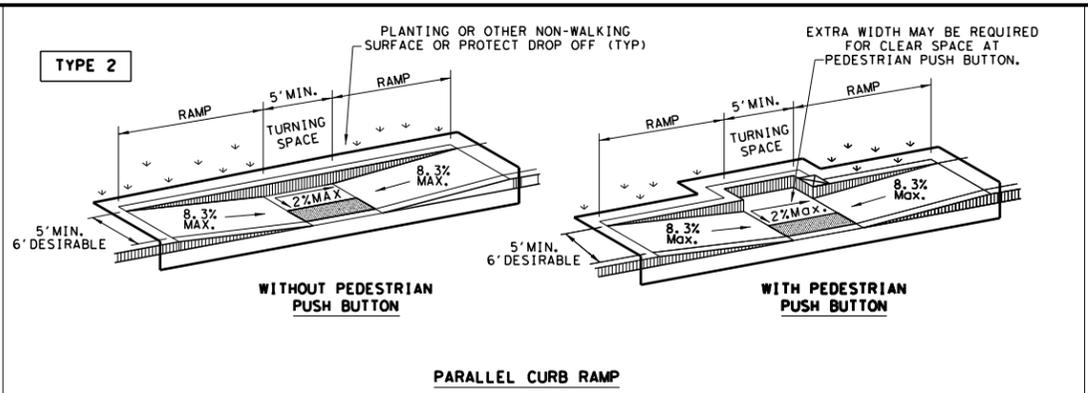
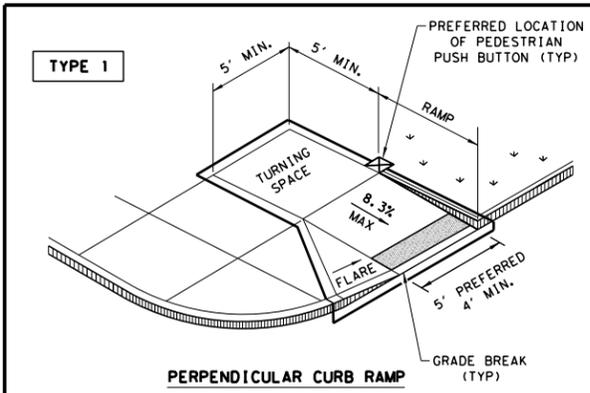
CCCG-22

SCALE: N. T. S.

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| PROJECT NO. | 25-015-03 | SHEET NO. | 40 |
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**NOTES / LEGEND:**  
SEE GENERAL NOTES ON SHEET 2 OF 4 FOR MORE INFORMATION.

DENOTES PLANTING OR NON-WALKING SURFACE NOT PART OF PEDESTRIAN CIRCULATION PATH.

DENOTES PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON IF APPLICABLE.

GUTTER LINE  
 GRADE BREAK  
 RAMP LIMITS OF PAYMENT

SHEET 1 OF 4

**PEDESTRIAN FACILITIES CURB RAMPS**

**PED-18**

|                       |           |        |        |             |
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| FILE: pd018           | DN: TxDOT | DN: VP | CK: KM | CK: PK & JG |
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| REVISED 04, 2012      |           |        |        |             |
| REVISED 01, 2018      |           |        |        |             |
|                       | DIST      | COUNTY |        | SHEET NO.   |

NAME: Randy P. Janak PE  
DATE: 2/24/2026

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**CITY OF PORT LAVACA**  
TEXAS

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**CivilCorp**  
an ESP COMPANY  
4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
TEL: (361) 570-7500 TXSURV FIRM #100576-00 TXENG FIRM #10283

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**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

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**PED-18**

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SCALE: N. T. S. SHEET 1 OF 4

|             |           |           |    |
|-------------|-----------|-----------|----|
| PROJECT NO. | 25-015-03 | SHEET NO. | 41 |
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DATE: FILE:

**GENERAL NOTES**

**CURB RAMP**

1. Install a curb ramp or blended transition at each pedestrian street crossing.
2. All slopes shown are maximum allowable. Cross slopes of 1.5% and lesser running should be used. Adjust curb ramp length or grade of approach sidewalks as directed.
3. Maximum allowable cross slope on sidewalk and curb ramp surfaces is 2%.
4. The minimum sidewalk width is 5'. Where the sidewalk is adjacent to the back of curb, a 6' sidewalk width is desirable. Where a 5' sidewalk cannot be provided due to site constraints, sidewalk width may be reduced to 4' for short distances. 5' x 5' passing areas at intervals not to exceed 200' are required.
5. Turning Spaces shall be 5' x 5' minimum. Cross slope shall be maximum 2%.
6. Clear space at the bottom of curb ramps shall be a minimum of 4' x 4' wholly contained within the crosswalk and wholly outside the parallel vehicular travel path.
7. Provide flared sides where the pedestrian circulation path crosses the curb ramp. Flared sides shall be sloped at 10% maximum, measured parallel to the curb. Returned curbs may be used only where pedestrians would not normally walk across the ramp, either because the adjacent surface is planted, substantially obstructed, or otherwise protected.
8. Additional information on curb ramp location, design, light reflective value and texture may be found in the latest draft of the Proposed Guidelines for Pedestrian Facilities in the Public Right of Way (PROWAG) as published by the U.S. Architectural and Transportation Barriers Compliance Board (Access Board).
9. To serve as a pedestrian refuge area, the median should be a minimum of 6' wide, measured from back of curbs. Medians should be designed to provide accessible passage over or through them.
10. Small channelization islands, which do not provide a minimum 5' x 5' landing at the top of curb ramps, shall be cut through level with the surface of the street.
11. Crosswalk dimensions, crosswalk markings and stop bar locations shall be as shown elsewhere in the plans. At intersections where crosswalk markings are not required, curb ramps shall align with theoretical crosswalks unless otherwise directed.
12. Provide curb ramps to connect the pedestrian access route at each pedestrian street crossing. Handrails are not required on curb ramps.
13. Curb ramps and landings shall be constructed and paid for in accordance with Item 531 "Sidewalks".
14. Place concrete at a minimum depth of 5" for ramps, flares and landings, unless otherwise directed.
15. Furnish and install No. 3 reinforcing steel bars at 18" o.c. both ways, unless otherwise directed.
16. Provide a smooth transition where the curb ramps connect to the street.
17. Curbs shown on sheet 1 within the limits of payment are considered part of the curb ramp for payment, whether it is concrete curb, gutter, or combined curb and gutter.
18. Existing features that comply with applicable standards may remain in place unless otherwise shown on the plans.

**DETECTABLE WARNING MATERIAL**

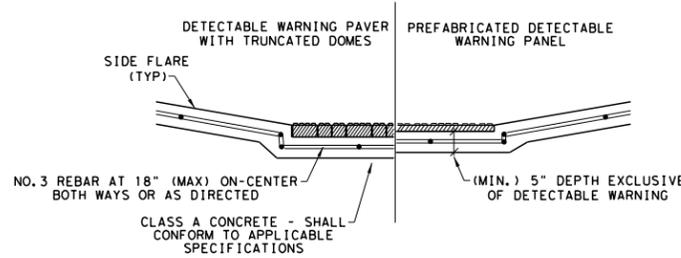
19. Curb ramps must contain a detectable warning surface that consists of raised truncated domes complying with PROWAG. The surface must contrast visually with adjoining surfaces, including side flares. Furnish and install an approved cast-in-place dark brown or dark red detectable warning surface material adjacent to uncolored concrete, unless specified elsewhere in the plans.
20. Detectable Warning Materials must meet TxDOT Departmental Materials Specification DMS 4350 and be listed on the Material Producer List. Install products in accordance with manufacturer's specifications.
21. Detectable warning surfaces must be firm, stable and slip resistant.
22. Detectable warning surfaces shall be a minimum of 24 inches in depth in the direction of pedestrian travel, and extend the full width of the curb ramp or landing where the pedestrian access route enters the street.
23. Detectable warning surfaces shall be located so that the edge nearest the curb line is at the back of curb and neither end of that edge is greater than 5 feet from the back of curb. Detectable warning surfaces may be curved along the corner radius.
24. Shaded areas on Sheet 1 of 4 indicate the approximate location for the detectable warning surface for each curb ramp type.

**DETECTABLE WARNING PAVERS (IF USED)**

25. Furnish detectable warning paver units meeting all requirements of ASTM C-936, C-33. Lay in a two by two unit basket weave pattern or as directed.
26. Lay full-size units first followed by closure units consisting of at least 25 percent (25%) of a full unit. Cut detectable warning paver units using a power saw.

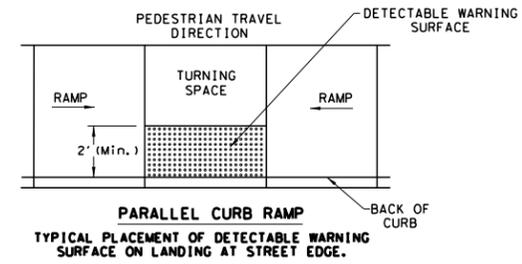
**SIDEWALKS**

27. Provide clear ground space at operable parts, including pedestrian push buttons. Operable parts shall be placed within unobstructed reach range specified in PROWAG section R406.
28. Place traffic signal or illumination poles, ground boxes, controller boxes, signs, drainage facilities and other items so as not to obstruct the pedestrian access route or clear ground space.
29. Street grades and cross slopes shall be as shown elsewhere in the plans.
30. Changes in level greater than 1/4 inch are not permitted.
31. The least possible grade should be used to maximize accessibility. The running slope of sidewalks and crosswalks within the public right of way may follow the grade of the parallel roadway. Where a continuous grade greater than five percent (5%) must be provided, handrails may be desirable to improve accessibility. Handrails may also be needed to protect pedestrians from potentially hazardous conditions. If provided, handrails shall comply with PROWAG R409.
32. Handrail extensions shall not protrude into the usable landing area or into intersecting pedestrian routes.
33. Driveways and turnouts shall be constructed and paid for in accordance with Item "Intersections, Driveways and Turnouts". Sidewalks shall be constructed and paid for in accordance with Item, "Sidewalks".
34. Sidewalk details are shown elsewhere in the plans.

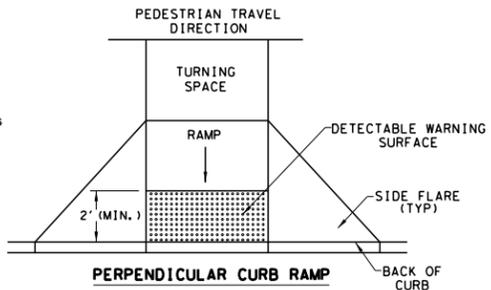


**SECTION VIEW DETAIL  
 CURB RAMP AT DETECTIBLE WARNINGS**

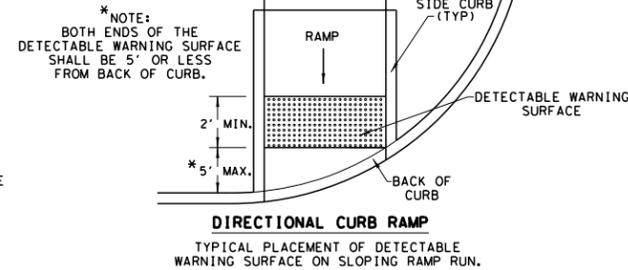
**DETECTABLE WARNING SURFACE DETAILS**



**PARALLEL CURB RAMP  
 TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON LANDING AT STREET EDGE.**



**PERPENDICULAR CURB RAMP  
 TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN.**



**DIRECTIONAL CURB RAMP  
 TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN.**

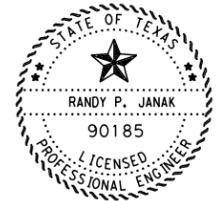
\*NOTE:  
 BOTH ENDS OF THE  
 DETECTABLE WARNING SURFACE  
 SHALL BE 5' OR LESS  
 FROM BACK OF CURB.

SHEET 2 OF 4

Texas Department of Transportation  
 Design Division Standard

**PEDESTRIAN FACILITIES  
 CURB RAMPS  
 PED-18**

|                      |           |        |           |             |
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| REVISED 08, 2009     | REVISIONS |        |           |             |
| REVISED 04, 2012     | DIST      | COUNTY | SHEET NO. |             |
| REVISED 01, 2018     |           |        |           |             |



NAME: *Randy P. Janak* PE  
 DATE: 2/24/2026



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 TEL: (361) 570-7500 TXSURV FIRM #100576-00 TXENG FIRM #10283

**WESTERN HEIGHTS STREET  
 IMPROVEMENT PROJECT**

PED-18

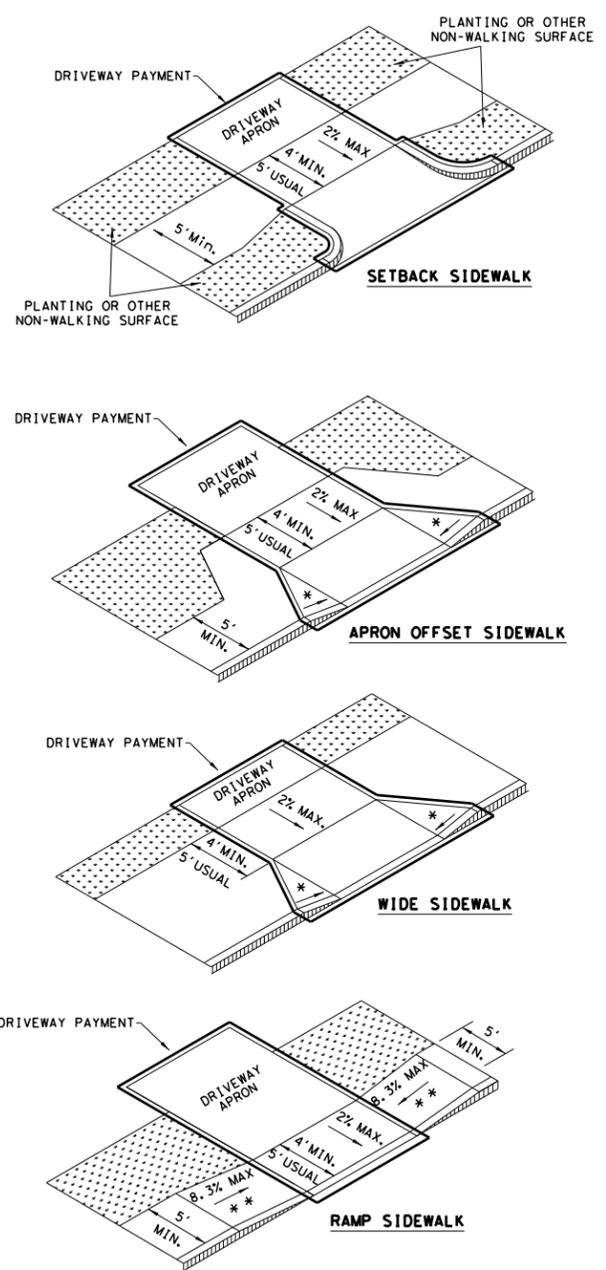
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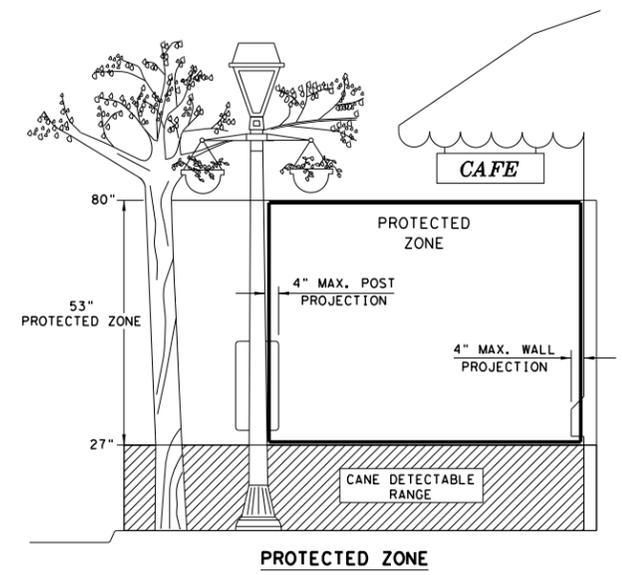
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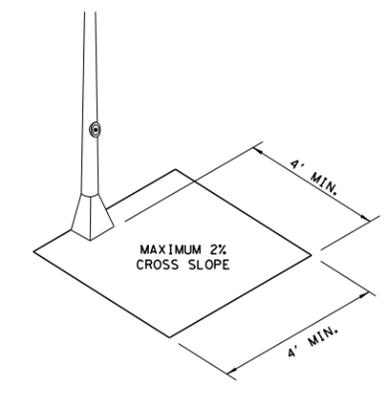
**SIDEWALK TREATMENT AT DRIVEWAYS**



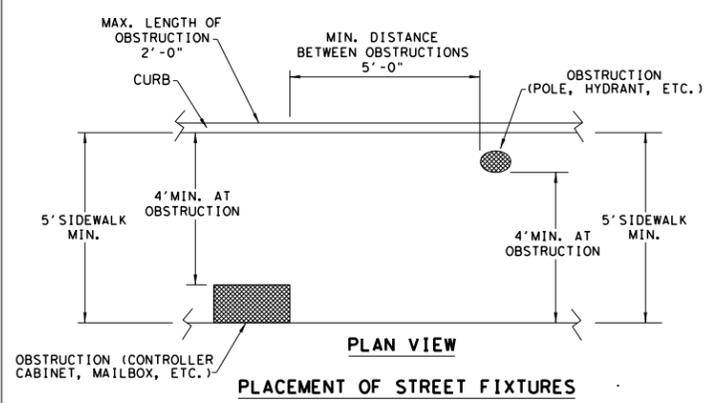
NOTES:  
 \* WHERE DRIVEWAYS CROSS THE PEDESTRIAN ROUTE, SIDES SHALL BE FLARED AT 10% MAX SLOPE.  
 \* \* IF CURB HEIGHT IS GREATER THAN 6 INCHES, USE GRADE LESS THAN OR EQUAL TO 5%. HANDRAIL AND DETECTABLE WARNING ARE NOT REQUIRED.



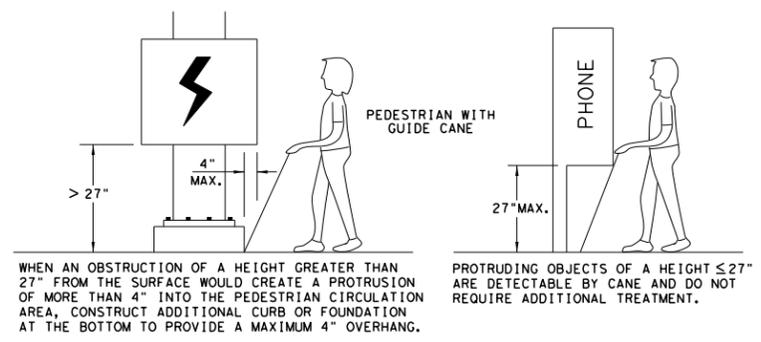
NOTE: IN PEDESTRIAN CIRCULATION AREA, MAXIMUM 4" PROJECTION FOR POST OR WALL MOUNTED OBJECTS BETWEEN 27" AND 80" ABOVE THE SURFACE.



**CLEAR SPACE ADJACENT TO PEDESTRIAN PUSH BUTTON**



NOTE: ITEMS NOT INTENDED FOR PUBLIC USE. MINIMUM 4' X 4' CLEAR GROUND SPACE REQUIRED AT PUBLIC USE FIXTURES.



**DETECTION BARRIER FOR VERTICAL CLEARANCE < 80"**

SHEET 3 OF 4

**PEDESTRIAN FACILITIES  
CURB RAMPS  
PED-18**

|                      |           |        |           |             |
|----------------------|-----------|--------|-----------|-------------|
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| REVISED 08, 2009     | REVISIONS |        |           |             |
| REVISED 04, 2012     | DIST      | COUNTY | SHEET NO. |             |
| REVISED 01, 2018     |           |        |           |             |

NAME: *Randy P. Janak* PE  
 DATE: 2/24/2026

**CITY OF PORT LAVACA**  
TEXAS

**CivilCorp**  
an ESP COMPANY  
4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
TEL: (361) 570-7500 TXSURV FIRM #100576-00 TXENG FIRM #10283

**WESTERN HEIGHTS STREET  
IMPROVEMENT PROJECT**

**PED-18**

SCALE: N. T. S. SHEET 3 OF 4

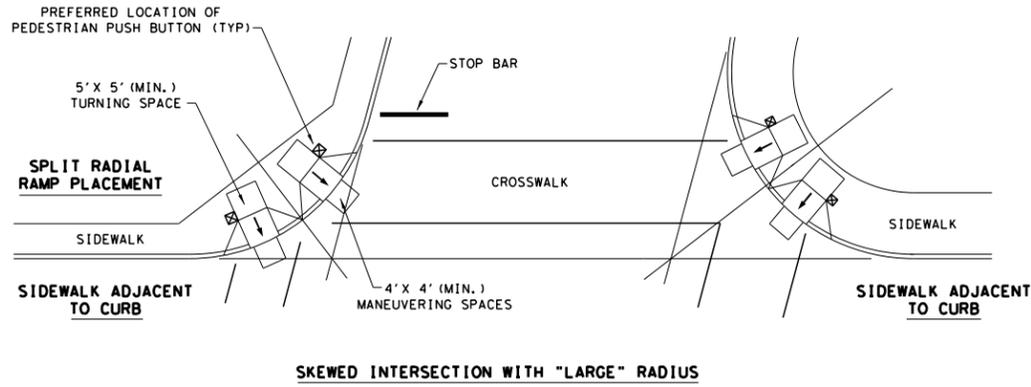
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| PROJECT NO. | 25-015-03 | SHEET NO. | 43 |
| REVISIONS   |           |           |    |
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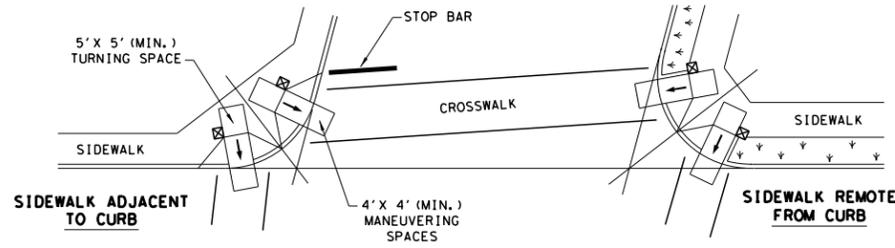
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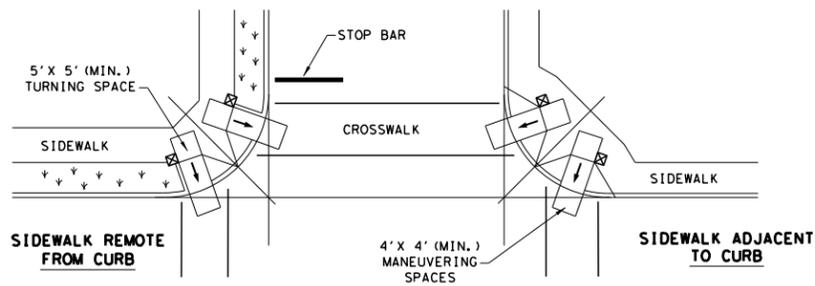
TYPICAL CROSSING LAYOUTS  
 SEE SHEET 1 OF 4 FOR DETAILS AND DIMENSIONS



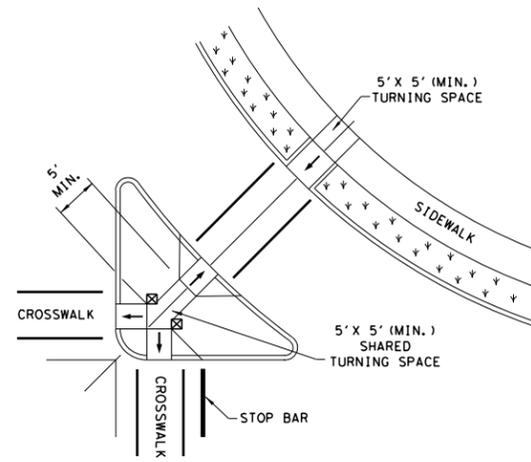
SKewed INTERSECTION WITH "LARGE" RADIUS



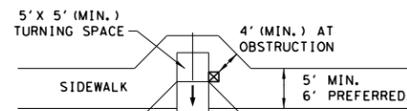
SKewed INTERSECTION WITH "SMALL" RADIUS



NORMAL INTERSECTION WITH "SMALL" RADIUS

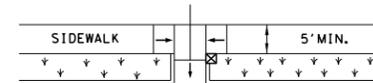


AT INTERSECTION  
 W/FREE RIGHT TURN & ISLAND



SIDEWALK ADJACENT TO CURB

MID-BLOCK PLACEMENT PERPENDICULAR RAMPS



SIDEWALK REMOTE FROM CURB

LEGEND:

- SHOWS DOWNWARD SLOPE. →
- DENOTES PREFERRED LOCATION OF PEDESTRIAN PUSH BUTTON (IF APPLICABLE). ☒
- DENOTES PLANTING OR NON-WALKING SURFACE NOT PART OF PEDESTRIAN CIRCULATION PATH. {X's}

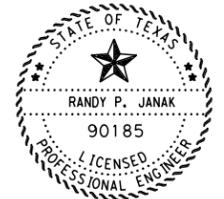
SHEET 4 OF 4

Texas Department of Transportation  
 Design Division Standard

**PEDESTRIAN FACILITIES CURB RAMPS**

**PED-18**

|                      |           |        |           |             |
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| FILE: db018          | DN: TxDOT | DN: VP | CK: KM    | CK: PK & JG |
| © TxDOT: MARCH, 2002 | CONT      | SECT   | JOB       | HIGHWAY     |
| REVISED 08, 2009     | REVISIONS |        |           |             |
| REVISED 04, 2012     |           |        |           |             |
| REVISED 01, 2018     |           |        |           |             |
|                      | DIST      | COUNTY | SHEET NO. |             |



NAME: *Randy P. Janak* PE  
 DATE: 2/24/2026



**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

PED-18

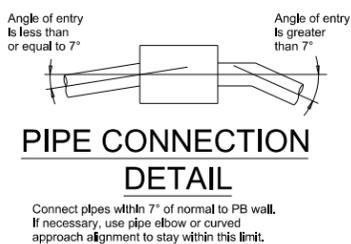
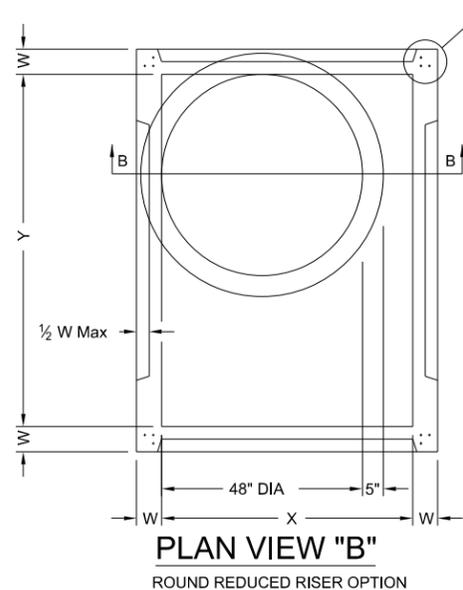
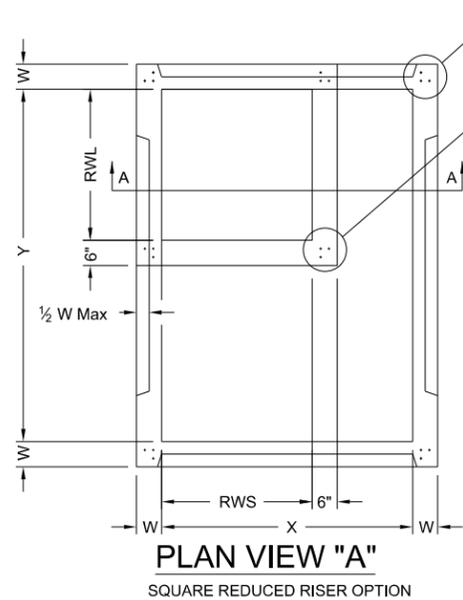
SCALE: N. T. S. SHEET 4 OF 4

|             |           |           |    |
|-------------|-----------|-----------|----|
| PROJECT NO. | 25-015-03 | SHEET NO. | 44 |
| REVISIONS   |           |           |    |
| NO.         |           |           |    |
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**FABRICATION NOTES:**

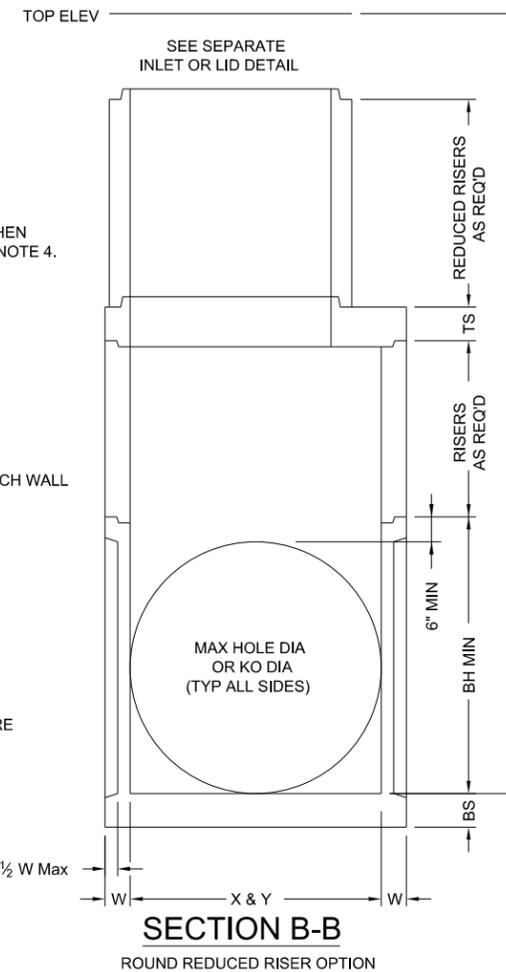
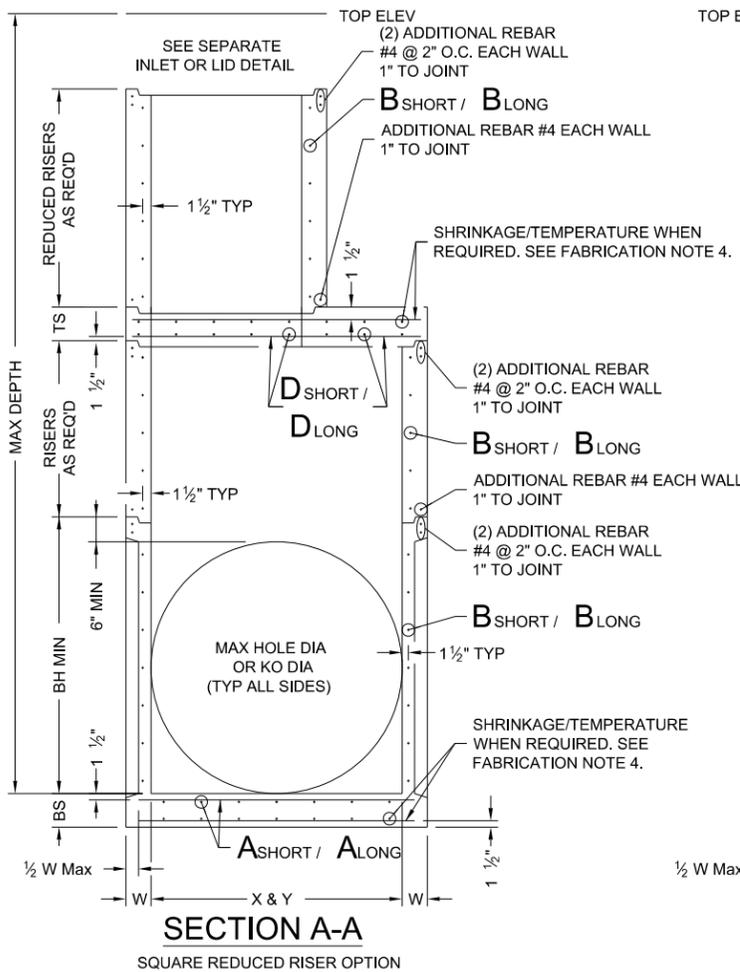
1. Provide Class "H" concrete in accordance with Item 421 and having a minimum compressive strength of 5,000 psi.
2. Provide Grade 60 reinforcing steel or equivalent area of WWR.
3. Provide typical clear cover of 1 1/2" to reinforcing steel at interior or exterior walls.
4. Walls or slabs with a thickness of 8" or greater require shrinkage and temperature reinforcing steel. Provide steel area = 0.11 in<sup>2</sup>/ft each way.
5. No substitution is allowed for vertical and horizontal #4 bars in corners.
6. Manufacture base and risers to nearest 3" increment.
7. Design tongue and groove joints for full closure on both shoulders. Minimum spigot depth is 3/4".
8. Provide lifting devices in conformance with Manufacturer's recommendations.
9. See sheet PDD for sizes, dimensions, and reinforcing steel not shown.

**INSTALLATION NOTES:**

1. If required elsewhere, Inverts (benching) to be provided by Contractor. Concrete or mortar used for invert is subsidiary to specified inlet or manhole.
2. Seal tongue and groove joints with preformed or bulk mastic in conformance with Manufacturer's recommendations. Tongue and groove joints may be grouted no more than 1" between each section, or 1/2 the joint depth, whichever is greater.
3. Do not grout rubber gasket joints without Manufacturer's recommendation.
4. For rigid pipe, cut hole in thin wall panel (KO) 4" Max, 2" Min larger than pipe OD.
5. For flexible pipe, consult boot/seal Manufacturer's specification for placement tolerance and hole size. Center pipe in hole and install boot/seal per Manufacturer's specification.

**GENERAL NOTES:**

1. Precast Base consists of base slab, base unit, risers (as required), reducing slab (as required), and reduced risers (as required). See sheet PDD for sizes.
2. Designed according to ASTM C913.
3. Payment for precast base is subsidiary to the specified inlet, per Item 465, "Junction Boxes, Manholes, and Inlets."



Cover dimensions are clear dimensions, unless noted otherwise.

|                                    |           |                          |           |
|------------------------------------|-----------|--------------------------|-----------|
| Texas Department of Transportation |           | Bridge Division Standard |           |
| PRECAST BASE                       |           |                          |           |
| PB                                 |           |                          |           |
| FILE:                              | DN: TXDOT | CR: TXDOT                | DR: TXDOT |
| ©TXDOT February 2020               | CONT      | SECT                     | JOB       |
| REVISIONS                          | DIST      | COUNTY                   | SHEET NO. |



NAME: *Randy P. Janak* PE  
 DATE: 2/24/2026



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 4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
 TEL: (361) 570-7500 TXSURV FIRM #100576-00 TXENG FIRM #10283

**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

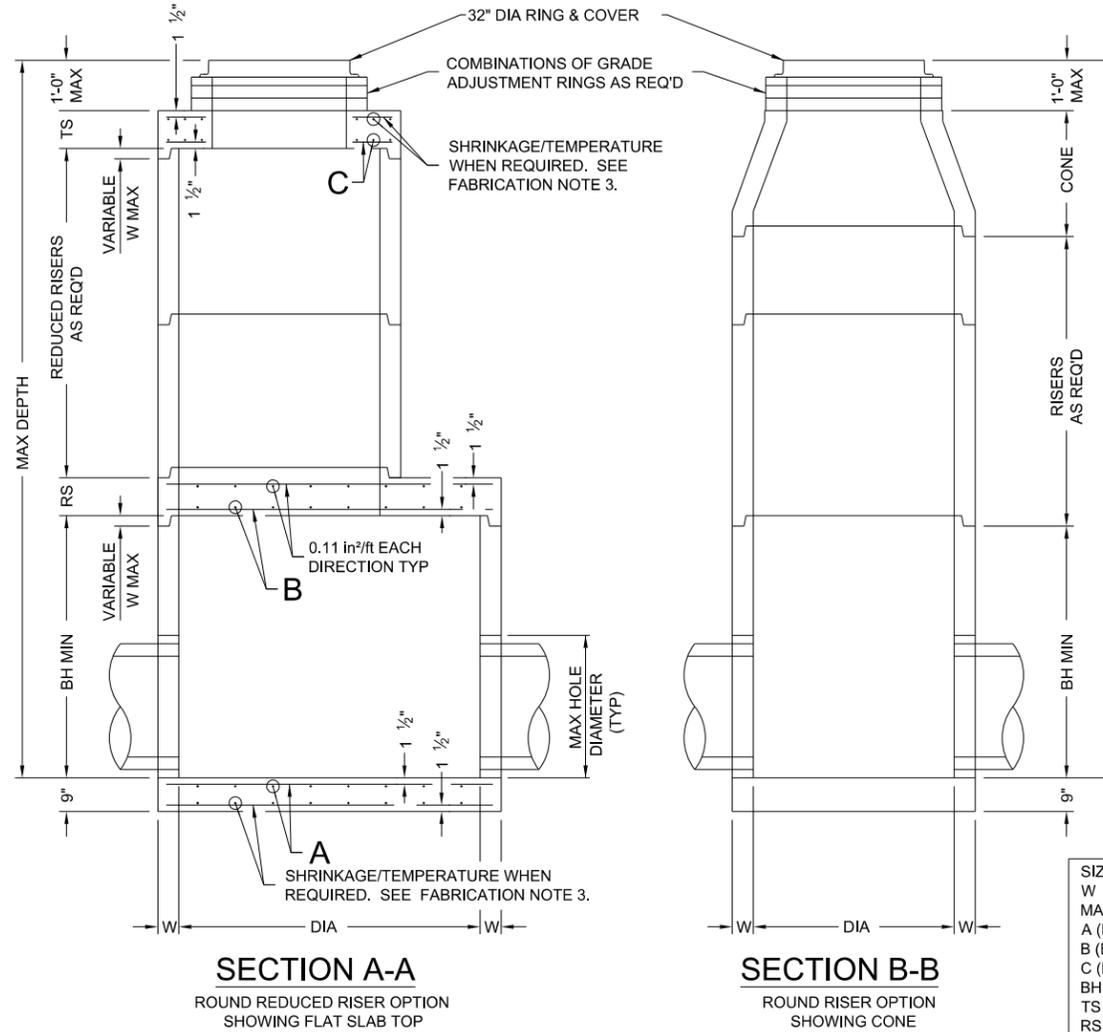
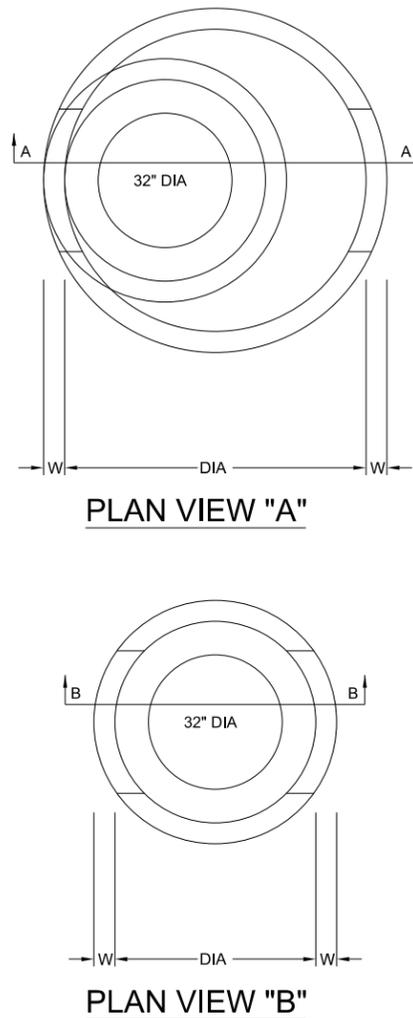
**PRECAST BASE**

SCALE: N. T. S. SHEET 1 OF 1

|             |           |           |    |
|-------------|-----------|-----------|----|
| PROJECT NO. | 25-015-03 | SHEET NO. | 45 |
| REVISIONS   |           |           |    |
| NO.         |           |           |    |
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- FABRICATION NOTES:**
1. Provide Class "H" concrete in accordance with Item 421 and having a minimum compressive strength of 5,000 psi.
  2. Provide Grade 60 reinforcing steel or equivalent area of WWR. Provide circumferential reinforcing steel in vertical walls of base, riser and cone in accordance with ASTM C478.
  3. Slabs with a thickness of 8" or greater require shrinkage and temperature reinforcing steel. Provide steel area = 0.11 in<sup>2</sup>/ft each way.
  4. Manufacture base and risers to nearest 3" increment.
  5. Design tongue and groove joints for full closure on both shoulders. Minimum splot depth is 3/4".
  6. Provide lifting devices in conformance with Manufacturer's recommendations.
  7. Provide cast iron solid cover, unless noted otherwise elsewhere in the plans.

- INSTALLATION NOTES:**
1. Cones may be concentric or eccentric. Reduction cones are acceptable. See Manufacturer for cone dimensions.
  2. Inverts (benching) to be provided by Contractor. Concrete or mortar used for invert is subsidiary to this item.
  3. Seal tongue and groove joints with preformed or bulk mastic in conformance with Manufacturer's recommendations. Tongue and groove joints may be grouted no more than 1" between each section, or 1/2 the joint depth, whichever is greater.
  4. Do not grout rubber gasket joints without Manufacturer's recommendation.
  5. Initial installation of grade adjustment rings is limited to 1'-0" Max as shown.
  6. Grade adjustment rings may be increased to 2'-0" Max when future construction affects final grade of structure. Make adjustments greater than 2'-0" with additional risers. Adjustments may be made up to the Max depth shown. Structure must be evaluated if Max depth will be exceeded.

- GENERAL NOTES:**
1. Designed according to ASTM C478.
  2. Payment for manhole is per Item 465, "Junction Boxes, Manholes, and Inlets" by type and size.
  3. Pipe OD + placement tolerance must be equal or less than Max hole diameter. For rigid pipe, placement tolerance is 4" Max, 2" Min. For flexible pipe, consult boot/seal manufacturer's specification for placement tolerance.

Cover dimensions are clear dimensions, unless noted otherwise.

|                   |                          |                          |                          |
|-------------------|--------------------------|--------------------------|--------------------------|
| SIZE (DIA)        | 48 in                    | 60 in                    | 72 in                    |
| W                 | 5 in                     | 6 in                     | 7 in                     |
| MAX DEPTH         | 25 ft                    | 25 ft                    | 25 ft                    |
| A (EACH WAY)      | 0.22 in <sup>2</sup> /ft | 0.30 in <sup>2</sup> /ft | 0.45 in <sup>2</sup> /ft |
| B (EACH WAY)      | N/A                      | 0.37 in <sup>2</sup> /ft | 0.62 in <sup>2</sup> /ft |
| C (EACH WAY)      | 0.24 in <sup>2</sup> /ft | 0.46 in <sup>2</sup> /ft | 0.46 in <sup>2</sup> /ft |
| BH MIN            | 12 in                    | 36 in                    | 36 in                    |
| TS                | 9 in                     | 9 in                     | 9 in                     |
| RS                | N/A                      | 9 in                     | 12 in                    |
| REDUCED RISER DIA | N/A                      | 48 in                    | 48/60 in                 |
| MAX HOLE DIA      | 32 in                    | 40 in                    | 54 in                    |

HL93 LOADING

Texas Department of Transportation

Bridge Division Standard

**PRECAST ROUND MANHOLE**

PRM

|                                      |           |           |           |           |
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| ©TXDOT February 2020                 | CONT      | SECT      | JOB       | HIGHWAY   |
| REVISIONS                            |           |           |           |           |
| 3/2023 - Corrected TS and RS callout | DIST      | COUNTY    | SHEET NO. |           |

NAME: *Randy P. Janak* PE  
 DATE: 2/24/2026

CITY OF PORT LAVACA  
 TEXAS

**CivilCorp**  
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 4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
 TEL: (361) 570-7500 TXSURV FIRM #100576-00 TXENG FIRM #10283

**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

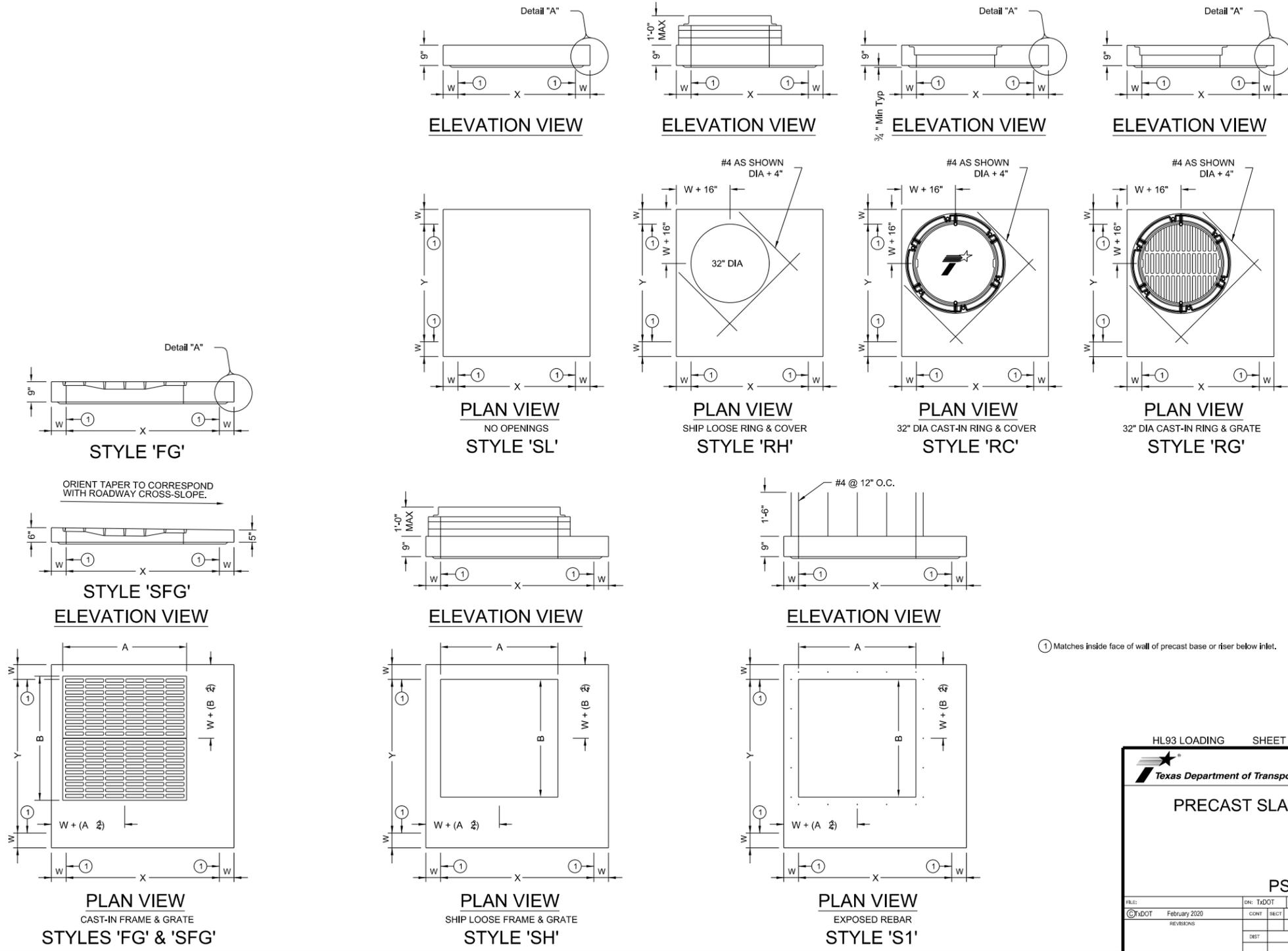
**PRECAST ROUND MANHOLE**

SCALE: N. T. S. SHEET 1 OF 1

|             |           |           |    |
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| PROJECT NO. | 25-015-03 | SHEET NO. | 46 |
| REVISIONS   |           |           |    |
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① Matches inside face of wall of precast base or riser below inlet.

HL93 LOADING SHEET 1 OF 2

**Texas Department of Transportation**  
 Bridge Division Standard

**PRECAST SLAB LID**

PSL

|                      |           |           |           |           |
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| FILE:                | DN: TXDOT | CR: TXDOT | DR: TXDOT | CR: TXDOT |
| ©TXDOT February 2020 | CONT      | SECT      | JOB       | HIGHWAY   |
| REVISIONS            | DIST      | COUNTY    | SHEET NO. |           |

NAME: *Randy P. Janak* PE  
 DATE: 2/24/2026

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**CITY OF PORT LAVACA**  
 TEXAS

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**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

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**PRECAST SLAB LID**

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SCALE: N. T. S. SHEET 1 OF 2

|             |           |           |    |
|-------------|-----------|-----------|----|
| PROJECT NO. | 25-015-03 | SHEET NO. | 47 |
| REVISIONS   |           |           |    |
| NO.         |           |           |    |
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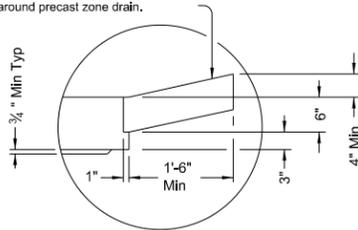
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| Style             | Size (X x Y) | W <sup>(2)</sup> | A x B (nominal)  | Short Span Reinf Steel Area | Long Span Reinf Steel Area |
|-------------------|--------------|------------------|------------------|-----------------------------|----------------------------|
| SL                | 3'x3'        | 6"               | n/a              | 0.37 in <sup>2</sup> /ft    | 0.37 in <sup>2</sup> /ft   |
| RH,RC,RG,SH,S1,FG | 3'x3'        | 6"               | 3'x3' or 32" Dia | 0.37 in <sup>2</sup> /ft    | 0.37 in <sup>2</sup> /ft   |
| SFG               | 3'x3'        | 6"               | 3'x3'            | 0.32 in <sup>2</sup> /ft    | 0.32 in <sup>2</sup> /ft   |
| SL                | 4'x4'        | 6"               | n/a              | 0.34 in <sup>2</sup> /ft    | 0.34 in <sup>2</sup> /ft   |
| RH,RC,RG,SH,S1,FG | 4'x4'        | 6"               | 3'x3' or 32" Dia | 0.41 in <sup>2</sup> /ft    | 0.41 in <sup>2</sup> /ft   |
| SH,S1,FG          | 4'x4'        | 6"               | 4'x4'            | 0.41 in <sup>2</sup> /ft    | 0.41 in <sup>2</sup> /ft   |
| SFG               | 4'x4'        | 6"               | 4'x4'            | 0.32 in <sup>2</sup> /ft    | 0.32 in <sup>2</sup> /ft   |
| SL                | 3'x5'        | 6"               | n/a              | 0.39 in <sup>2</sup> /ft    | 0.39 in <sup>2</sup> /ft   |
| RH,RC,RG,SH,S1,FG | 3'x5'        | 6"               | 3'x3' or 32" Dia | 0.48 in <sup>2</sup> /ft    | 0.48 in <sup>2</sup> /ft   |
| SH,S1,FG          | 3'x5'        | 6"               | 3'x5'            | 0.48 in <sup>2</sup> /ft    | 0.48 in <sup>2</sup> /ft   |
| SFG               | 3'x5'        | 6"               | 3'x5'            | 0.32 in <sup>2</sup> /ft    | 0.32 in <sup>2</sup> /ft   |
| SL                | 4'x5'        | 6"               | n/a              | 0.42 in <sup>2</sup> /ft    | 0.42 in <sup>2</sup> /ft   |
| RH,RC,RG,SH,S1,FG | 4'x5'        | 6"               | 3'x3' or 32" Dia | 0.42 in <sup>2</sup> /ft    | 0.42 in <sup>2</sup> /ft   |
| SH,S1,FG          | 4'x5'        | 6"               | 4'x4'            | 0.63 in <sup>2</sup> /ft    | 0.63 in <sup>2</sup> /ft   |
| SH,S1,FG          | 4'x5'        | 6"               | 3'x5'            | 0.66 in <sup>2</sup> /ft    | 0.66 in <sup>2</sup> /ft   |
| SL                | 5'x5'        | 6"               | n/a              | 0.36 in <sup>2</sup> /ft    | 0.36 in <sup>2</sup> /ft   |
| RH,RC,RG,SH,S1,FG | 5'x5'        | 6"               | 3'x3' or 32" Dia | 0.43 in <sup>2</sup> /ft    | 0.43 in <sup>2</sup> /ft   |
| SH,S1,FG          | 5'x5'        | 6"               | 4'x4'            | 0.63 in <sup>2</sup> /ft    | 0.63 in <sup>2</sup> /ft   |
| SH,S1,FG          | 5'x5'        | 6"               | 3'x5'            | 0.63 in <sup>2</sup> /ft    | 0.63 in <sup>2</sup> /ft   |
| SL                | 5'x6'        | 6"               | n/a              | 0.48 in <sup>2</sup> /ft    | 0.48 in <sup>2</sup> /ft   |
| RH,RC,RG,SH,S1,FG | 5'x6'        | 6"               | 3'x3' or 32" Dia | 0.48 in <sup>2</sup> /ft    | 0.48 in <sup>2</sup> /ft   |
| SH,S1,FG          | 5'x6'        | 6"               | 4'x4'            | 0.60 in <sup>2</sup> /ft    | 0.60 in <sup>2</sup> /ft   |
| SH,S1,FG          | 5'x6'        | 6"               | 3'x5'            | 0.60 in <sup>2</sup> /ft    | 0.60 in <sup>2</sup> /ft   |
| SL                | 6'x6'        | 6"               | n/a              | 0.43 in <sup>2</sup> /ft    | 0.43 in <sup>2</sup> /ft   |
| RH,RC,RG,SH,S1,FG | 6'x6'        | 6"               | 3'x3' or 32" Dia | 0.56 in <sup>2</sup> /ft    | 0.56 in <sup>2</sup> /ft   |
| SH,S1,FG          | 6'x6'        | 6"               | 4'x4'            | 0.56 in <sup>2</sup> /ft    | 0.56 in <sup>2</sup> /ft   |
| SH,S1,FG          | 6'x6'        | 6"               | 3'x5'            | 0.59 in <sup>2</sup> /ft    | 0.59 in <sup>2</sup> /ft   |
| SL                | 8'x8'        | 8"10"            | n/a              | 0.45 in <sup>2</sup> /ft    | 0.45 in <sup>2</sup> /ft   |
| RH,RC,RG,SH,S1,FG | 8'x8'        | 8"10"            | 3'x3' or 32" Dia | 0.45 in <sup>2</sup> /ft    | 0.45 in <sup>2</sup> /ft   |
| SH,S1,FG          | 8'x8'        | 8"10"            | 4'x4'            | 0.45 in <sup>2</sup> /ft    | 0.45 in <sup>2</sup> /ft   |
| SH,S1,FG          | 8'x8'        | 8"10"            | 3'x5'            | 0.45 in <sup>2</sup> /ft    | 0.45 in <sup>2</sup> /ft   |

<sup>(2)</sup> See sheet PDD for corresponding wall thickness (W) of base unit or riser.

Construct cast-in-place reinforced concrete apron, when shown elsewhere in plans. Use Class "A" concrete. Apron is subsidiary to PSL. Apron is 1'-6" Min width around precast zone drain.



**DETAIL "A"**

(Reinforcing not shown for clarity)  
 When an apron is to be cast around PSL, use detail above to create an apron ledge on all 4 sides.

**FABRICATION NOTES:**

1. Locate penetration (Style "RH"), ring and cover (Style "RC"), ring and grate (Style "RG"), and frame and grate (Style "FG") in a corner. Only one penetration is allowed per slab lid.
2. Provide Class "H" concrete in accordance with Item 421 and having a minimum compressive strength of 5,000 psi.
3. Provide Grade 60 reinforcing steel or equivalent area of WWR.
4. Provide clear cover of 3/4" to reinforcing from lower outside shoulder of slab for structural reinforcement, and 2" from top of slab for shrinkage and temperature reinforcement. Place short span reinforcing closest to surface.
5. Slabs with a thickness of 8" or greater require shrinkage and temperature reinforcing. Provide steel area = 0.11 in<sup>2</sup>/ft each way.
6. No substitution is allowed for diagonal #4 bars around openings.
7. Design tongue and groove joints for full closure on both shoulders. Minimum spigot depth is 3/4".
8. Provide lifting devices in conformance with Manufacturer's recommendations.

**INSTALLATION NOTES:**

1. Precast slab lids are intended for direct traffic and may be placed in roadway.
2. Seal tongue and groove joints with preformed or bulk mastic in conformance with Manufacturer's recommendations. Tongue and groove joints may be grouted no more than 1" between each section, or 1/2 the joint depth, whichever is greater.
3. Do not grout rubber gasket joints without Manufacturer's recommendation.
4. Initial installation of grade adjustment rings for Styles "RH" and "SH" is limited to 1'-0" Max as shown.
5. Grade adjustment rings for Styles "RH" and "SH" may be increased to 2'-0" Max when future construction affects final grade of structure. Make adjustments greater than 2'-0" with additional risers. Adjustments can be made up to Max depth shown on sheet PDD. Structure must be evaluated if Max depth will be exceeded.
6. Orient long dimension of grate slots perpendicular to traffic, unless noted otherwise on plans.

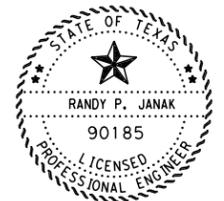
**GENERAL NOTES:**

1. Designed according to ASTM C913.
2. Payment for lid is per Item 465, "Junction Boxes, Manholes, and Inlets" by type, style, size, and opening size (when applicable).

Cover dimensions are clear dimensions, unless noted otherwise.

HL93 LOADING SHEET 2 OF 2

|                                |           |           |           |
|--------------------------------|-----------|-----------|-----------|
|                                |           |           |           |
| <p><b>PRECAST SLAB LID</b></p> |           |           |           |
| <p><b>PSL</b></p>              |           |           |           |
| FILE:                          | DN: TXDOT | CR: TXDOT | DR: TXDOT |
| ©TXDOT February 2020           | CONT      | SECT      | JOB       |
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NAME: *Randy P. Janak* PE  
 DATE: 2/24/2026



**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

**PRECAST SLAB LID**

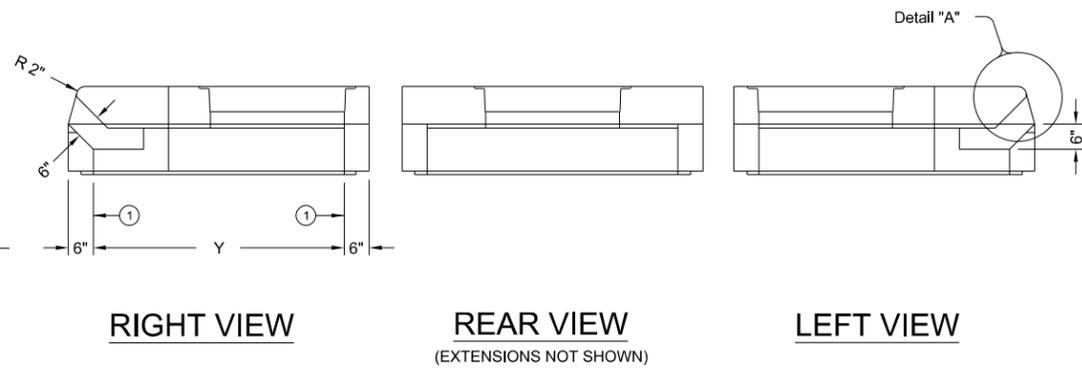
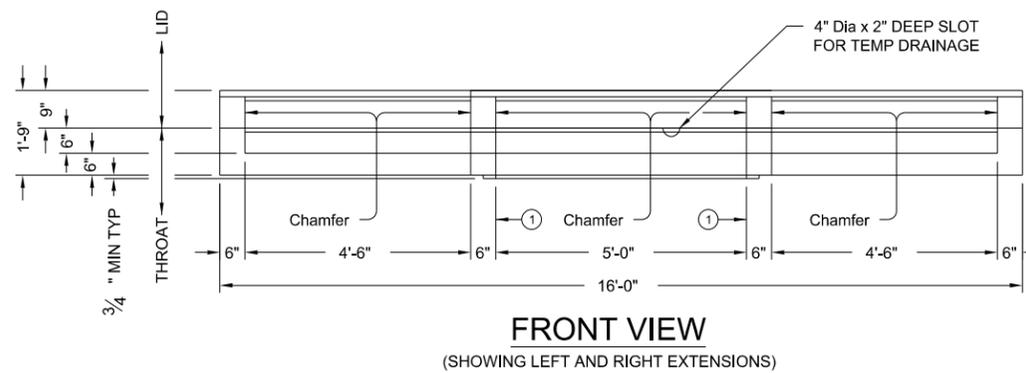
SCALE: N. T. S. SHEET 2 OF 2

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| PROJECT NO. | 25-015-03 | SHEET NO. | 48 |
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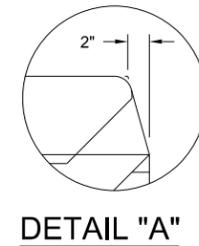
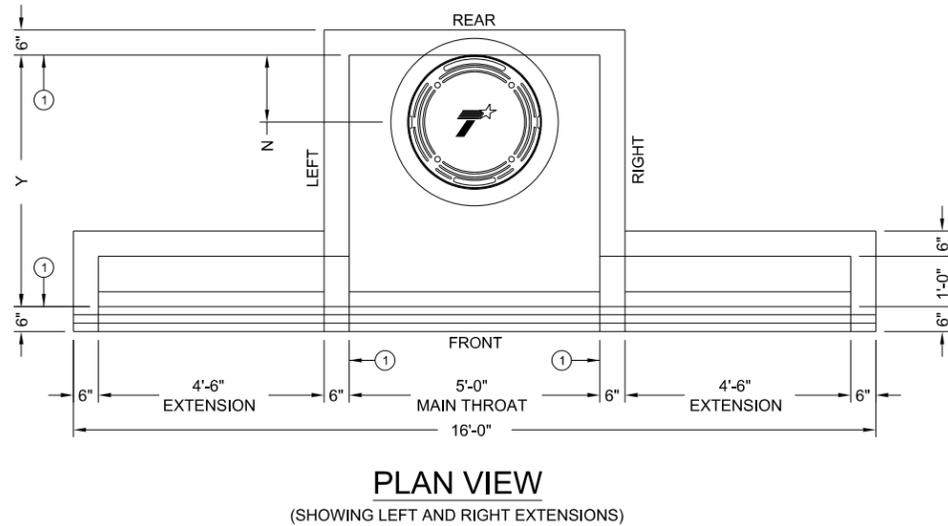
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① Matches inside face of wall of precast base or riser below Inlet.



HS20 LOADING SHEET 1 OF 2

Texas Department of Transportation  
 Bridge Division Standard

**PRECAST CURB INLET  
 OUTSIDE ROADWAY**

PCO

|                    |           |           |           |           |
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| TXDOT January 2015 | CONT      | SECT      | JOB       | HIGHWAY   |
| REVISIONS          | DEBT      | COUNTY    | SHEET NO. |           |



NAME: *Randy P. Janak* PE  
 DATE: 2/24/2026



**CivilCorp**  
 an ESP COMPANY  
 4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
 TEL: (361) 570-7500 TXSURV FIRM #100576-00 TXENG FIRM #10283

**WESTERN HEIGHTS STREET  
 IMPROVEMENT PROJECT**

**PRECAST CURB INLET  
 OUTSIDE ROADWAY**

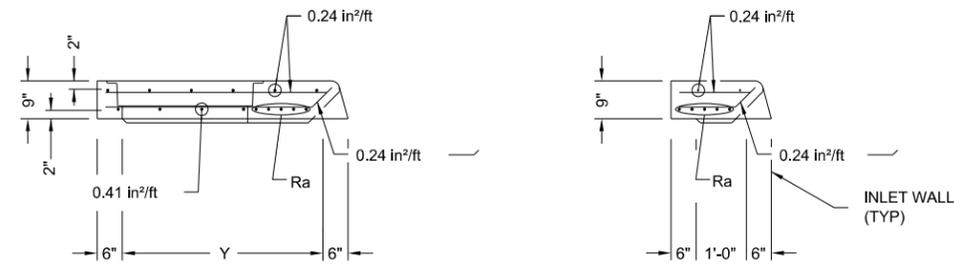
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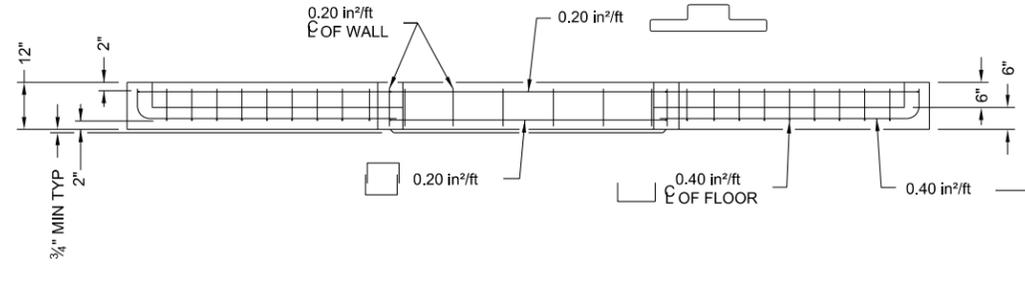
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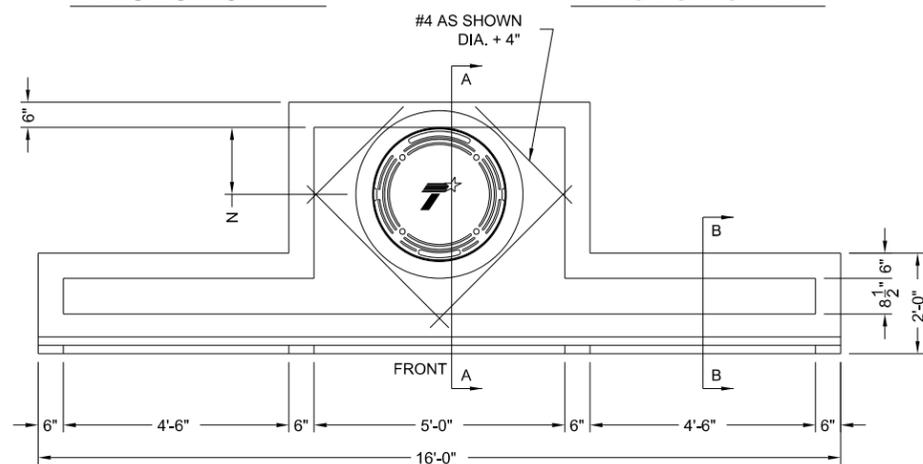


LID SECTION A-A

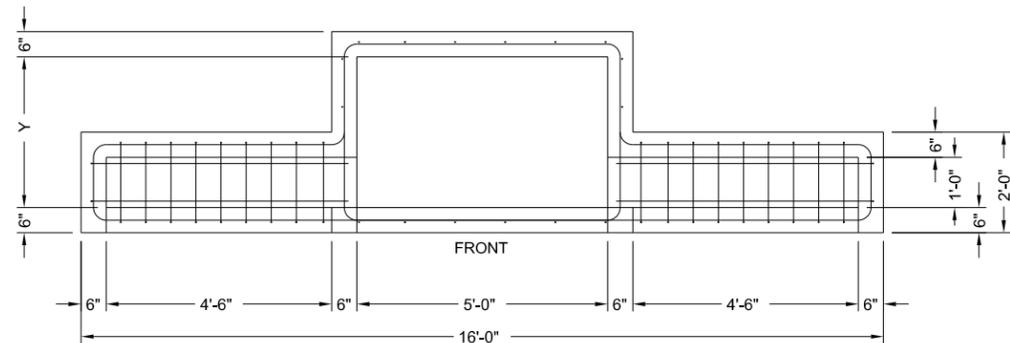
LID SECTION B-B



THROAT ELEVATION VIEW  
 (SHOWING LEFT AND RIGHT EXTENSIONS)



LID PLAN VIEW  
 (SHOWING LEFT AND RIGHT EXTENSIONS)



THROAT PLAN VIEW  
 (SHOWING LEFT AND RIGHT EXTENSIONS)

| SIZE (Y) | N   | MH DIA * | Ra                |
|----------|-----|----------|-------------------|
| 3'       | 9"  | 18"      | (4) #5 Additional |
| 4'       | 16" | 32"      | (4) #5 Additional |
| 5'       | 16" | 32"      | (4) #5 Additional |
| 6'       | 16" | 32"      | (4) #5 Additional |

\* Nominal ring and cover size.

- FABRICATION NOTES:**
1. Provide Class "H" concrete in accordance with Item 421 and having a minimum compressive strength of 5,000 psi.
  2. Provide Grade 60 reinforcing steel or equivalent area of WWR.
  3. Extensions may be right, left, both or none. Provide extensions as specified elsewhere in the plans.
  4. Design tongue and groove joints for full closure on both shoulders. Minimum spigot depth is 3/4". Lid may employ a butt joint with dowels at the Contractor's option.
  5. Provide lifting devices in conformance with Manufacturer's recommendations.
  6. Provide cast iron solid cover, unless noted otherwise elsewhere in the plans.
  7. Chamfer vertical edges of Inlet Lid 3/4" as shown in Front View, sheet 1.
- INSTALLATION NOTES:**
1. Inlet throat and lid are not intended for direct traffic. Do not place in roadway.
  2. Seal tongue and groove joints and butt joints with preformed or bulk mastic in conformance with Manufacturer's recommendations. Tongue and groove joints may be grouted no more than 1" between each section, or 1/2 the joint depth, whichever is greater.
  3. Do not grout rubber gasket joints without Manufacturer's recommendation.
- GENERAL NOTES:**
1. Designed according to ASTM C913.
  2. Open area of main throat = 360 sq in. Open area of one extension throat = 324 sq in.
  3. Payment for Inlet is per Item 465, "Junction Boxes, Manholes, and Inlets" by type, size, and extension placement. Extensions are subsidiary to inlet.

Cover dimensions are clear dimensions, unless noted otherwise.

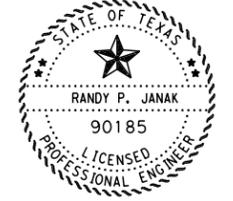
HS20 LOADING SHEET 2 OF 2

Texas Department of Transportation  
 Bridge Division Standard

**PRECAST CURB INLET  
 OUTSIDE ROADWAY**

PCO

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| FILE: prestd03.dgn | DN: TXDOT | CR: TXDOT | DW: TXDOT | CR: TXDOT |
| TXDOT January 2015 | CONT      | SECT      | JOB       | HIGHWAY   |
| REVISIONS          | DEPT      | COUNTY    | SHEET NO. |           |



NAME: *Randy P. Janak* PE  
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4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
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**WESTERN HEIGHTS STREET  
 IMPROVEMENT PROJECT**

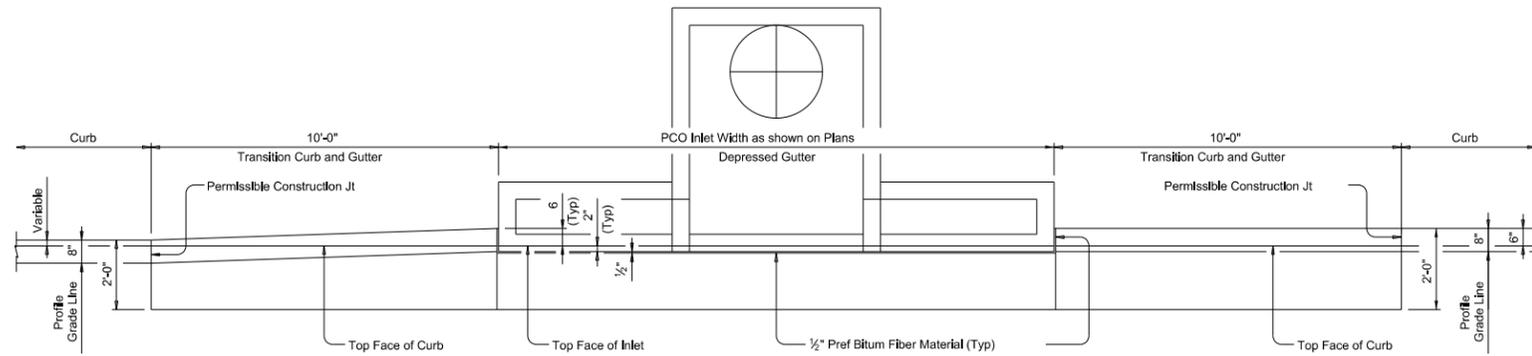
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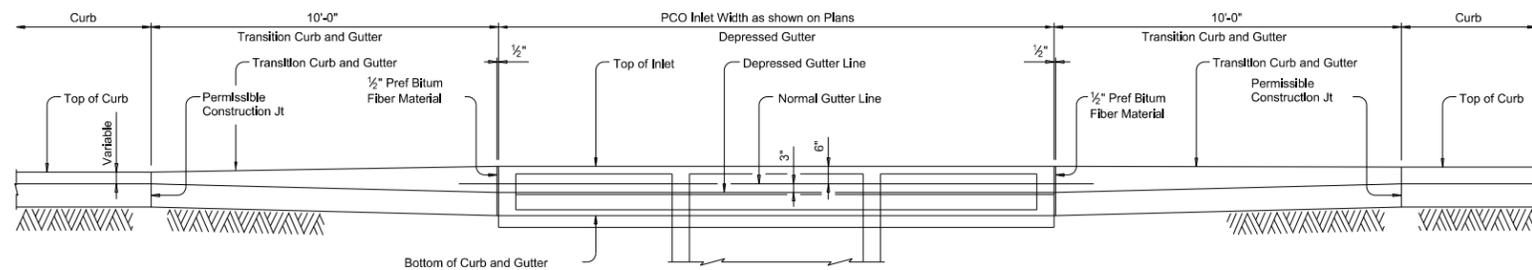
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SHOWING TYPE I, IIa & III Curb and Gutter

SHOWING TYPE II & IV Curb and Gutter

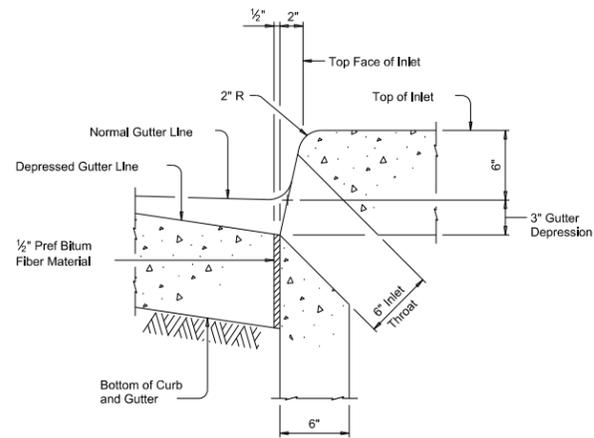
**PLAN**



SHOWING TYPE I, IIa & III Curb and Gutter

SHOWING TYPE II & IV Curb and Gutter

**ELEVATION**



SECTION AT GUTTER AND INLET

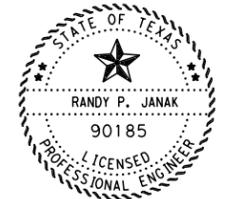
Reinforcing steel not shown for clarity.

**CONSTRUCTION NOTES:**  
 Align top face of curb with PCO Inlet as shown.

**MATERIAL NOTES:**  
 Provide 1/2" Preformed Bituminous Fiber Material.

**GENERAL NOTES:**  
 See Precast Curb Inlet Outside Roadway (PCO) standard for details and notes not shown.  
 See Concrete Curb and Curb and Gutter (CCCG-12) standard for details and notes not shown.  
 Curb and Gutter Transitions is paid for and in accordance with Item 529, "Concrete Curb, Gutter, and Combined Curb and Gutter."  
 Preformed Bituminous Fiber Material is subsidiary to PCO Inlet.

|   |                     |               |              |
|---|---------------------|---------------|--------------|
|   |                     |               |              |
| <b>CURB AND GUTTER<br/>         TRANSITION DETAILS<br/>         FOR PCO INLET</b> |                     |               |              |
| <b>CGT-PCO</b>  |                     |               |              |
| FILE: prest13-20.dgn  | DN: TXDOT           | CR: AES       | DW: JTR      |
| ©TXDOT February 2020  | CONT: FEBRUARY 2020 | SECT: HIGHWAY | JOB: HIGHWAY |
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**WESTERN HEIGHTS STREET  
 IMPROVEMENT PROJECT**

**CURB & GUTTER  
 TRANSITION DETAILS  
 FOR PCO INLET**

SCALE: N. T. S. SHEET 1 OF 1

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| PROJECT NO. | 25-015-03 | SHEET NO. | 51 |
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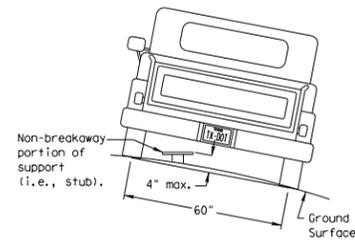
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**SIGN SUPPORT DESCRIPTIVE CODES**  
 (Descriptive Codes correspond to project estimate and quantities sheets)

SM RD SGN ASSM TY XXXXX(X)XX(X-XXXX)

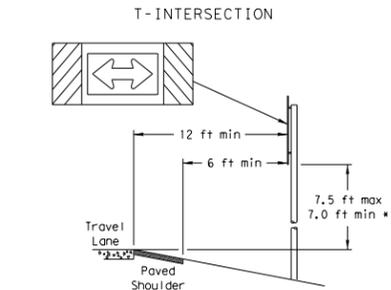
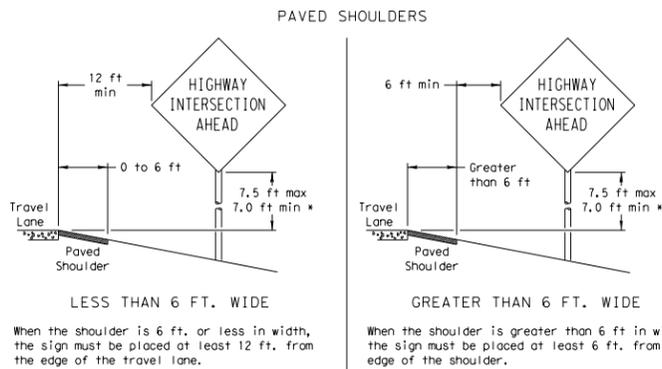
Post Type \_\_\_\_\_  
 FRP = Fiberglass Reinforced Plastic Pipe (see SMD(FRP))  
 TWT = Thin-Walled Tubing (see SMD(TWT))  
 10BNG = 10 BNG Tubing (see SMD(SLIP-1) to (SLIP-3))  
 S80 = Schedule 80 Pipe (see SMD(SLIP-1) to (SLIP-3))  
 Number of Posts (1 or 2) \_\_\_\_\_  
 Anchor Type \_\_\_\_\_  
 UA = Universal Anchor - Concreted (see SMD(FRP) and (TWT))  
 UB = Universal Anchor - Bolted down (see SMD(FRP) and (TWT))  
 WS = Wedge Anchor Steel - (see SMD(TWT))  
 WP = Wedge Anchor Plastic (see SMD(TWT))  
 SA = Slipbase - Concreted (see SMD(SLIP-1) to (SLIP-3))  
 SB = Slipbase - Bolted Down (see SMD(SLIP-1) to (SLIP-3))  
 Sign Mounting Designation  
 P = Prefab. "Plain" (see SMD(SLIP-1) to (SLIP-3), (TWT), (FRP))  
 T = Prefab. "T" (see SMD(SLIP-1) to (SLIP-3), (TWT))  
 U = Prefab. "U" (see SMD(SLIP-1) to (SLIP-3))  
 IF REQUIRED  
 1EXT or 2EXT = Number of Extensions (see SMD(SLIP-1) to (SLIP-3), (TWT))  
 BM = Extruded Wind Beam (see SMD(SLIP-1) to (SLIP-3))  
 WC = 1.12 #/ft Wing Channel (see SMD(SLIP-1) to (SLIP-3))  
 EXAL = Extruded Aluminum Sign Panels (see SMD(SLIP-3))

**REQUIRED CLEARANCE FOR BREAKAWAY SUPPORT**



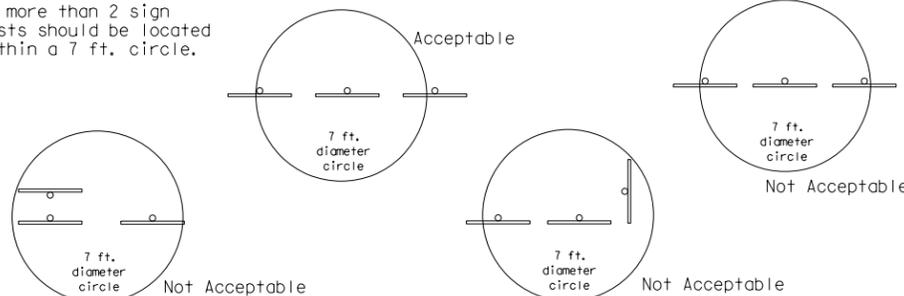
To avoid vehicle undercarriage snagging, any substantial remains of a breakaway support, when it is broken away, should not project more than 4 inches above a 60-inch chord (i.e., typical space between wheel paths).

**SIGN LOCATION**

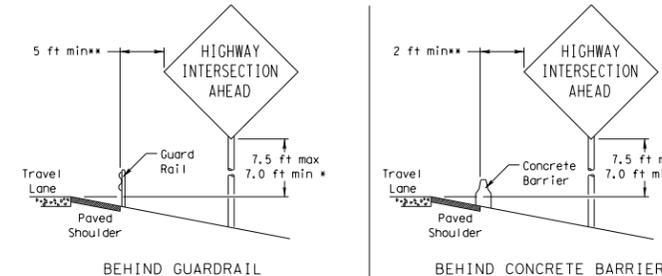


When this sign is needed at the end of a two-lane, two way roadway, the right edge of the sign should be in line with the centerline of the roadway. Place as close to ROW as practical.

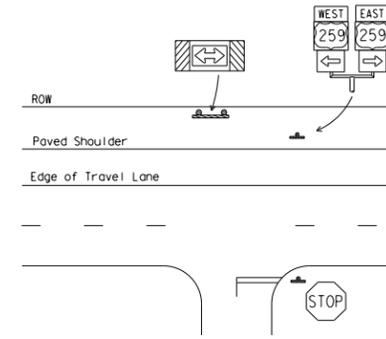
No more than 2 sign posts should be located within a 7 ft. circle.



**BEHIND BARRIER**



\*\*Sign clearance based on distance required for proper guard rail or concrete barrier performance.

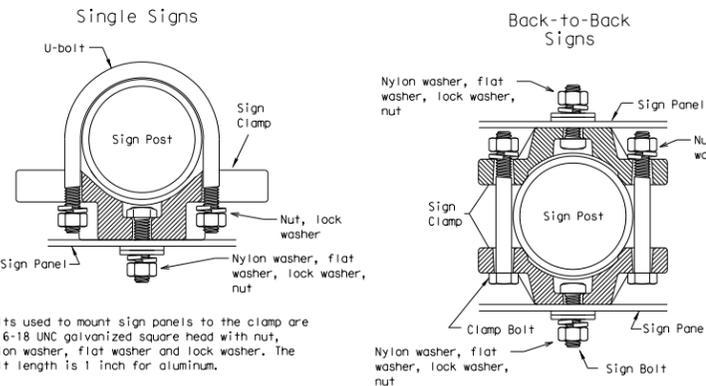


\* Signs shall be mounted using the following condition that results in the greatest sign elevation:

- (1) a minimum of 7 to a maximum of 7.5 feet above the edge of the travel lane or
  - (2) a minimum of 7 to a maximum of 7.5 feet above the grade at the base of the support when sign is installed on the backslope.
- The maximum values may be increased when directed by the Engineer.
- See the Traffic Operations Division website for detailed drawings of sign clamps, Triangular Slipbase System components and Wedge Anchor System components.

The website address is:  
<http://www.txdot.gov/publications/traffic.htm>

**TYPICAL SIGN ATTACHMENT DETAIL**



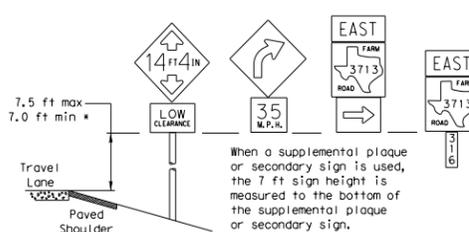
Bolts used to mount sign panels to the clamp are 5/16-18 UNC galvanized square head with nut, nylon washer, flat washer and lock washer. The bolt length is 1 inch for aluminum.

When two sign clamps are used to mount signs back-to-back, use a 5/16-18 UNC galvanized hex head per ASTM A307 with nut and helical-spring lock washer. The approximate bolt lengths for various post sizes and sign clamp types are given in the table at right. The bolt length may need to be adjusted depending upon field conditions.

Sign clamps may be either the specific size clamp or the universal clamp.

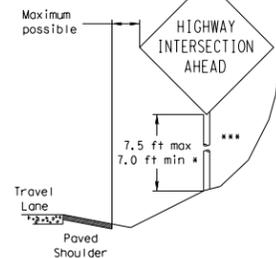
| Pipe Diameter  | Approximate Bolt Length |                 |
|----------------|-------------------------|-----------------|
|                | Specific Clamp          | Universal Clamp |
| 2" nominal     | 3"                      | 3 or 3 1/2"     |
| 2 1/2" nominal | 3 or 3 1/2"             | 3 1/2 or 4"     |
| 3" nominal     | 3 1/2 or 4"             | 4 1/2"          |

**SIGNS WITH PLAQUES**



When a supplemental plaque or secondary sign is used, the 7 ft sign height is measured to the bottom of the supplemental plaque or secondary sign.

**RESTRICTED RIGHT-OF-WAY**  
 (When 6 ft min. is not possible.)

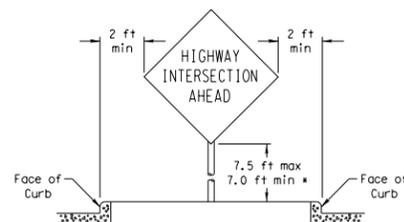


Right-of-way restrictions may be created by rocks, water, vegetation, forest, buildings, a narrow island, or other factors.

In situations where a lateral restriction prevents the minimum horizontal clearance from the edge of the travel lane, signs should be placed as far from the travel lane as practical.

\*\*\* Post may be shorter if protected by guardrail or if Engineer determines the post could not be hit due to extreme slope.

**CURB & GUTTER OR RAISED ISLAND**



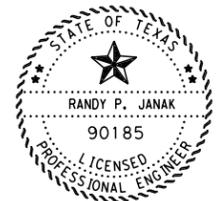
Texas Department of Transportation  
 Traffic Operations Division

**SIGN MOUNTING DETAILS  
 SMALL ROADSIDE SIGNS  
 GENERAL NOTES & DETAILS**

SMD (GEN) - 08

|                   |           |           |           |           |
|-------------------|-----------|-----------|-----------|-----------|
| © TXDOT July 2002 | DNV TXDOT | CKI TXDOT | DNV TXDOT | CKI TXDOT |
| 9-08              | REVISIONS | CONT      | SECT      | JOB       |
|                   |           |           |           | HIGHWAY   |
|                   |           | DIST      | COUNTY    | SHEET NO. |

26A



NAME: Randy P. Janak PE  
 DATE: 2/24/2026



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 TEL: (361) 570-7500 TXSURV FIRM #100576-00 TXENG FIRM #10283

**WESTERN HEIGHTS STREET  
 IMPROVEMENT PROJECT**

SMD (GEN) - 08

SCALE: N. T. S.

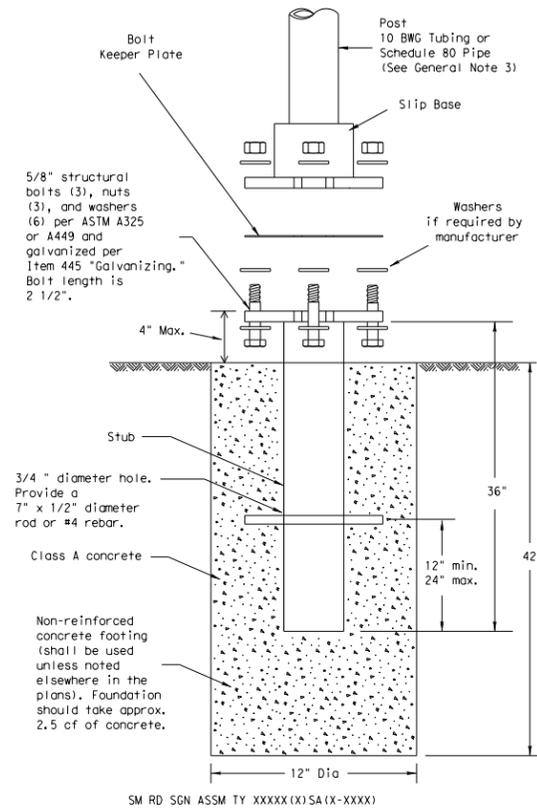
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### TRIANGULAR SLIPBASE INSTALLATION GENERAL REQUIREMENTS



#### NOTE

There are various devices approved for the Triangular Slipbase System. Please reference the Material Producer List for approved slip base systems. [http://www.txdot.gov/business/producer\\_list.htm](http://www.txdot.gov/business/producer_list.htm) The devices shall be installed per manufacturers' recommendations. Installation procedures shall be provided to the Engineer by Contractor.

#### GENERAL NOTES:

- Slip base shall be permanently marked to indicate manufacturer, Method, design, and location of marking are subject to approval of the TxDOT Traffic Standards Engineer.
- Material used as post with this system shall conform to the following specifications:
  - 10 BWG Tubing (2.875" outside diameter)
  - 0.134" nominal wall thickness
  - Seamless or electric-resistance welded steel tubing or pipe
  - Steel shall be HSLAS Gr 55 per ASTM A1011 or ASTM A1008
  - Other steels may be used if they meet the following:
    - 55,000 PSI minimum yield strength
    - 70,000 PSI minimum tensile strength
    - 20% minimum elongation in 2"
  - Wall thickness (uncoated) shall be within the range of 0.122" to 0.138"
  - Outside diameter (uncoated) shall be within the range of 2.867" to 2.883"
  - Galvanization per ASTM A123 or ASTM A653 G210. For precoated steel tubing (ASTM A653), recoat tube outside diameter weld seam by metallizing with zinc wire per ASTM B833.
- See the Traffic Operations Division website for detailed drawings of sign clamps and Texas Universal Triangular Slipbase System components. The website address is: <http://www.txdot.gov/publications/traffic.htm>
- Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.

#### ASSEMBLY PROCEDURE

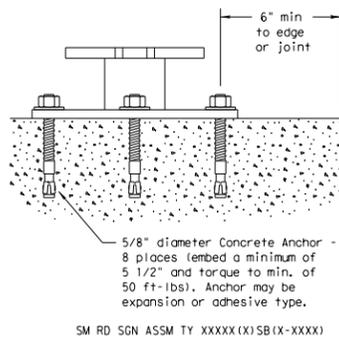
##### Foundation

- Prepare 12-inch diameter by 42-inch deep hole. If solid rock is encountered, the depth of the foundation may be reduced such that it is embedded a minimum of 18 inches into the solid rock.
- The Engineer may permit batches of concrete less than 2 cubic yards to be mixed with a portable, motor-driven concrete mixer. For small placements less than 0.5 cubic yards, hand mixing in a suitable container may be allowed by Engineer. Concrete shall be Class A.
- Push the pipe end of the slip base stub into the center of the concrete. Rotate the stub back and forth while pushing it down into the concrete to assure good contact between the concrete and stub. Continue to work the stub into the concrete until it is between 2 to 4 inches above the ground.
- Plumb the stub. Allow a minimum of 4 days to set, unless otherwise directed by the Engineer.
- The triangular slipbase system is multidirectional and is designed to release when struck from any direction.

##### Support

- Cut support so that the bottom of the sign will be 7 to 7.5 feet above the edge of the travelway (i.e., edge of the closest lane) when slip plate is below the edge of pavement or 7 to 7.5 feet above slip plate when the slip plate is above the edge of the travelway. The cut shall be plumb and straight.
- Attach sign to support using connections shown. When multiple signs are installed on the same support, ensure the minimum clearance between each sign is maintained. See SMD(SLIP-2) for clearances based on sign types.

#### CONCRETE ANCHOR



Concrete anchor consists of 5/8" diameter stud bolt with UNC series bolt threads on the upper end. Heavy hex nut per ASTM A563, and hardened washer per ASTM F436. The stud bolt shall have a minimum yield and ultimate tensile strength of 50 and 75 KSI, respectively. Nuts, bolts and washers shall be galvanized per Item 445, "Galvanizing." Adhesive type anchors shall have stud bolts installed with Type III epoxy per DMS-6100, "Epoxyes and Adhesives." Adhesive anchors may be loaded after adequate epoxy cure time per the manufacturer's recommendations. Top of bolt shall extend at least flush with top of the nut when installed. The anchor, when installed in 4000 psi normal-weight concrete with a 5 1/2" minimum embedment, shall have a minimum allowable tension and shear of 3900 and 3100 psi, respectively.

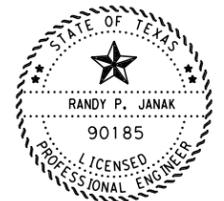
Texas Department of Transportation  
 Traffic Operations Division

SIGN MOUNTING DETAILS  
 SMALL ROADSIDE SIGNS  
 TRIANGULAR SLIPBASE SYSTEM

SMD (SLIP-1) -08

|                   |           |           |           |           |
|-------------------|-----------|-----------|-----------|-----------|
| © TxDOT July 2002 | DN1 TxDOT | EX1 TxDOT | DN1 TxDOT | EX1 TxDOT |
| 9-08              | CONT      | SECT      | JOB       | HIGHWAY   |
|                   | DIST      | COUNTY    | SHEET NO. |           |

26B



NAME: Randy P. Janak PE  
 DATE: 2/24/2026



**CivilCorp**  
 an ESP COMPANY  
 4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
 TEL: (361) 570-7500 TXSURV FIRM #100576-00 TXENG FIRM #10283

**WESTERN HEIGHTS STREET  
 IMPROVEMENT PROJECT**

SMD (SLIP-1) -08

SCALE: N. T. S.

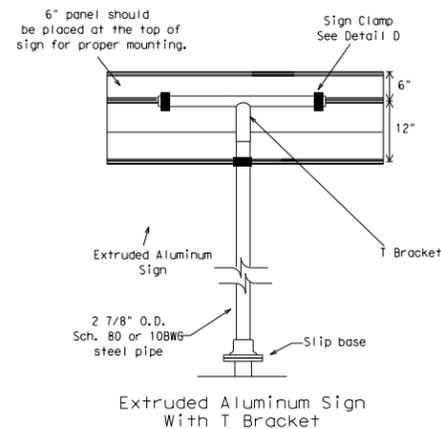
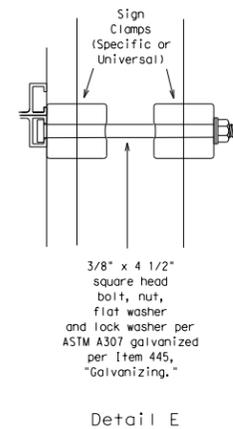
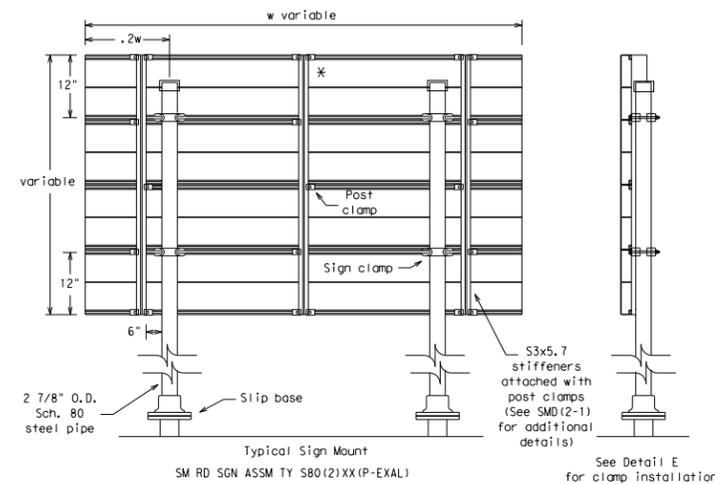
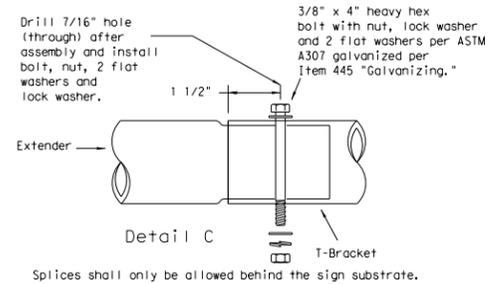
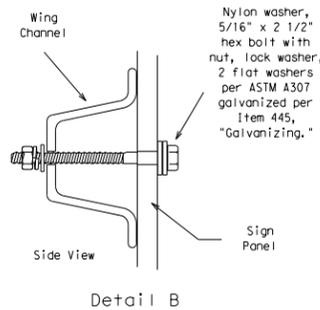
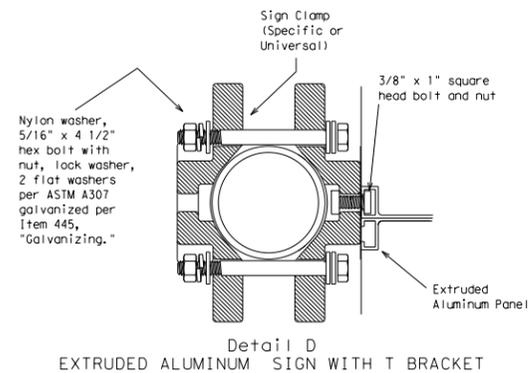
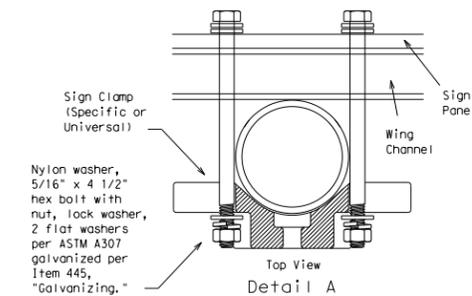
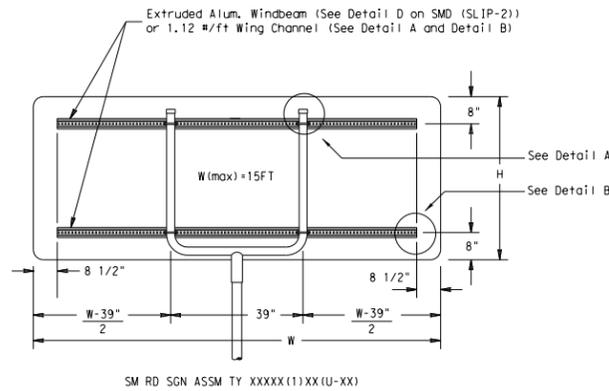
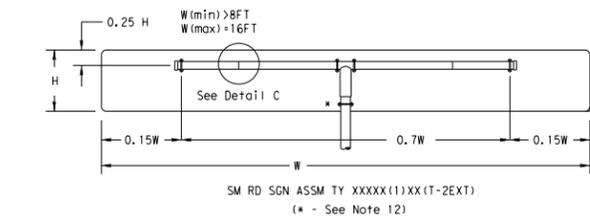
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| REVISIONS   |           |           |    |
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DATE:  
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GENERAL NOTES:

1. SIGN SUPPORT # OF POSTS MAX. SIGN AREA  

|        |   |       |
|--------|---|-------|
| 10 BWG | 1 | 16 SF |
| 10 BWG | 2 | 32 SF |
| Sch 80 | 1 | 32 SF |
| Sch 80 | 2 | 64 SF |
2. The Engineer may require that a Schedule 80 post be used in place of a 10 BWG where a sign height is abnormally high due to a fill slope.
3. Sign supports shall not be spliced except where shown. Sign support posts shall not be spliced.
4. Aluminum sign blanks shall conform to Departmental Material Specifications DMS-7110 and shall have the following minimum thicknesses: 0.080 for signs less than 7.5 sq. ft., 0.100 for signs 7.5 to 15 sq. ft., and 0.125 for signs greater than 15 sq. ft.
5. Signs that require specific supports due to reasons in addition to windloading are indicated on the "REQUIRED SUPPORT" table on this sheet.
6. For horizontal rectangular signs fabricated from flat aluminum, T-brackets are used for signs 24 inches or less in height. U-brackets are used for signs of greater height.
7. When two triangular slipbase supports are used to support a single sign, they shall not be "rigidly" connected to each other except through the sign panel. This will allow each support to act independently when impacted by an errant vehicle.
8. Wing channel shall meet ASTM A 1011 SS Gr 50 and be galvanized per ASTM A 123.
9. Excess pipe, wing channel, or windbeam shall be cut off so that it does not extend beyond the sign panel (i.e., excess support shall not be visible when the sign is viewed from the front.) Repair galvanized coating at cut support ends per Item 445, "Galvanizing."
10. Sign blanks shall be the sizes and shapes shown on the plans.
11. Additional sign clamp required on the "T-bracket" post for 24 inch high signs. Place the clamp 3 inches above bottom of sign when possible.
12. Post open ends shall be fitted with Friction Caps.

REQUIRED SUPPORT

|            | SIGN DESCRIPTION                         | SUPPORT                                 |
|------------|--|---|
| Regulatory | 48-inch STOP sign (R1-1)                 | TY 10BWG(1)XX(T)<br>TY 10BWG(1)XX(P-BM) |
|            | 60-inch YIELD sign (R1-2)                | TY 10BWG(1)XX(T)<br>TY 10BWG(1)XX(P-BM) |
|            | 48x16-inch ONE-WAY sign (R6-1)           | TY 10BWG(1)XX(T)<br>TY 10BWG(1)XX(P-BM) |
|            | 36x48, 48x36, and 48x48-inch signs       | TY 10BWG(1)XX(T)                        |
| Warning    | 48x60-inch signs                         | TY S80(1)XX(T)                          |
|            | 48x48-inch signs (diamond or square)     | TY 10BWG(1)XX(T)                        |
|            | 48x60-inch signs                         | TY S80(1)XX(T)                          |
|            | 48-inch Advance School X-ing sign (S1-1) | TY 10BWG(1)XX(T)                        |
|            | 48-inch School X-ing sign (S2-1)         | TY 10BWG(1)XX(T)                        |
|            | Large Arrow sign (W1-6 & W1-7)           | TY 10BWG(1)XX(T)                        |



SIGN MOUNTING DETAILS  
 SMALL ROADSIDE SIGNS  
 TRIANGULAR SLIPBASE SYSTEM  
 SMD(SLIP-3)-08

|                   |           |           |           |           |
|-------------------|-----------|-----------|-----------|-----------|
| © TXDOT July 2002 | DN1 TXDOT | CK1 TXDOT | DN1 TXDOT | CK1 TXDOT |
| 9-08 REVISIONS    | CONT      | SECT      | JOB       | HIGHWAY   |
|                   | DIST      | COUNTY    | SHEET NO. |           |

26D



NAME: Randy P. Janak PE  
 DATE: 2/24/2026



WESTERN HEIGHTS STREET  
 IMPROVEMENT PROJECT

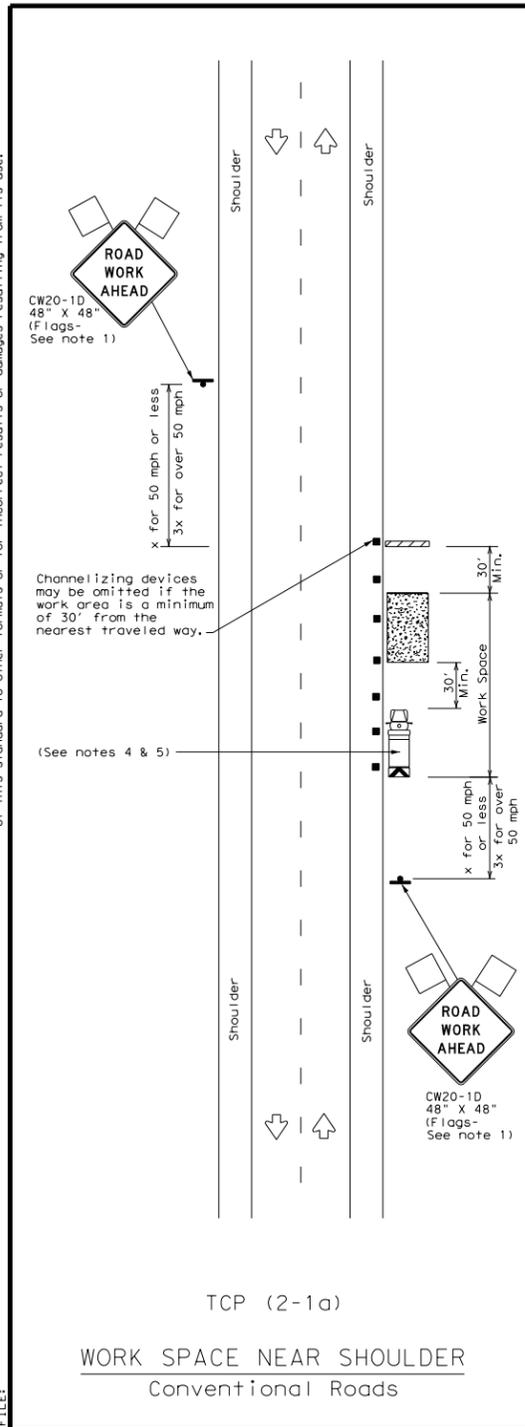
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SCALE: N. T. S.

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| PROJECT NO. | 25-015-03 | SHEET NO. | 55 |
| REVISIONS   |           |           |    |
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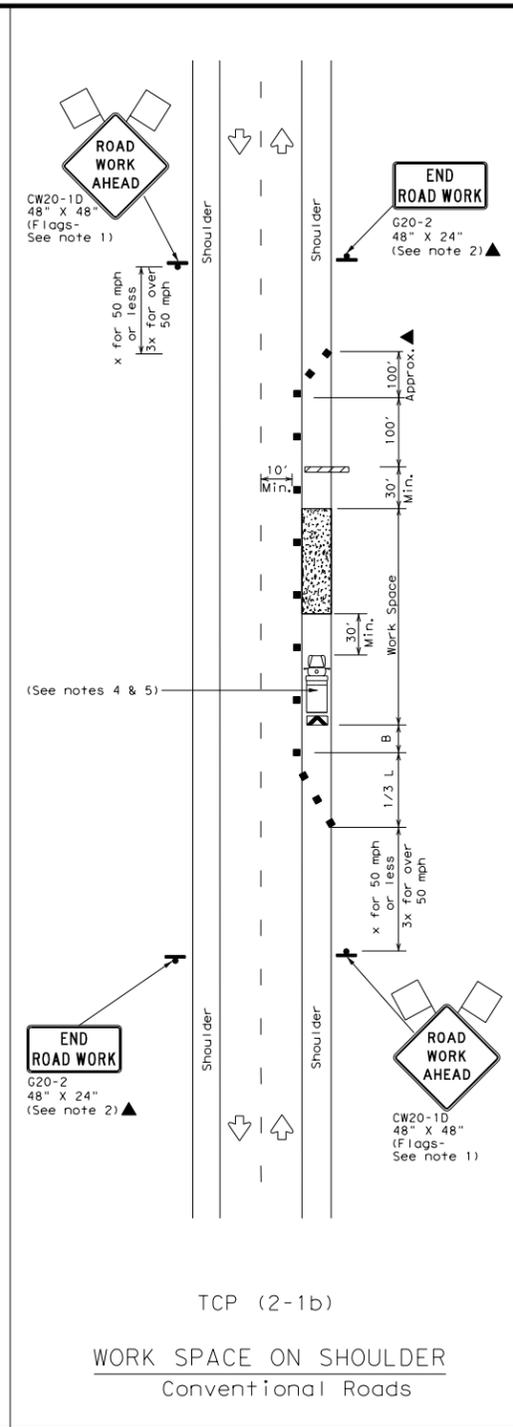
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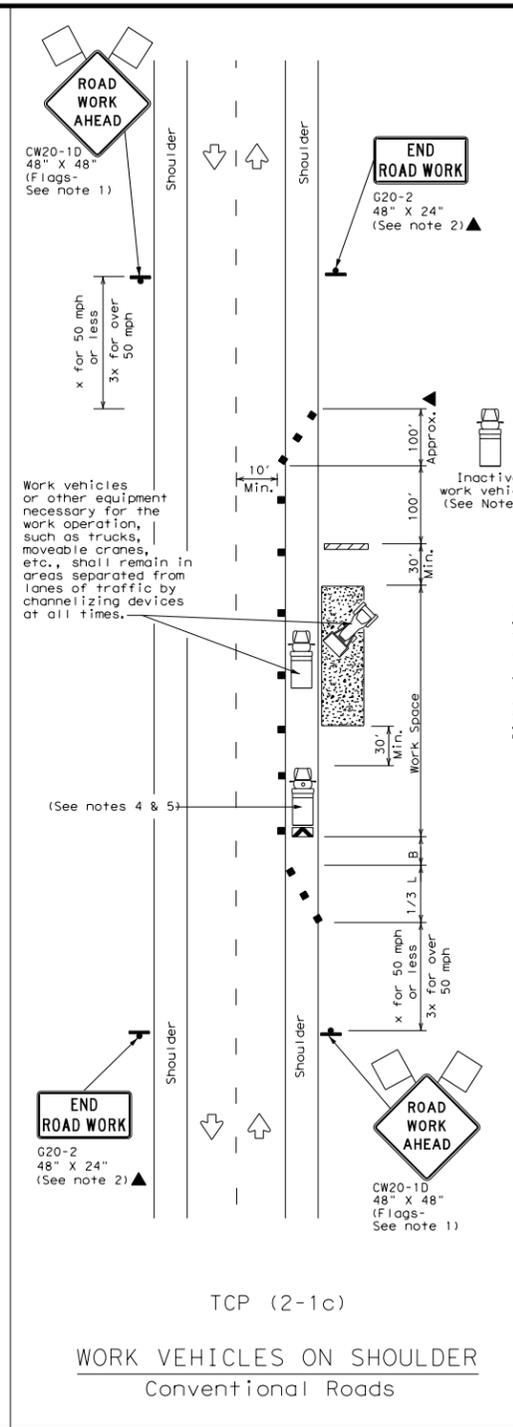
TCP (2-1a)

WORK SPACE NEAR SHOULDER  
Conventional Roads



TCP (2-1b)

WORK SPACE ON SHOULDER  
Conventional Roads



TCP (2-1c)

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 = WS/60 | 150'                               | 165'       | 180'       | 30'   | 60'          | 120'                              | 90'                                     |
| 35             |           | 205'                               | 225'       | 245'       | 35'   | 70'          | 160'                              | 120'                                    |
| 40             | L = WS    | 265'                               | 295'       | 320'       | 40'   | 80'          | 240'                              | 155'                                    |
| 45             |           | 450'                               | 495'       | 540'       | 45'   | 90'          | 320'                              | 195'                                    |
| 50             | L = WS    | 500'                               | 550'       | 600'       | 50'   | 100'         | 400'                              | 240'                                    |
| 55             |           | 550'                               | 605'       | 660'       | 55'   | 110'         | 500'                              | 295'                                    |
| 60             | L = WS    | 600'                               | 660'       | 720'       | 60'   | 120'         | 600'                              | 350'                                    |
| 65             |           | 650'                               | 715'       | 780'       | 65'   | 130'         | 700'                              | 410'                                    |
| 70             | L = WS    | 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 CW20-1D "ROAD WORK AHEAD" signs for shoulder work on conventional roadways.

Texas Department of Transportation  
 Traffic Operations Division Standard

TRAFFIC CONTROL PLAN  
 CONVENTIONAL ROAD  
 SHOULDER WORK

TCP (2-1) - 18

|                     |      |        |           |         |
|---------------------|------|--------|-----------|---------|
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| TXDOT December 1985 | CONT | SECT   | JOB       | HIGHWAY |
| REVISIONS           | DIST | COUNTY | SHEET NO. |         |
| 2-94 4-98           |      |        |           |         |
| 8-95 2-12           |      |        |           |         |
| 1-97 2-18           |      |        |           |         |



NAME: Randy P. Janak PE  
 DATE: 2/24/2026



WESTERN HEIGHTS STREET  
 IMPROVEMENT PROJECT

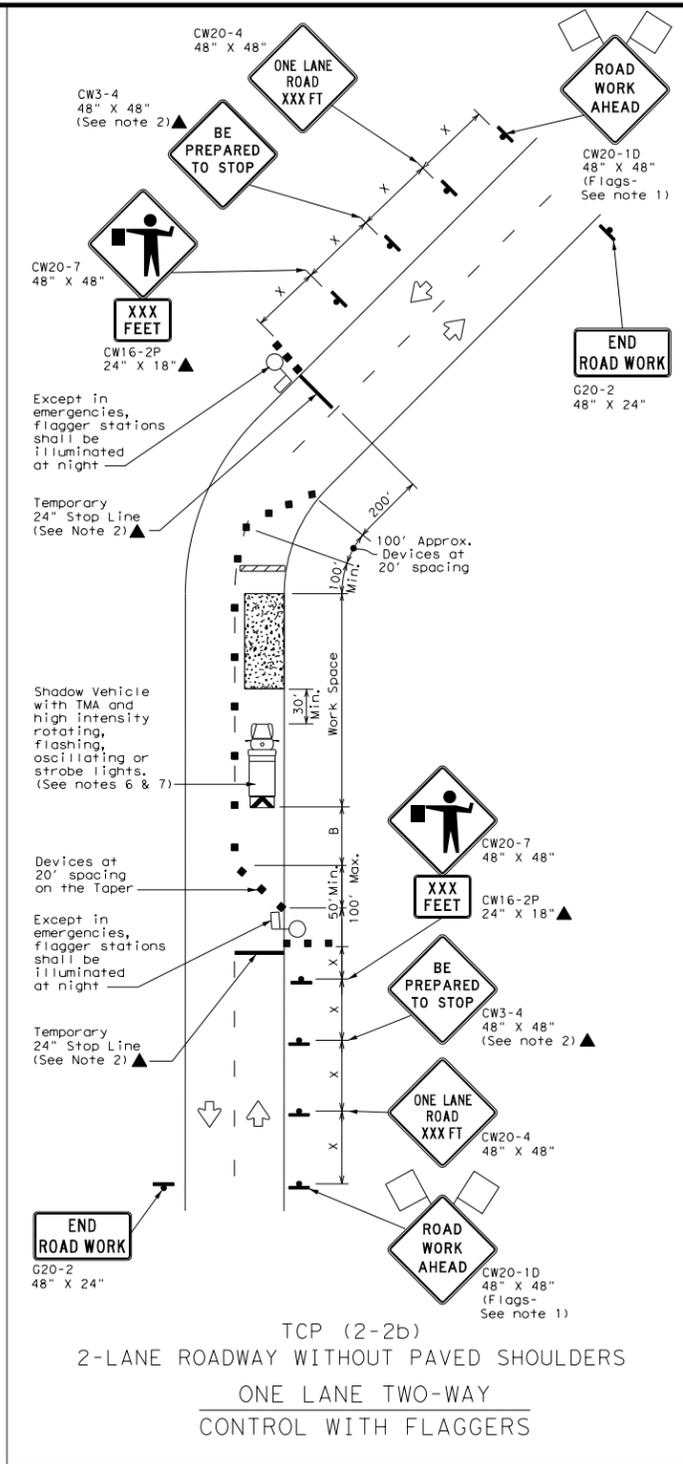
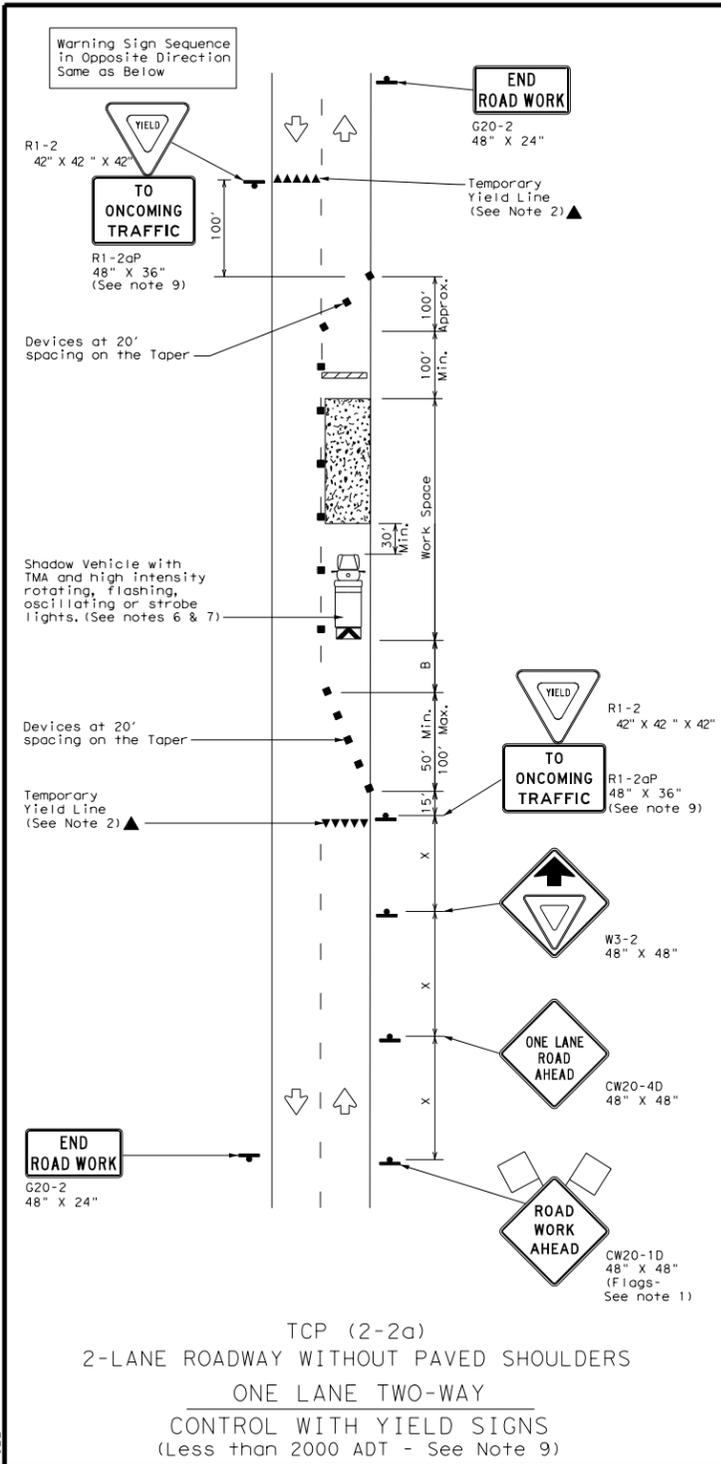
TCP (2-1) - 18

SHEET 1 OF 1

|             |           |           |    |
|-------------|-----------|-----------|----|
| PROJECT NO. | 25-015-03 | SHEET NO. | 56 |
| REVISIONS   |           |           |    |
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**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             |                          | 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.

**Texas Department of Transportation** Traffic Operations Division Standard

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

**TCP (2-2) - 18**

|                       |           |        |           |         |
|-----------------------|-----------|--------|-----------|---------|
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| 8-95 3-03             | REVISIONS |        |           |         |
| 1-97 2-12             | DIST      | COUNTY | SHEET NO. |         |
| 4-98 2-18             |           |        |           |         |

STATE OF TEXAS  
 RANDY P. JANAK  
 90185  
 LICENSED PROFESSIONAL ENGINEER

NAME: Randy P. Janak PE  
 DATE: 2/24/2026

**CITY OF PORT LAVACA**  
 TEXAS

**CivilCorp**  
 an ESP COMPANY  
 4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
 TEL: (361) 570-7500 TXSURV FIRM #100576-00 TXENG FIRM #10283

**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

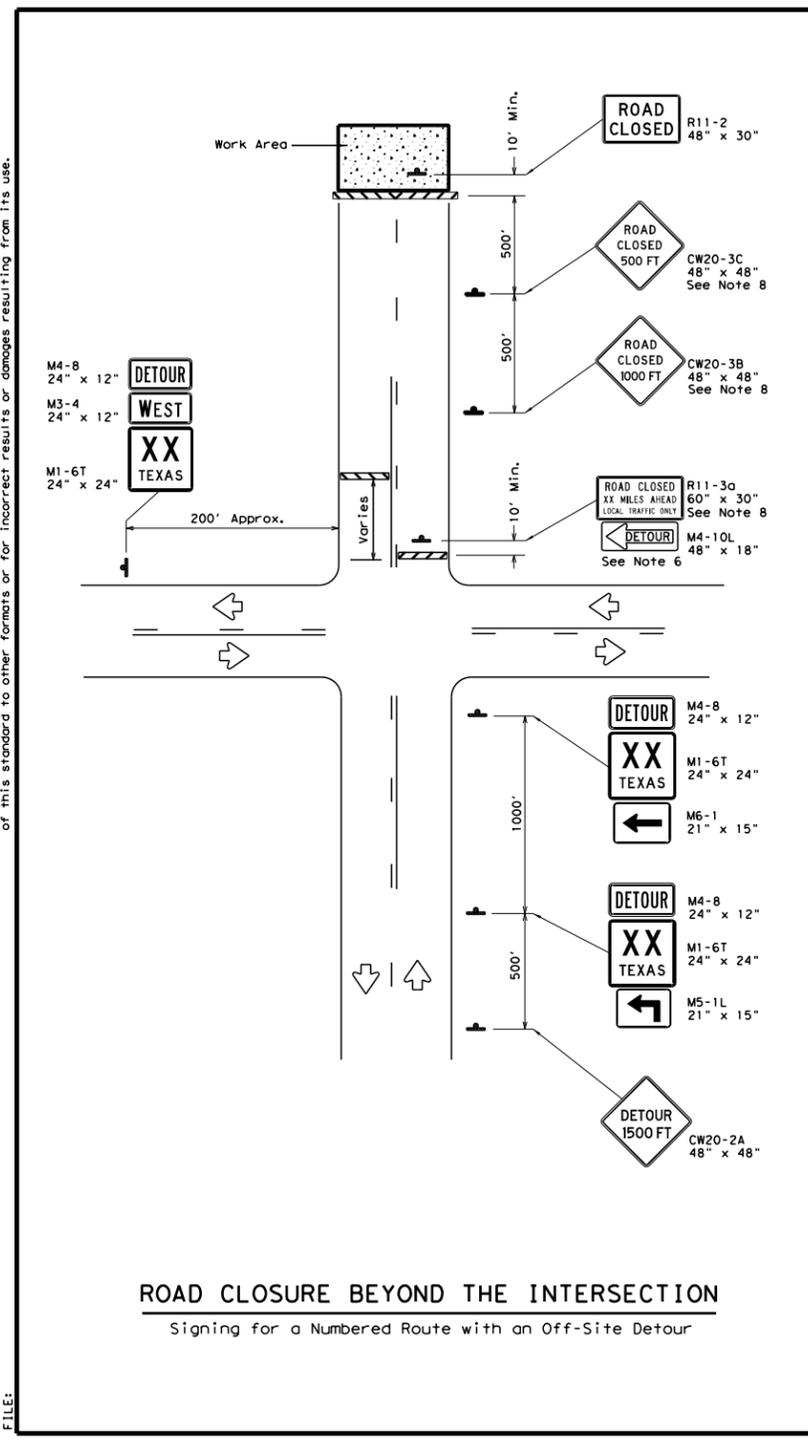
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SCALE: N. T. S.

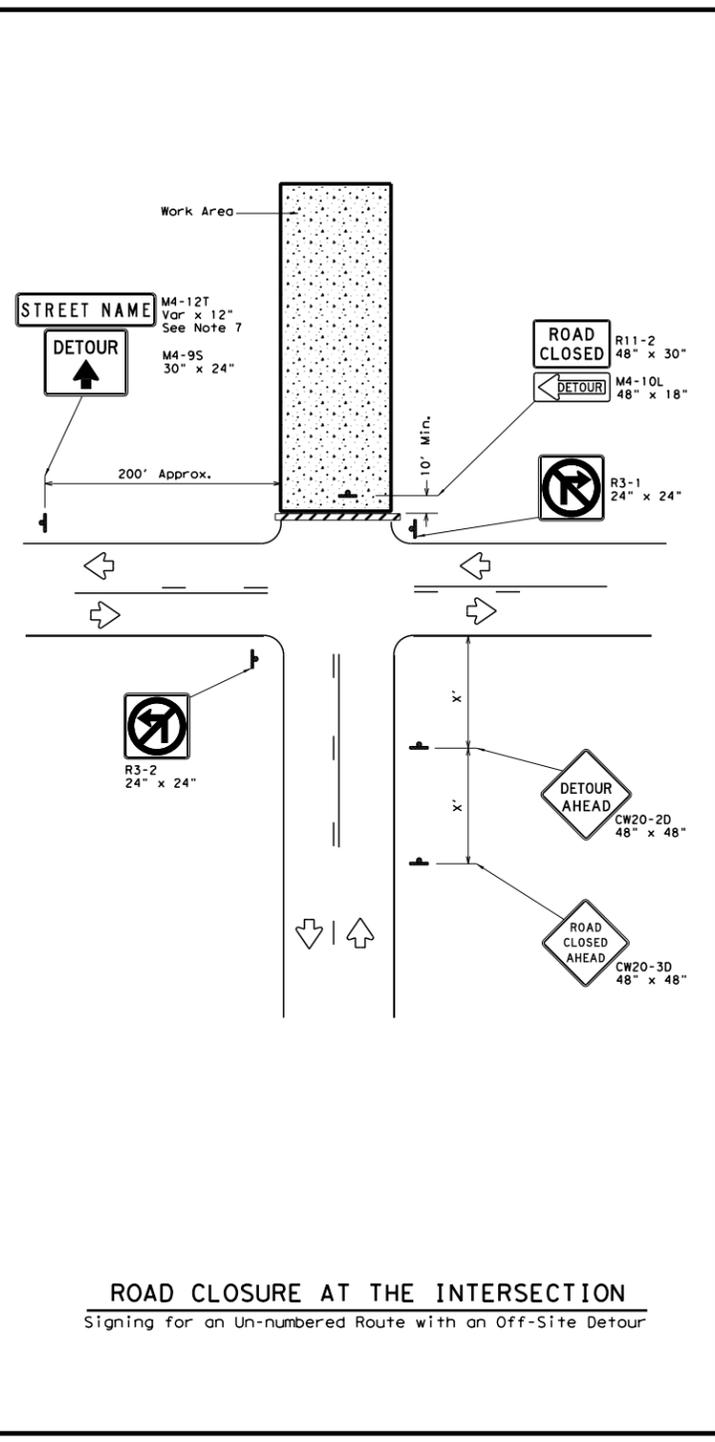
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| PROJECT NO. | 25-015-03 | SHEET NO. | 57 |
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**ROAD CLOSURE BEYOND THE INTERSECTION**  
 Signing for a Numbered Route with an Off-Site Detour



**ROAD CLOSURE AT THE INTERSECTION**  
 Signing for an Un-numbered Route with an Off-Site Detour

**LEGEND**

|  |                  |
|--|------------------|
|  | Type 3 Barricade |
|  | Sign             |

| Posted Speed * | Minimum Sign Spacing * Distance |
|----------------|---------------------------------|
| 30             | 120'                            |
| 35             | 160'                            |
| 40             | 240'                            |
| 45             | 320'                            |
| 50             | 400'                            |
| 55             | 500'                            |
| 60             | 600'                            |
| 65             | 700'                            |
| 70             | 800'                            |
| 75             | 900'                            |

\* Conventional Roads Only

**GENERAL NOTES**

- This sheet is intended to provide details for temporary work zone road closures. For permanent road closure details see the D&M standards.
- Barricades used shall meet the requirements shown on Barricade and Construction Standard BC(10) and listed on the Compliant Work Zone Traffic Control Devices List (CWZTCD).
- Stackpiled materials shall not be placed on the traffic side of barricades.
- Barricades at the road closure should extend from pavement edge to pavement edge.
- Detour signing shown is intended to illustrate the type of signing that is appropriate for numbered routes or un-numbered routes as labeled. It does not indicate the full extent of detour signing required. Detour routes should be signed as shown elsewhere in the plans.
- If the road is open for a significant distance beyond the intersection or there are significant origin/destination points beyond the intersection, the signs and barricades at this location should be located at the edge of the traveled way.
- The Street Name (M4-12T) sign is to be placed above the DETOUR (M4-9S) sign.
- For urban areas where there is a shorter distance between the intersection and the actual closure location, the ROAD CLOSED XX MILES AHEAD (R11-3a) sign may be replaced with a ROAD CLOSED TO THRU TRAFFIC (R11-4) sign. If adequate space does not exist between the intersection and the closure a single ROAD CLOSED AHEAD (CW20-3D) sign spaced as per the table above may replace the ROAD CLOSED 1000 FT (CW20-3B) and ROAD CLOSED 500 FT (CW20-3C) signs.
- Signs and barricades shown shall be subsidiary to Item 502. Locations where these details will be required shall be as shown elsewhere in the plans.

|   |  |  |
|---|--|--|
| Texas Department of Transportation        |  | Traffic Operations Division Standard     |
| <b>WORK ZONE ROAD CLOSURE DETAILS</b>     |  |  |
| <b>WZ (RCD) - 13</b>                      |  |  |
| FILE: wzrcd-13.dgn<br>© TXDOT August 1995 | DIM: TXDOT<br>CONT: SECT<br>JOB: HIGHWAY | DIM: TXDOT<br>DIM: TXDOT<br>SHEET NO. 58 |
| REVISIONS<br>1-97 4-98 7-13<br>2-98 3-03  | DIST: COUNTY:                            |  |



NAME: Randy P. Janak PE  
 DATE: 2/24/2026



4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
 TEL: (361) 570-7500 TXSURV FIRM #100576-00 TXENG FIRM #10283

**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

WZ (RCD) - 13

SCALE: N. T. S.

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|-------------|-----------|-----------|----|
| PROJECT NO. | 25-015-03 | SHEET NO. | 58 |
| REVISIONS   |           |           |    |
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**BARRICADE AND CONSTRUCTION (BC) STANDARD SHEETS GENERAL NOTES:**

- The Barricade and Construction Standard Sheets (BC sheets) are intended to show typical examples for placement of temporary traffic control devices, construction pavement markings, and typical work zone signs. The information contained in these sheets meet or exceed the requirements shown in the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
- The development and design of the Traffic Control Plan (TCP) is the responsibility of the Engineer.
- The Contractor may propose changes to the TCP that are signed and sealed by a licensed professional engineer for approval. The Engineer may develop, sign and seal Contractor proposed changes.
- The Contractor is responsible for installing and maintaining the traffic control devices as shown in the plans. The Contractor may not move or change the approximate location of any device without the approval of the Engineer.
- Geometric design of lane shifts and detours should, when possible, meet the applicable design criteria contained in manuals such as the American Association of State Highway and Transportation Officials (AASHTO), "A Policy on Geometric Design of Highways and Streets," the TxDOT "Roadway Design Manual" or engineering judgment.
- When projects abut, the Engineer(s) may omit the END ROAD WORK, TRAFFIC FINES DOUBLE, and other advance warning signs if the signing would be redundant and the work areas appear continuous to the motorists. If the adjacent project is completed first, the Contractor shall erect the necessary warning signs as shown on these sheets, the TCP sheets or as directed by the Engineer. The BEGIN ROAD WORK NEXT X MILES sign shall be revised to show appropriate work zone distance.
- The Engineer may require duplicate warning signs on the median side of divided highways where median width will permit and traffic volumes justify the signing.
- All signs shall be constructed in accordance with the details found in the "Standard Highway Sign Designs for Texas," latest edition. Sign details not shown in this manual shall be shown in the plans or the Engineer shall provide a detail to the Contractor before the sign is manufactured.
- The temporary traffic control devices shown in the illustrations of the BC sheets are examples. As necessary, the Engineer will determine the most appropriate traffic control devices to be used.
- Where highway construction or maintenance work is being undertaken, other than mobile operations as defined by the Texas Manual on Uniform Traffic Control Devices, CSJ limit signs are required. CSJ limit signs are shown on BC(2). The OBEY WARNING SIGNS STATE LAW sign, STAY ALERT TALK OR TEXT LATER and the WORK ZONE TRAFFIC FINES DOUBLE sign with plaque shall be erected in advance of the CSJ limits. The BEGIN ROAD WORK NEXT X MILES, CONTRACTOR and END ROAD WORK signs shall be erected at or near the CSJ limits. For mobile operations, CSJ limit signs are not required.
- Traffic control devices should be in place only while work is actually in progress or a definite need exists.
- The Engineer has the final decision on the location of all traffic control devices.
- Inactive equipment and work vehicles, including workers' private vehicles must be parked away from travel lanes. They should be as close to the right-of-way line as possible, or located behind a barrier or guardrail, or as approved by the Engineer.

**WORKER SAFETY NOTES:**

- Workers on foot who are exposed to traffic or to construction equipment within the right-of-way shall wear high-visibility safety apparel meeting the requirements of ISEA "American National Standard for High-Visibility Apparel," or equivalent revisions, and labeled as ANSI 107-2004 standard performance for Class 2 or 3 risk exposure. Class 3 garments should be considered for high traffic volume work areas or night time work.
- Except in emergency situations, flagger stations shall be illuminated when flagging is used at night.

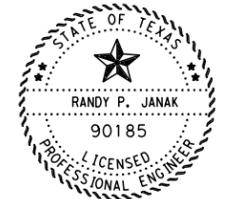
**COMPLIANT WORKZONE TRAFFIC CONTROL DEVICES**

- Only pre-qualified products shall be used. The "Compliant Work Zone Traffic Control Devices List" (CWZTCD) describes pre-qualified products and their sources.
- Work zone traffic control devices shall be compliant with the Manual for Assessing safety Hardware (MASH).

|  |
|--|
| THE DOCUMENTS BELOW CAN BE FOUND ON-LINE AT<br><a href="http://www.txdot.gov">http://www.txdot.gov</a> |
| COMPLIANT WORK ZONE TRAFFIC CONTROL DEVICES LIST (CWZTCD)  |
| DEPARTMENTAL MATERIAL SPECIFICATIONS (DMS)   |
| MATERIAL PRODUCER LIST (MPL)   |
| ROADWAY DESIGN MANUAL - SEE "MANUALS (ONLINE MANUALS)"   |
| STANDARD HIGHWAY SIGN DESIGNS FOR TEXAS (SHSD)   |
| TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD)   |
| TRAFFIC ENGINEERING STANDARD SHEETS  |

SHEET 1 OF 12

|  |           |   |           |
|--|-----------|---|-----------|
|                       |           |  |           |
| <b>BARRICADE AND CONSTRUCTION<br/>                 GENERAL NOTES<br/>                 AND REQUIREMENTS</b> |           |   |           |
| <b>BC (1) - 21</b>   |           |   |           |
| FILE#  | Dc-21.dgn | DN#   | TxDOT     |
| ©  | TxDOT     | NOVEMBER  | 2002      |
| REVISIONS  | CONT      | SECT  | JOB       |
| 4-03   | 7-13      |   |           |
| 9-07   | 8-14      |   |           |
| 5-10   | 5-21      |   |           |
|  | DIST      | COUNTY  | SHEET NO. |
|  |           |   | 59        |



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 TEL: (361) 570-7500 TXSURV FIRM #100576-00 TXENG FIRM #10283

**WESTERN HEIGHTS STREET  
 IMPROVEMENT PROJECT**

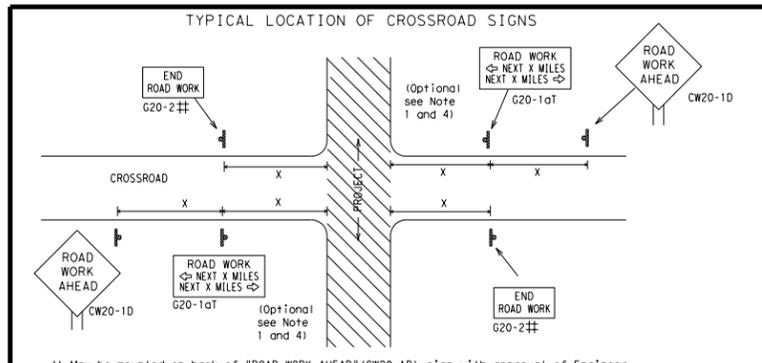
BC (1) - 21

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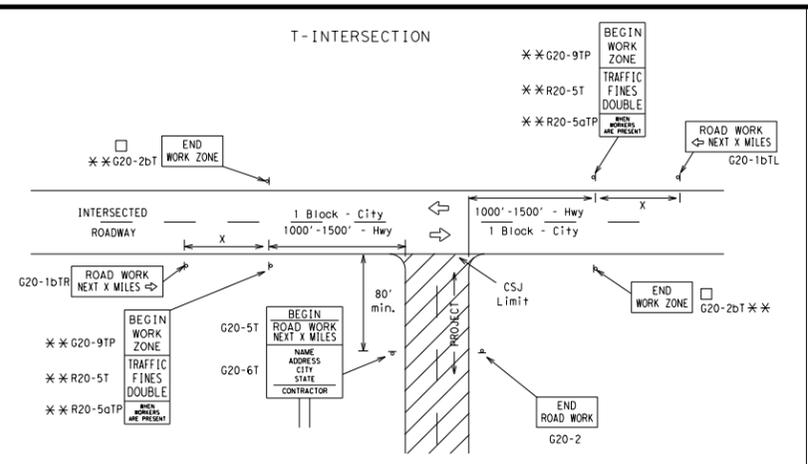
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- ## May be mounted on back of "ROAD WORK AHEAD" (CW20-1D) sign with approval of Engineer. (See note 2 below)
- The typical minimum signing on a crossroad approach should be a "ROAD WORK AHEAD" (CW20-1D) sign and a (G20-2) "END ROAD WORK" sign, unless noted otherwise in plans.
  - The Engineer may use the reduced size 36" x 36" ROAD WORK AHEAD (CW20-1D) sign mounted back to back with the reduced size 36" x 18" "END ROAD WORK" (G20-2) sign on low volume crossroads (see Note 4 under "Typical Construction Warning Sign Size and Spacing"). See the "Standard Highway Sign Designs for Texas" manual for sign details. The Engineer may omit the advance warning signs on low volume crossroads. The Engineer will determine whether a road is low volume as per TMUTCD Part 5. This information shall be shown in the plans.
  - Based on existing field conditions, the Engineer/Inspector may require additional signs such as FLAGGER AHEAD, LOOSE GRAVEL, or other appropriate signs. When additional signs are required, these signs will be considered part of the minimum requirements. The Engineer/Inspector will determine the proper location and spacing of any sign not shown on the BC sheets, Traffic Control Plan sheets or the Work Zone Standard Sheets.
  - The "ROAD WORK NEXT X MILES" (G20-1a) sign shall be required at high volume crossroads to advise motorists of the length of construction in either direction from the intersection. The Engineer will determine whether a roadway is considered high volume.
  - Additional traffic control devices may be shown elsewhere in the plans for higher volume crossroads.
  - When work occurs in the intersection area, appropriate traffic control devices, as shown elsewhere in the plans or as determined by the Engineer/Inspector, shall be in place.



- CSJ LIMITS AT T-INTERSECTION
- The Engineer will determine the types and location of any additional traffic control devices, such as a flagger and accompanying signs, or other signs, that should be used when work is being performed at or near an intersection.
  - If construction closes the road at a T-intersection, the Contractor shall place the "CONTRACTOR NAME" (G20-6T) sign behind the Type 3 Barricades for the road closure (see BC(10) also). The "ROAD WORK NEXT X MILES" left arrow (G20-1bTL) and "ROAD WORK NEXT X MILES" right arrow (G20-1bTR) signs shall be replaced by the detour signing called for in the plans.

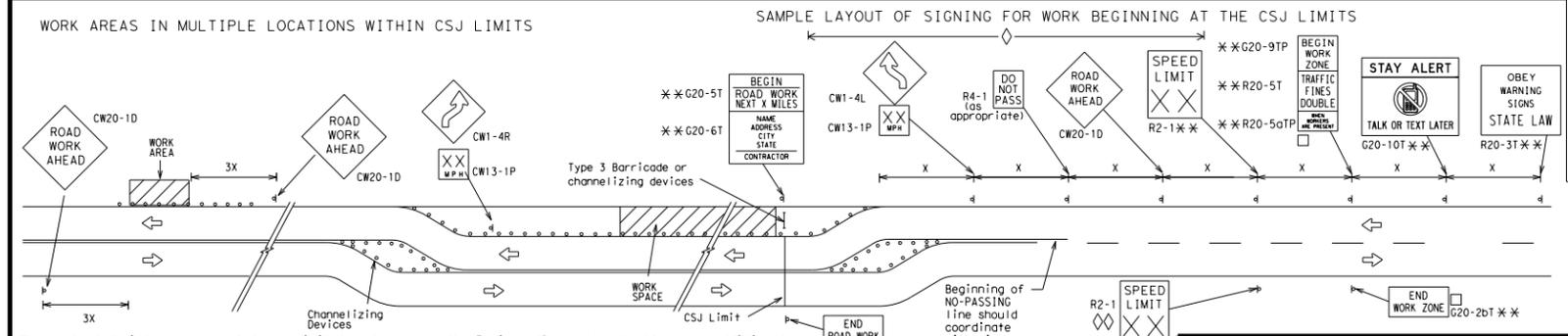
TYPICAL CONSTRUCTION WARNING SIGN SIZE AND SPACING<sup>1,5,6</sup>

| Sign Number or Series                 | SIZE              |                    | SPACING      |                   |
|---------------------------------------|-------------------|--------------------|--------------|-------------------|
|                                       | Conventional Road | Expressway/Freeway | Posted Speed | Sign Spacing "x"  |
| CW20 <sup>4</sup>                     | 48" x 48"         | 48" x 48"          | MPH          | Feet (Apprx.)     |
| CW21                                  |                   |                    | 30           | 120               |
| CW22                                  |                   |                    | 35           | 160               |
| CW23                                  |                   |                    | 40           | 240               |
| CW1, CW2, CW7, CW8, CW9, CW11, CW14   | 36" x 36"         | 48" x 48"          | 45           | 320               |
| CW3, CW4, CW5, CW6, CWB-3, CW10, CW12 | 48" x 48"         | 48" x 48"          | 50           | 400               |
|                                       |                   |                    | 55           | 500 <sup>2</sup>  |
|                                       |                   |                    | 65           | 700 <sup>2</sup>  |
|                                       |                   |                    | 70           | 800 <sup>2</sup>  |
|                                       |                   |                    | 75           | 900 <sup>2</sup>  |
|                                       |                   |                    | 80           | 1000 <sup>2</sup> |
|                                       |                   |                    | *            | * <sup>3</sup>    |

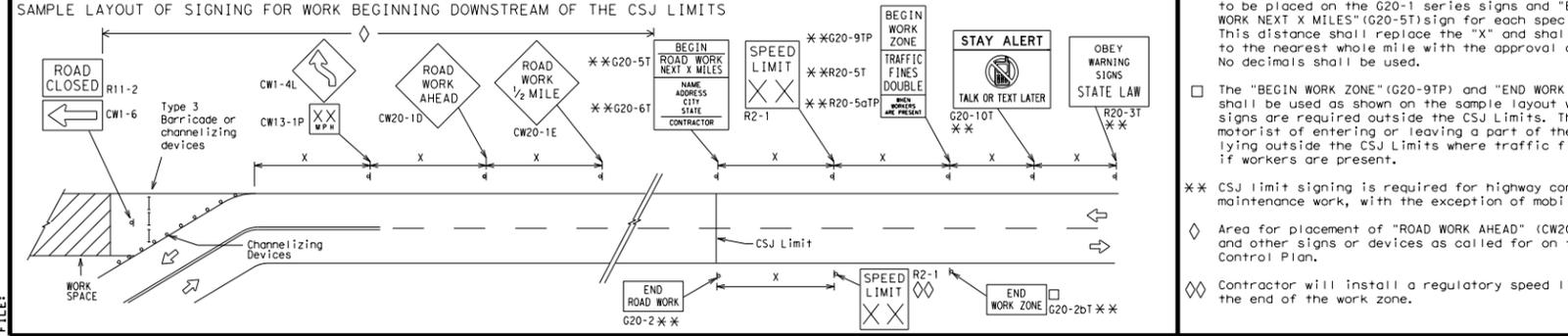
\* For typical sign spacings on divided highways, expressways and freeways, see Part 6 of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) typical application diagrams or TCP Standard Sheets.

△ Minimum distance from work area to first Advance Warning sign nearest the work area and/or distance between each additional sign.

- GENERAL NOTES
- Special or larger size signs may be used as necessary.
  - Distance between signs should be increased as required to have 1500 feet advance warning.
  - Distance between signs should be increased as required to have 1/2 mile or more advance warning.
  - 36" x 36" "ROAD WORK AHEAD" (CW20-1D) signs may be used on low volume crossroads at the discretion of the Engineer as per TMUTCD Part 5. See Note 2 under "Typical Location of Crossroad Signs".
  - Only diamond shaped warning sign sizes are indicated.
  - See sign size listing in "TMUTCD", Sign Appendix or the "Standard Highway Sign Designs for Texas" manual for complete list of available sign design sizes.



When extended distances occur between minimal work spaces, the Engineer/Inspector should ensure additional "ROAD WORK AHEAD" (CW20-1D) signs are placed in advance of these work areas to remind drivers they are still within the project limits. See the applicable TCP sheets for exact location and spacing of signs and channelizing devices.



LEGEND

|       |   |
|-------|---|
| —     | Type 3 Barricade  |
| ○ ○ ○ | Channelizing Devices  |
| —     | Sign  |
| X     | See Typical Construction Warning Sign Size and Spacing chart or the TMUTCD for sign spacing requirements. |

- NOTES
- The Contractor shall determine the appropriate distance to be placed on the G20-1 series signs and "BEGIN ROAD WORK NEXT X MILES" (G20-5T) sign for each specific project. This distance shall replace the "X" and shall be rounded to the nearest whole mile with the approval of the Engineer. No decimals shall be used.
  - The "BEGIN WORK ZONE" (G20-9TP) and "END WORK ZONE" (G20-2bT) shall be used as shown on the sample layout when advance signs are required outside the CSJ Limits. They inform the motorist of entering or leaving a part of the work zone lying outside the CSJ Limits where traffic fines may double if workers are present.
  - CSJ limit signing is required for highway construction and maintenance work, with the exception of mobile operations.
  - Area for placement of "ROAD WORK AHEAD" (CW20-1D) sign and other signs or devices as called for on the Traffic Control Plan.
  - Contractor will install a regulatory speed limit sign at the end of the work zone.

SHEET 2 OF 12

Texas Department of Transportation  
 Traffic Safety Division Standard

**BARRICADE AND CONSTRUCTION PROJECT LIMIT**

BC (2) - 21

|       |           |      |               |          |         |     |             |           |       |
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| REV#  | 1         | DATE | NOVEMBER 2002 | CONTRACT | SECTION | JOB | DESCRIPTION | SHEET NO. | 60    |
| REV#  | 2         | DATE | 9-07          | CONTRACT | SECTION | JOB | DESCRIPTION | SHEET NO. | 60    |
| REV#  | 3         | DATE | 8-14          | CONTRACT | SECTION | JOB | DESCRIPTION | SHEET NO. | 60    |
| REV#  | 4         | DATE | 7-13          | CONTRACT | SECTION | JOB | DESCRIPTION | SHEET NO. | 60    |
| REV#  | 5         | DATE | 5-21          | CONTRACT | SECTION | JOB | DESCRIPTION | SHEET NO. | 60    |

STATE OF TEXAS  
 RANDY P. JANAK  
 90185  
 LICENSED PROFESSIONAL ENGINEER

NAME: Randy P. Janak PE  
 DATE: 2/24/2026

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**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

BC (2) - 21

SCALE: N.T.S. SHEET 2 OF 12

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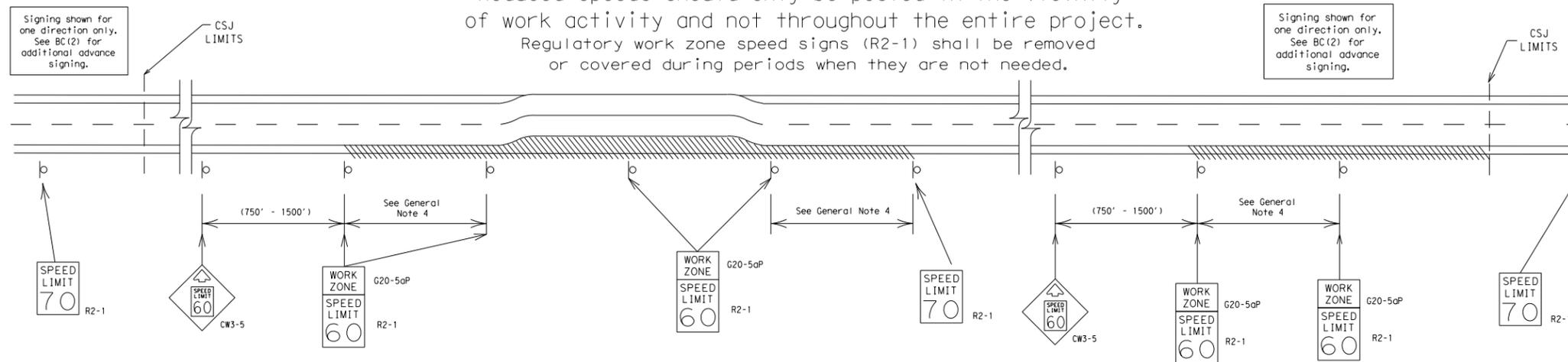
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## TYPICAL APPLICATION OF WORK ZONE SPEED LIMIT SIGNS

Work zone speed limits shall be regulatory, established in accordance with the "Procedures for Establishing Speed Zones," and approved by the Texas Transportation Commission, or by City Ordinance when within Incorporated City Limits.

Reduced speeds should only be posted in the vicinity of work activity and not throughout the entire project. Regulatory work zone speed signs (R2-1) shall be removed or covered during periods when they are not needed.



### GUIDANCE FOR USE:

#### LONG/INTERMEDIATE TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit should be included on the design of the traffic control plans when restricted geometrics with a lower design speed are present in the work zone and modification of the geometrics to a higher design speed is not feasible.

Long/Intermediate Term Work Zone Speed Limit signs, when approved as described above, should be posted and visible to the motorist when work activity is present. Work activity may also be defined as a change in the roadway that requires a reduced speed for motorists to safely negotiate the work area, including:

- rough road or damaged pavement surface
- substantial alteration of roadway geometrics (diversions)
- construction detours
- grade
- width
- other conditions readily apparent to the driver

As long as any of these conditions exist, the work zone speed limit signs should remain in place.

#### SHORT TERM WORK ZONE SPEED LIMITS

This type of work zone speed limit may be included on the design of the traffic control plans when workers or equipment are not behind concrete barrier, when work activity is within 10 feet of the traveled way or actually in the traveled way.

Short Term Work Zone Speed Limit signs should be posted and visible to the motorists only when work activity is present. When work activity is not present, signs shall be removed or covered. (See Removing or Covering on BC(4)).

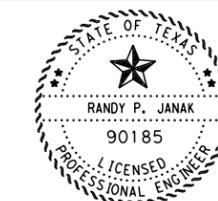
#### GENERAL NOTES

- Regulatory work zone speed limits should be used only for sections of construction projects where speed control is of major importance.
- Regulatory work zone speed limit signs shall be placed on supports at a 7 foot minimum mounting height.
- Speed zone signs are illustrated for one direction of travel and are normally posted for each direction of travel.
- Frequency of work zone speed limit signs should be:
 

|                    |                |
|--------------------|----------------|
| 40 mph and greater | 0.2 to 2 miles |
| 35 mph and less    | 0.2 to 1 mile  |
- Regulatory speed limit signs shall have black legend and border on a white reflective background (See "Reflective Sheeting" on BC(4)).
- Fabrication, erection and maintenance of the "ADVANCE SPEED LIMIT" (CW3-5) sign, "WORK ZONE" (G20-5aP) plaque and the "SPEED LIMIT" (R2-1) signs shall not be paid for directly, but shall be considered subsidiary to Item 502.
- Turning signs from view, laying signs over or down will not be allowed, unless as otherwise noted under "REMOVING OR COVERING" on BC(4).
- Techniques that may help reduce traffic speeds include but are not limited to:
  - Law enforcement.
  - Flagger stationed next to sign.
  - Portable changeable message sign (PCMS).
  - Low-power (drone) radar transmitter.
  - Speed monitor trailers or signs.
- Speeds shown on details above are for illustration only. Work Zone Speed Limits should only be posted as approved for each project.
- For more specific guidance concerning the type of work, work zone conditions and factors impacting allowable regulatory construction speed zone reduction see TxDOT form #1204 in the TxDOT e-form system.

SHEET 3 OF 12

|   |                     |           |           |
|---|---------------------|-----------|-----------|
|   |                     |           |           |
| <b>BARRICADE AND CONSTRUCTION<br/>WORK ZONE SPEED LIMIT</b> |                     |           |           |
| <b>BC (3) - 21</b>  |                     |           |           |
| FILE#   | Dc-21.dgn           | DN# TxDOT | CK# TxDOT |
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| REVISIONS   |                     | JOB       |           |
| 9-07  | 8-14                | HIGHWAY   |           |
| 7-13  | 5-21                | DIST      | COUNTY    |
|   |                     |           | SHEET NO. |
|   |                     |           | 61        |



NAME: Randy P. Janak PE  
 DATE: 2/24/2026



### WESTERN HEIGHTS STREET IMPROVEMENT PROJECT

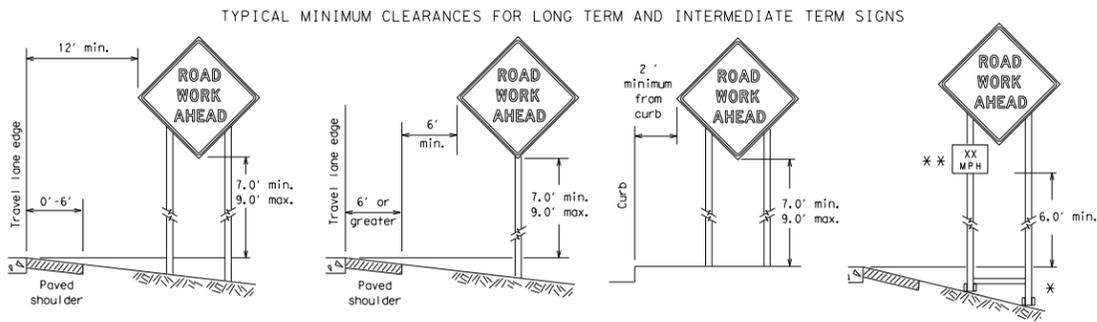
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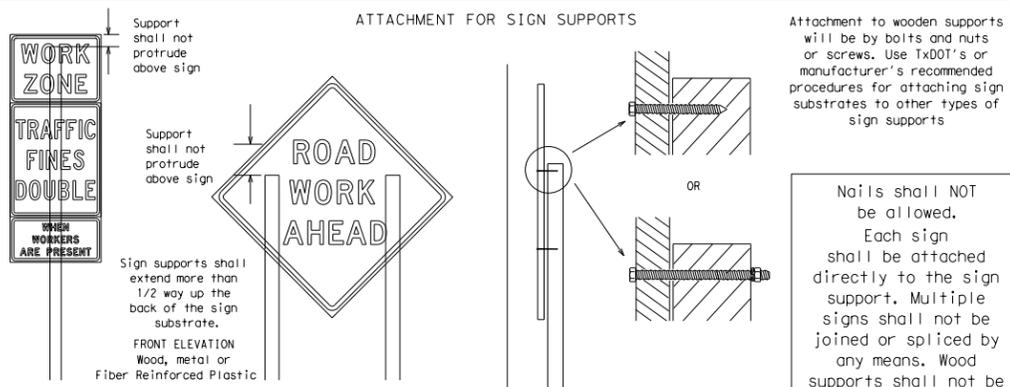
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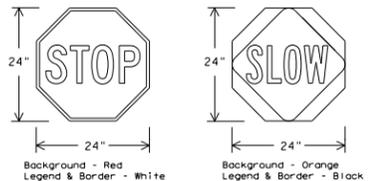


\* When placing skid supports on unlevel ground, the leg post lengths must be adjusted so the sign appears straight and plumb. Objects shall NOT be placed under skids as a means of leveling.  
 \*\* When plaques are placed on dual-leg supports, they should be attached to the upright nearest the travel lane. Supplemental plaques (advisory or distance) should not cover the surface of the parent sign.



Splicing embedded perforated square metal tubing in order to extend post height will only be allowed when the splice is made using four bolts, two above and two below the splice point. Splice must be located entirely behind the sign substrate, not near the base of the support. Splice insert lengths should be at least 5 times nominal post size, centered on the splice and of at least the same gauge material.

- STOP/SLOW PADDLES**
- STOP/SLOW paddles are the primary method to control traffic by flaggers. The STOP/SLOW paddle size should be 24" x 24".
  - STOP/SLOW paddles shall be retroreflectorized when used at night.
  - STOP/SLOW paddles may be attached to a staff with a minimum length of 6' to the bottom of the sign.
  - Any lights incorporated into the STOP or SLOW paddle faces shall only be as specifically described in Section 6E.03 Hand Signaling Devices in the TMDOT.



| SHEETING REQUIREMENTS (WHEN USED AT NIGHT) |        |  |
|--|--------|--|
| USAGE                                      | COLOR  | SIGN FACE MATERIAL                             |
| BACKGROUND                                 | RED    | TYPE B OR C SHEETING                           |
| BACKGROUND                                 | ORANGE | TYPE B <sub>1</sub> OR C <sub>1</sub> SHEETING |
| LEGEND & BORDER                            | WHITE  | TYPE B OR C SHEETING                           |
| LEGEND & BORDER                            | BLACK  | ACRYLIC NON-REFLECTIVE FILM                    |

**CONTRACTOR REQUIREMENTS FOR MAINTAINING PERMANENT SIGNS WITHIN THE PROJECT LIMITS**

- Permanent signs are used to give notice of traffic laws or regulations, call attention to conditions that are potentially hazardous to traffic operations, show route designations, destinations, directions, distances, services, points of interest, and other geographical, recreational, specific service (LOGO), or cultural information. Drivers proceeding through a work zone need the same, if not better route guidance as normally installed on a roadway without construction.
- When permanent regulatory or warning signs conflict with work zone conditions, remove or cover the permanent signs until the permanent sign message matches the roadway condition. For details for covering large guide signs see the TS-CD standard.
- When existing permanent signs are moved and relocated due to construction purposes, they shall be visible to motorists at all times.
- If existing signs are to be relocated on their original supports, they shall be installed on crashworthy bases as shown on the SMD Standard sheets. The signs shall meet the required mounting heights shown on the BC Sheets or the SMD Standards. This work should be paid for under the appropriate pay item for relocating existing signs.
- If permanent signs are to be removed and relocated using temporary supports, the Contractor shall use crashworthy supports as shown on the BC standard sheets, TLRs standard sheets or the CWZTC list. The signs shall meet the required mounting heights shown on the BC, or the SMD standard sheets during construction. This work should be paid for under the appropriate pay item for relocating existing signs.
- Any sign or traffic control device that is struck or damaged by the Contractor or his/her construction equipment shall be replaced as soon as possible by the Contractor to ensure proper guidance for the motorists. This will be subsidiary to Item 502.

**GENERAL NOTES FOR WORK ZONE SIGNS**

- Contractor shall install and maintain signs in a straight and plumb condition and/or as directed by the Engineer.
- Wooden sign posts shall be painted white.
- Barricades shall NOT be used as sign supports.
- All signs shall be installed in accordance with the plans or as directed by the Engineer. Signs shall be used to regulate, warn, and guide the traveling public safely through the work zone.
- The Contractor may furnish either the sign design shown in the plans or in the "Standard Highway Sign Designs for Texas" (SHSD). The Engineer/Inspector may require the Contractor to furnish other work zone signs that are shown in the TMDOT but may have been omitted from the plans. Any variation in the plans shall be documented by written agreement between the Engineer and the Contractor's Responsible Person. All changes must be documented in writing before being implemented. This can include documenting the changes in the Inspector's TxDOT diary and having both the Inspector and Contractor initial and date the agreed upon changes.
- The Contractor shall furnish sign supports listed in the "Compliant Work Zone Traffic Control Device List" (CWZTC) for small roadside signs. Supports for temporary large roadside signs shall meet the requirements detailed on the Temporary Large Roadside Signs (TLRS) standard sheets. The Contractor shall install the sign support in accordance with the manufacturer's recommendations. If there is a question regarding installation procedures, the Contractor shall furnish the Engineer a copy of the manufacturer's installation recommendations so the Engineer can verify the correct procedures are being followed.
- The Contractor is responsible for installing signs on approved supports and replacing signs with damaged or cracked substrates and/or damaged or marred reflective sheeting as directed by the Engineer/Inspector.
- Identification markings may be shown only on the back of the sign substrate. The maximum height of letters and/or company logos used for identification shall be 1 inch.
- The Contractor shall replace damaged wood posts. New or damaged wood sign posts shall not be spliced.

- DURATION OF WORK** (as defined by the "Texas Manual on Uniform Traffic Control Devices" Part 6)
- The types of sign supports, sign mounting height, the size of signs, and the type of sign substrates can vary based on the type of work being performed. The Engineer is responsible for selecting the appropriate size sign for the type of work being performed. The Contractor is responsible for ensuring the sign support, sign mounting height and substrate meets manufacturer's recommendations in regard to crashworthiness and duration of work requirements.
  - Long-term stationary - work that occupies a location more than 3 days.
  - Intermediate-term stationary - work that occupies a location more than one daylight period up to 3 days, or nighttime work lasting more than one hour.
  - Short-term stationary - daytime work that occupies a location for more than 1 hour in a single daylight period.
  - Short, duration - work that occupies a location up to 1 hour.
  - Mobile - work that moves continuously or intermittently (stopping for up to approximately 15 minutes.)

- SIGN MOUNTING HEIGHT**
- The bottom of Long-term/Intermediate-term signs shall be at least 7 feet, but not more than 9 feet, above the paved surface, except as shown for supplemental plaques mounted below other signs.
  - The bottom of Short-term/Short Duration signs shall be a minimum of 1 foot above the pavement surface but no more than 2 feet above the ground.
  - Long-term/Intermediate-term Signs may be used in lieu of Short-term/Short Duration signing.
  - Short-term/Short Duration signs shall be used only during daylight and shall be removed at the end of the workday or raised to appropriate Long-term/Intermediate sign height.
  - Regulatory signs shall be mounted at least 7 feet, but not more than 9 feet, above the paved surface regardless of work duration.

- SIZE OF SIGNS**
- The Contractor shall furnish the sign sizes shown on BC (2) unless otherwise shown in the plans or as directed by the Engineer.
- SIGN SUBSTRATES**
- The Contractor shall ensure the sign substrate is installed in accordance with the manufacturer's recommendations for the type of sign support that is being used. The CWZTC lists each substrate that can be used on the different types and models of sign supports.
  - "Mesh" type materials are NOT an approved sign substrate, regardless of the tightness of the weave.
  - All wooden individual sign panels fabricated from 2 or more pieces shall have one or more plywood cleat, 1/2" thick by 6" wide, fastened to the back of the sign and extending fully across the sign. The cleat shall be attached to the back of the sign using wood screws that do not penetrate the face of the sign panel. The screws shall be placed on both sides of the splice and spaced at 6" centers. The Engineer may approve other methods of splicing the sign face.

- REFLECTIVE SHEETING**
- All signs shall be retroreflective and constructed of sheeting meeting the color and retro-reflectivity requirements of DMS-8300 for rigid signs or DMS-8310 for roll-up signs. The web address for DMS specifications is shown on BC(11).
  - White sheeting, meeting the requirements of DMS-8300 Type A, shall be used for signs with a white background.
  - Orange sheeting, meeting the requirements of DMS-8300 Type B<sub>1</sub> or Type C<sub>1</sub>, shall be used for rigid signs with orange backgrounds.

- SIGN LETTERS**
- All sign letters and numbers shall be clear, and open rounded type uppercase alphabet letters as approved by the Federal Highway Administration (FHWA) and published in the "Standard Highway Sign Design for Texas" manual. Signs, letters and numbers shall be of first class workmanship in accordance with Department Standards and Specifications.

- REMOVING OR COVERING**
- When sign messages may be confusing or do not apply, the signs shall be removed or completely covered.
  - Long-term stationary or intermediate stationary signs installed on square metal tubing may be turned away from traffic 90 degrees when the sign message is not applicable. This technique may not be used for signs installed in the median of divided highways or near any intersections where the sign may be seen from approaching traffic.
  - Signs installed on wooden skids shall not be turned at 90 degree angles to the roadway. These signs should be removed or completely covered when not required.
  - When signs are covered, the material used shall be opaque, such as heavy mil black plastic, or other materials which will cover the entire sign face and maintain their opaque properties under automobile headlights at night, without damaging the sign sheeting.
  - Burlap shall NOT be used to cover signs.
  - Duct tape or other adhesive material shall NOT be affixed to a sign face.
  - Signs and anchor stubs shall be removed and holes backfilled upon completion of work.

- SIGN SUPPORT WEIGHTS**
- Where sign supports require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand should be used.
  - The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight.
  - Rock, concrete, iron, steel or other solid objects shall not be permitted for use as sign support weights.
  - Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs.
  - Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as fire inner tubes) shall NOT be used.
  - Rubber ballasts designed for channelizing devices should not be used for ballast on portable sign supports. Sign supports designed and manufactured with rubber bases may be used when shown on the CWZTC list.
  - Sandbags shall only be placed along or laid over the base supports of the traffic control device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners. Sandbags shall be placed along the length of the skids to weigh down the sign support.
  - Sandbags shall NOT be placed under the skid and shall not be used to level sign supports placed on slopes.

- FLAGS ON SIGNS**
- Flags may be used to draw attention to warning signs. When used, the flag shall be 16 inches square or larger and shall be orange or fluorescent red-orange in color. Flags shall not be allowed to cover any portion of the sign face.

SHEET 4 OF 12

**BARRICADE AND CONSTRUCTION TEMPORARY SIGN NOTES**

**BC (4) - 21**

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|           | 7-13          | 5-21 |       |     |         |        | 62        |    |       |

NAME: Randy P. Janak PE  
 DATE: 2/24/2026

**CITY OF PORT LAVACA**  
 TEXAS

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 TEL: (361) 570-7500 TXSURV FIRM #100576-00 TXENG FIRM #10283

**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

BC (4) - 21

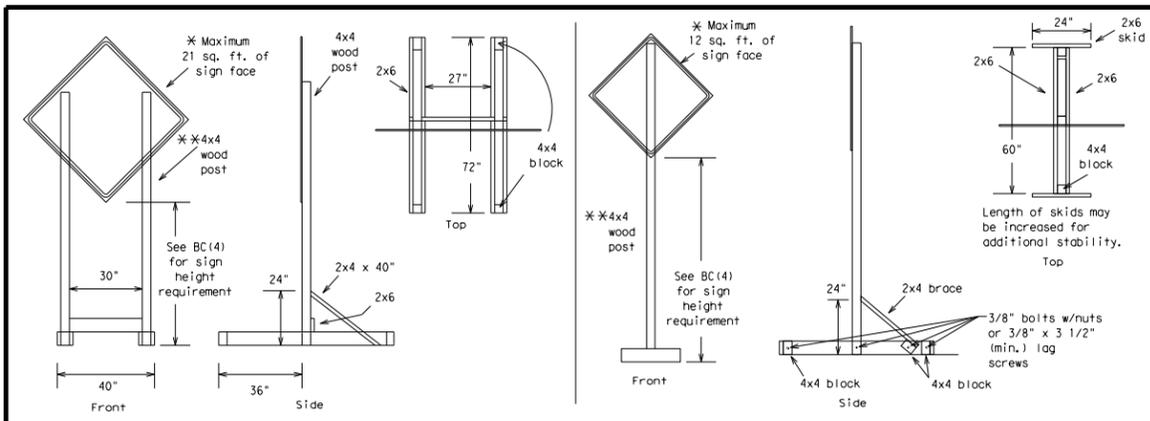
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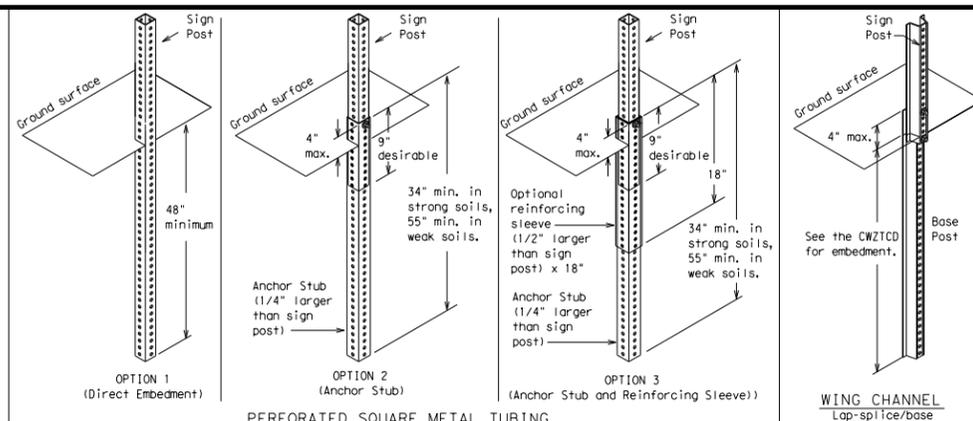
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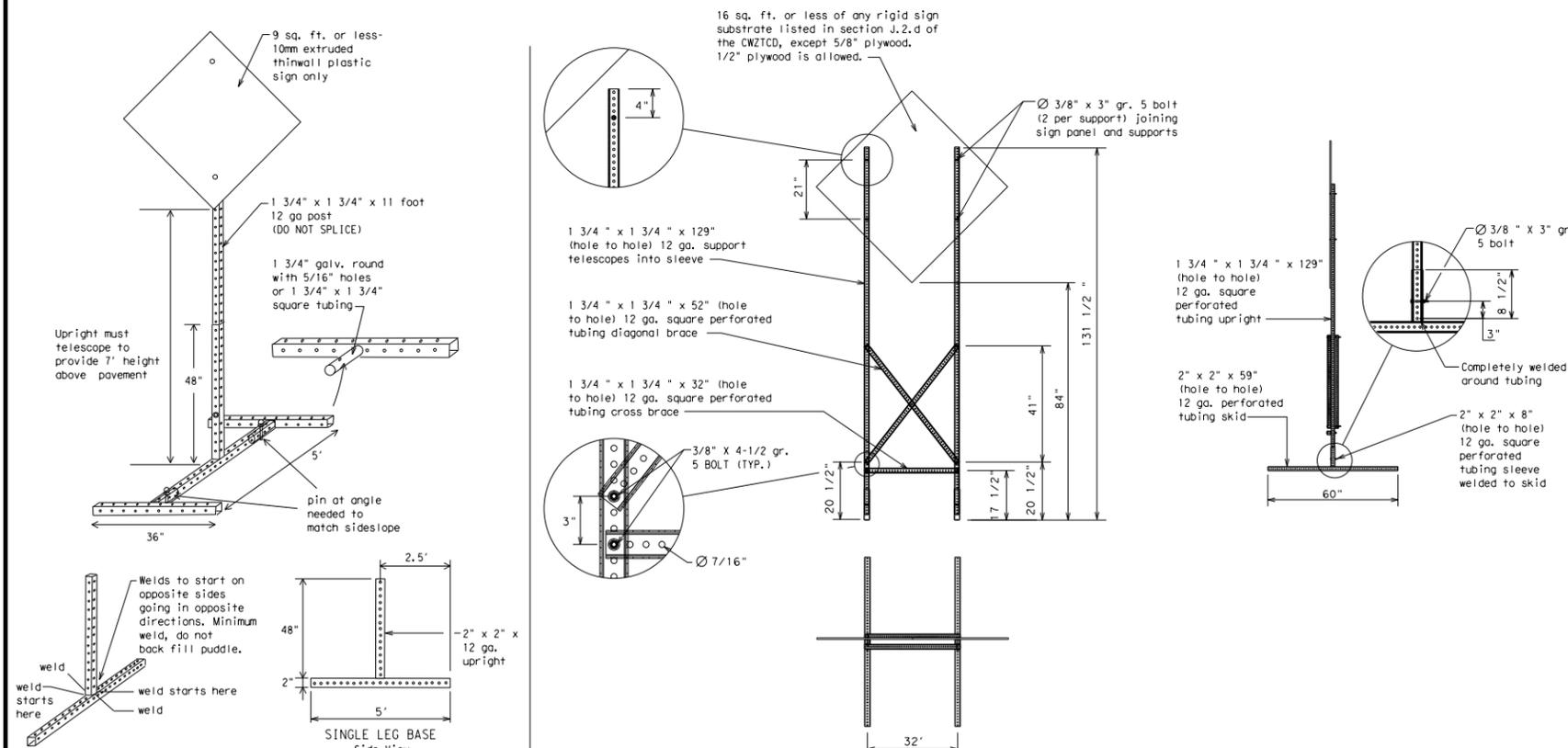
**SKID MOUNTED WOOD SIGN SUPPORTS**

\* LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS



**GROUND MOUNTED SIGN SUPPORTS**

Refer to the CWZTCD and the manufacturer's installation procedure for each type sign support. The maximum sign square footage shall adhere to the manufacturer's recommendation. Two post installations can be used for larger signs.



**SKID MOUNTED PERFORATED SQUARE STEEL TUBING SIGN SUPPORTS**

\* LONG/INTERMEDIATE TERM STATIONARY - PORTABLE SKID MOUNTED SIGN SUPPORTS

**WEDGE ANCHORS**

Both steel and plastic Wedge Anchor Systems as shown on the SMD Standard Sheets may be used as temporary sign supports for signs up to 10 square feet of sign face. They may be set in concrete or in sturdy soils if approved by the Engineer. (See web address for "Traffic Engineering Standard Sheets" on BC(1)).

**OTHER DESIGNS**

MORE DETAILS OF APPROVED LONG/INTERMEDIATE AND SHORT TERM SUPPORTS CAN BE FOUND ON THE CWZTCD LIST. SEE BC(1) FOR WEBSITE LOCATION.

**GENERAL NOTES**

1. Nails may be used in the assembly of wooden sign supports, but 3/8" bolts with nuts or 3/8" x 3 1/2" lag screws must be used on every joint for final connection.
  2. No more than 2 sign posts shall be placed within a 7 ft. circle, except for specific materials noted on the CWZTCD List.
  3. When project is completed, all sign supports and foundations shall be removed from the project site. This will be considered subsidiary to Item 502.
- \* See BC(4) for definition of "Work Duration."  
 \*\* Wood sign posts MUST be one piece. Splicing will NOT be allowed. Posts shall be painted white.  
 See the CWZTCD for the type of sign substrate that can be used for each approved sign support.

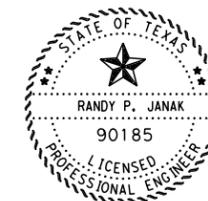
SHEET 5 OF 12

**Texas Department of Transportation** Traffic Safety Division Standard

**BARRICADE AND CONSTRUCTION TYPICAL SIGN SUPPORT**

**BC (5) - 21**

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| 9-07 8-14             | DIST      | COUNTY    |           | SHEET NO. |
| 7-13 5-21             |           |           |           | 63        |



NAME: Randy P. Janak PE  
 DATE: 2/24/2026



**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

BC (5) - 21

SCALE: N. T. S. SHEET 5 OF 12

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| PROJECT NO. | 25-015-03 | SHEET NO. | 63 |
| REVISIONS   |           |           |    |
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FILE:

WHEN NOT IN USE, REMOVE THE PCMS FROM THE RIGHT-OF-WAY OR PLACE THE PCMS BEHIND BARRIER OR GUARDRAIL WITH SIGN PANEL TURNED PARALLEL TO TRAFFIC

PORTABLE CHANGEABLE MESSAGE SIGNS

- The Engineer/Inspector shall approve all messages used on portable changeable message signs (PCMS).
- Messages on PCMS should contain no more than 8 words (about four to eight characters per word), not including simple words such as "TO," "FOR," "AT," etc.
- Messages should consist of a single phase, or two phases that alternate. Three-phase messages are not allowed. Each phase of the message should convey a single thought, and must be understood by itself.
- Use the word "EXIT" to refer to an exit ramp on a freeway; i.e., "EXIT CLOSED." Do not use the term "RAMP."
- Always use the route or interstate designation (IH, US, SH, FM) along with the number when referring to a roadway.
- When in use, the bottom of a stationary PCMS message panel should be a minimum 7 feet above the roadway, where possible.
- The message term "WEEKEND" should be used only if the work is to start on Saturday morning and end by Sunday evening at midnight. Actual days and hours of work should be displayed on the PCMS if work is to begin on Friday evening and/or continue into Monday morning.
- The Engineer/Inspector may select one of two options which are available for displaying a two-phase message on a PCMS. Each phase may be displayed for either four seconds each or for three seconds each.
- Do not "flash" messages or words included in a message. The message should be steady burn or continuous while displayed.
- Do not present redundant information on a two-phase message; i.e., keeping two lines of the message the same and changing the third line.
- Do not use the word "Danger" in message.
- Do not display the message "LANES SHIFT LEFT" or "LANES SHIFT RIGHT" on a PCMS. Drivers do not understand the message.
- Do not display messages that scroll horizontally or vertically across the face of the sign.
- The following table lists abbreviated words and two-word phrases that are acceptable for use on a PCMS. Both words in a phrase must be displayed together. Words or phrases not on this list should not be abbreviated, unless shown in the T MUTCD.
- PCMS character height should be at least 18 inches for trailer mounted units. They should be visible from at least 1/2 (.5) mile and the text should be legible from at least 600 feet at night and 800 feet in daylight. Truck mounted units must have a character height of 10 inches and must be legible from at least 400 feet.
- Each line of text should be centered on the message board rather than left or right justified.
- If disabled, the PCMS should default to an illegible display that will not alarm motorists and will only be used to alert workers that the PCMS has malfunctioned. A pattern such as a series of horizontal solid bars is appropriate.

| WORD OR PHRASE         | ABBREVIATION | WORD OR PHRASE | ABBREVIATION |
|------------------------|--------------|----------------|--------------|
| Access Road            | ACCS RD      | Major          | MAJ          |
| Alternate              | ALT          | Miles          | MI           |
| Avenue                 | AVE          | Miles Per Hour | MPH          |
| Best Route             | BEST RTE     | Minor          | MNR          |
| Boulevard              | BLVD         | Monday         | MON          |
| Bridge                 | BRDG         | Normal         | NORM         |
| Canopy                 | CANT         | North          | N            |
| Center                 | CTR          | Northbound     | (route) N    |
| Construction Ahead     | CONST AHD    | Parking        | PKING        |
| CROSSING               | XING         | Road           | RD           |
| Detour Route           | DETOUR RTE   | Right Lane     | RT LN        |
| Do Not                 | DONT         | Saturday       | SAT          |
| East                   | E            | Service Road   | SERV RD      |
| Eastbound              | (route) E    | Shoulder       | SHLDR        |
| Emergency              | EMER         | Slippery       | SLIP         |
| Emergency Vehicle      | EMER VEH     | South          | S            |
| Entrance, Enter        | ENT          | Southbound     | (route) S    |
| Express Lane           | EXP LN       | Speed          | SPD          |
| Expressway             | EXPWY        | Street         | ST           |
| XXXX Feet              | XXXX FT      | Sunday         | SUN          |
| Fog Ahead              | FOG AHD      | Telephone      | PHONE        |
| Freeway                | FRWY, FWY    | Temporary      | TEMP         |
| Freeway Blocked        | FRWY BLKD    | Thursday       | THURS        |
| Friday                 | FRI          | To Downtown    | TO DWN TN    |
| Hazardous Driving      | HAZ DRIVING  | Traffic        | TRAF         |
| Hazardous Material     | HAZMAT       | Travelers      | TRVLRS       |
| High-Occupancy Vehicle | HOV          | Tuesday        | TUES         |
| Hour (s)               | HR, HRS      | Time Minutes   | TIME MIN     |
| Information            | INFO         | Upper Level    | UPR LEVEL    |
| IT IS                  | ITS          | Vehicles (s)   | VEH, VEHS    |
| Junction               | JCT          | Warning        | WARN         |
| Left                   | LFT          | Wednesday      | WED          |
| Left Lane              | LFT LN       | Weight Limit   | WT LIMIT     |
| Lane Closed            | LN CLOSED    | West           | W            |
| Lower Level            | LWR LEVEL    | Westbound      | (route) W    |
| Maintenance            | MAINT        | West Pavement  | WET PWMT     |
|                        |              | Will Not       | WONT         |

Roadway designation = IH-number, US-number, SH-number, FM-number

RECOMMENDED PHASES AND FORMATS FOR PCMS MESSAGES DURING ROADWORK ACTIVITIES  
 (The Engineer may approve other messages not specifically covered here.)

Phase 1: Condition Lists

Road/Lane/Ramp Closure List

|                       |                          |
|-----------------------|--------------------------|
| FREEWAY CLOSED X MILE | FRONTAGE ROAD CLOSED     |
| ROAD CLOSED AT SH XXX | SHOULDER CLOSED XXX FT   |
| ROAD CLSD AT FM XXXX  | RIGHT LN CLOSED XXX FT   |
| RIGHT X LANES CLOSED  | RIGHT X LANES OPEN       |
| CENTER LANE CLOSED    | DAYTIME LANE CLOSURES    |
| NIGHT LANE CLOSURES   | I-XX SOUTH CLOSED        |
| VARIOUS LANES CLOSED  | EXIT XXX CLOSED X MILE   |
| EXIT CLOSED           | RIGHT LN TO BE CLOSED    |
| MALL DRIVEWAY CLOSED  | X LANES CLOSED TUE - FRI |
| XXXXXXXXX BLVD CLOSED |                          |

Other Condition List

|                          |                         |
|--------------------------|-------------------------|
| ROADWORK XXX FT          | ROAD REPAIRS XXXX FT    |
| FLAGGER XXXX FT          | LANE NARROWS XXXX FT    |
| RIGHT LN NARROWS XXXX FT | TWO-WAY TRAFFIC XX MILE |
| MERGING TRAFFIC XXXX FT  | CONST TRAFFIC XXX FT    |
| LOOSE GRAVEL XXXX FT     | UNEVEN LANES XXXX FT    |
| DETOUR X MILE            | ROUGH ROAD XXXX FT      |
| ROADWORK PAST SH XXXX    | ROADWORK NEXT FRI-SUN   |
| BUMP XXXX FT             | US XXX EXIT X MILES     |
| TRAFFIC SIGNAL XXXX FT   | LANES SHIFT *           |

\* LANES SHIFT in Phase 1 must be used with STAY IN LANE in Phase 2.

APPLICATION GUIDELINES

- Only 1 or 2 phases are to be used on a PCMS.
- The 1st phase (or both) should be selected from the "Road/Lane/Ramp Closure List" and the "Other Condition List".
- A 2nd phase can be selected from the "Action to Take/Effect on Travel", "Location", "General Warning", or "Advance Notice Phase Lists".
- A Location Phase is necessary only if a distance or location is not included in the first phase selected.
- If two PCMS are used in sequence, they must be separated by a minimum of 1000 ft. Each PCMS shall be limited to two phases, and should be understandable by themselves.
- For advance notice, when the current date is within seven days of the actual work date, calendar days should be replaced with days of the week. Advance notification should typically be for no more than one week prior to the work.

Phase 2: Possible Component Lists

Action to Take/Effect on Travel List

|                      |                      |
|----------------------|----------------------|
| MERGE RIGHT          | FORM X LANES RIGHT   |
| DETOUR NEXT X EXITS  | USE XXXXX RD EXIT    |
| USE EXIT XXX         | USE EXIT I-XX NORTH  |
| STAY ON US XXX SOUTH | USE I-XX E TO I-XX N |
| TRUCKS USE US XXX N  | WATCH FOR TRUCKS     |
| WATCH FOR TRUCKS     | EXPECT DELAYS        |
| EXPECT DELAYS        | PREPARE TO STOP      |
| REDUCE SPEED XXX FT  | END SHOULDER USE     |
| USE OTHER ROUTES     | WATCH FOR WORKERS    |
| STAY IN LANE *       |                      |

Location List

|                          |
|--------------------------|
| AT FM XXXX               |
| BEFORE RAILROAD CROSSING |
| NEXT X MILES             |
| PAST US XXX EXIT         |
| XXXXXXXXX TO XXXXXXXX    |
| US XXX TO FM XXXX        |

Warning List

|                       |
|-----------------------|
| SPEED LIMIT XX MPH    |
| MAXIMUM SPEED XX MPH  |
| MINIMUM SPEED XX MPH  |
| ADVISORY SPEED XX MPH |
| RIGHT LANE EXIT       |
| USE CAUTION           |
| DRIVE SAFELY          |
| DRIVE WITH CARE       |

\*\* Advance Notice List

|                       |
|-----------------------|
| TUE-FRI XX AM-X PM    |
| APR XX-XX X PM-X AM   |
| BEGINS MONDAY         |
| BEGINS MAY XX         |
| MAY X-X XX PM - XX AM |
| NEXT FRI-SUN          |
| XX AM TO XX PM        |
| NEXT TUE AUG XX       |
| TONIGHT XX PM-XX AM   |

\*\* See Application Guidelines Note 6.

WORDING ALTERNATIVES

- The words RIGHT, LEFT and ALL can be interchanged as appropriate.
- Roadway designations IH, US, SH, FM and LP can be interchanged as appropriate.
- EAST, WEST, NORTH and SOUTH (or abbreviations E, W, N and S) can be interchanged as appropriate.
- Highway names and numbers replaced as appropriate.
- ROAD, HIGHWAY and FREEWAY can be interchanged as needed.
- AHEAD may be used instead of distances if necessary.
- FT and MI, MILE and MILES interchanged as appropriate.
- AT, BEFORE and PAST interchanged as needed.
- Distances or AHEAD can be eliminated from the message if a location phase is used.

PCMS SIGNS WITHIN THE R.O.W. SHALL BE BEHIND GUARDRAIL OR CONCRETE BARRIER OR SHALL HAVE A MINIMUM OF FOUR (4) PLASTIC DRUMS PLACED PERPENDICULAR TO TRAFFIC ON THE UPSTREAM SIDE OF THE PCMS, WHEN EXPOSED TO ONE DIRECTION OF TRAFFIC. WHEN EXPOSED TO TWO WAY TRAFFIC, THE FOUR DRUMS SHOULD BE PLACED WITH ONE DRUM AT EACH OF THE FOUR CORNERS OF THE UNIT.

FULL MATRIX PCMS SIGNS

- When Full Matrix PCMS signs are used, the character height and legibility/visibility requirements shall be maintained as listed in Note 15 under "PORTABLE CHANGEABLE MESSAGE SIGNS" above.
- When symbol signs, such as the "Flagger Symbol" (CW20-7) are represented graphically on the Full Matrix PCMS sign and, with the approval of the Engineer, it shall maintain the legibility/visibility requirement listed above.
- When symbol signs are represented graphically on the Full Matrix PCMS, they shall only supplement the use of the static sign represented, and shall not substitute for, or replace that sign.
- A full matrix PCMS may be used to simulate a flashing arrow board provided it meets the visibility, flash rate and dimming requirements on BC(7), for the same size arrow.

SHEET 6 OF 12

Texas Department of Transportation  
 Traffic Safety Division Standard

**BARRICADE AND CONSTRUCTION PORTABLE CHANGEABLE MESSAGE SIGN (PCMS)**

**BC (6) - 21**

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| © TxDOT November 2002 | CONT      | SECT      | JOB       | HIGHWAY   |
| REVISIONS             |           |           |           |           |
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NAME: Randy P. Janak PE  
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**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

BC (6) - 21

SCALE: N. T. S. SHEET 6 OF 12

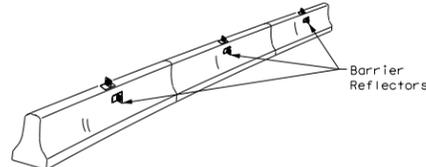
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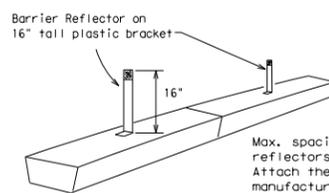
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- Barrier Reflectors shall be pre-qualified, and conform to the color and reflectivity requirements of DMS-8600. A list of prequalified Barrier Reflectors can be found at the Material Producer List web address shown on BC(1).
- Color of Barrier Reflectors shall be as specified in the TMUTCD. The cost of the reflectors shall be considered subsidiary to Item 512.



CONCRETE TRAFFIC BARRIER (CTB)



LOW PROFILE CONCRETE BARRIER (LPCB)

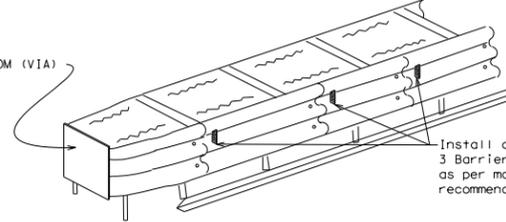
**LOW PROFILE CONCRETE BARRIER (LPCB) USED IN WORK ZONES**

LPCB is approved for use in work zone locations, where the posted speed is 45mph, or less. See Roadway Standard Sheet LPCB.

Max. spacing of barrier reflectors is 20 feet. Attach the delineators as per manufacturer's recommendations.

- Where traffic is on one side of the CTB, two (2) Barrier Reflectors shall be mounted in approximately the midsection of each section of CTB. An alternate mounting location is uniformly spaced at one end of each CTB. This will allow for attachment of a barrier grapple without damaging the reflector. The Barrier Reflector mounted on the side of the CTB shall be located directly below the reflector mounted on top of the barrier, as shown in the detail above.
- Where CTB separates two-way traffic, three barrier reflectors shall be mounted on each section of CTB. The reflector unit on top shall have two yellow reflective faces (Bi-Directional) while the reflectors on each side of the barrier shall have one yellow reflective face, as shown in the detail above.
- When CTB separates traffic traveling in the same direction, no barrier reflectors will be required on top of the CTB.
- Barrier Reflector units shall be yellow or white in color to match the edgeline being supplemented.
- Maximum spacing of Barrier Reflectors is forty (40) feet.
- Pavement markers or temporary flexible-reflective roadway marker tabs shall NOT be used as CTB delineation.
- Attachment of Barrier Reflectors to CTB shall be per manufacturer's recommendations.
- Missing or damaged Barrier Reflectors shall be replaced as directed by the Engineer.
- Single slope barriers shall be delineated as shown on the above detail.

See D & OM (VIA)



DELINEATION OF END TREATMENTS

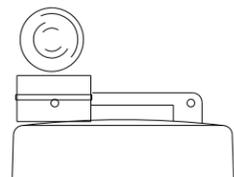
**END TREATMENTS FOR CTB'S USED IN WORK ZONES**

End treatments used on CTB's in work zones shall meet the appropriate crashworthy standards as defined in the Manual for Assessing Safety Hardware (MASH). Refer to the CWZTCD List for approved end treatments and manufacturers.

**BARRIER REFLECTORS FOR CONCRETE TRAFFIC BARRIER AND ATTENUATORS**

**WARNING LIGHTS**

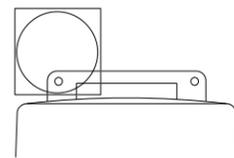
- Warning lights shall meet the requirements of the TMUTCD.
- Warning lights shall NOT be installed on barricades.
- Type A-Low Intensity Flashing Warning Lights are commonly used with drums. They are intended to warn of or mark a potentially hazardous area. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "FL". The Type A Warning Lights shall not be used with signs manufactured with Type B<sub>FL</sub> or C<sub>FL</sub> Sheeting meeting the requirements of Departmental Material Specification DMS-8300.
- Type-C and Type D 360 degree Steady Burn Lights are intended to be used in a series for delineation to supplement other traffic control devices. Their use shall be as indicated on this sheet and/or other sheets of the plans by the designation "SB".
- The Engineer/Inspector or the plans shall specify the location and type of warning lights to be installed on the traffic control devices.
- When required by the Engineer, the Contractor shall furnish a copy of the warning lights certification. The warning light manufacturer will certify the warning lights meet the requirements of the latest ILE Purchase Specifications for Flashing and Steady-Burn Warning Lights.
- When used to delineate curves, Type-C and Type D Steady Burn Lights should only be placed on the outside of the curve, not the inside.
- The location of warning lights and warning reflectors on drums shall be as shown elsewhere in the plans.



Type C Warning Light or approved substitute mounted on a drum adjacent to the travel way.

**WARNING LIGHTS MOUNTED ON PLASTIC DRUMS**

- Type A flashing warning lights are intended to warn drivers that they are approaching or are in a potentially hazardous area.
- Type A random flashing warning lights are not intended for delineation and shall not be used in a series.
- A series of sequential flashing warning lights placed on channelizing devices to form a merging taper may be used for delineation. If used, the successive flashing of the sequential warning lights should occur from the beginning of the taper to the end of the merging taper in order to identify the desired vehicle path. The rate of flashing for each light shall be 65 flashes per minute, plus or minus 10 flashes.
- Type C and D steady-burn warning lights are intended to be used in a series to delineate the edge of the travel lane on detours, on lane changes, on lane closures, and on other similar conditions.
- Type A, Type C and Type D warning lights shall be installed at locations as detailed on other sheets in the plans.
- Warning lights shall not be installed on a drum that has a sign, chevron or vertical panel.
- The maximum spacing for warning lights on drums should be identical to the channelizing device spacing.



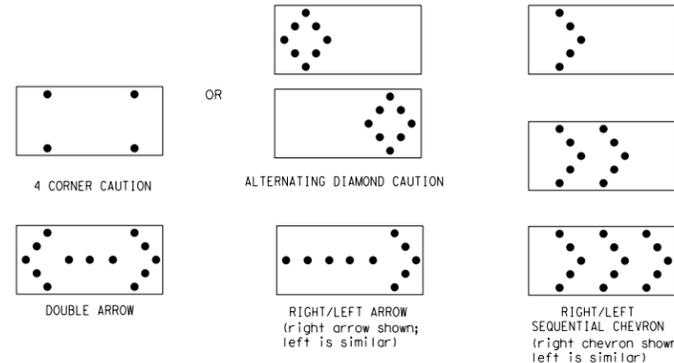
Warning reflector may be round or square. Must have a yellow reflective surface area of at least 30 square inches

**WARNING REFLECTORS MOUNTED ON PLASTIC DRUMS AS A SUBSTITUTE FOR TYPE C (STEADY BURN) WARNING LIGHTS**

- A warning reflector or approved substitute may be mounted on a plastic drum as a substitute for a Type C, steady burn warning light at the discretion of the Contractor unless otherwise noted in the plans.
- The warning reflector shall be yellow in color and shall be manufactured using a sign substrate approved for use with plastic drums listed on the CWZTCD.
- The warning reflector shall have a minimum retroreflective surface area (one-side) of 30 square inches.
- Round reflectors shall be fully reflectorized, including the area where attached to the drum.
- Square substrates must have a minimum of 30 square inches of reflectorized sheeting. They do not have to be reflectorized where it attaches to the drum.
- The side of the warning reflector facing approaching traffic shall have sheeting meeting the color and retroreflectivity requirements for DMS 8300-Type B or Type C.
- When used near two-way traffic, both sides of the warning reflector shall be reflectorized.
- The warning reflector should be mounted on the side of the handle nearest approaching traffic.
- The maximum spacing for warning reflectors should be identical to the channelizing device spacing requirements.

Arrow Boards may be located behind channelizing devices in place for a shoulder taper or merging taper, otherwise they shall be delineated with four (4) channelizing devices placed perpendicular to traffic on the upstream side of traffic.

- The Flashing Arrow Board should be used for all lane closures on multi-lane roadways, or slow moving maintenance or construction activities on the travel lanes.
- Flashing Arrow Boards should not be used on two-lane, two-way roadways, detours, diversions or work on shoulders unless the "CAUTION" display (see detail below) is used.
- The Engineer/Inspector shall choose all appropriate signs, barricades and/or other traffic control devices that should be used in conjunction with the Flashing Arrow Board.
- The Flashing Arrow Board should be able to display the following symbols:



- The "CAUTION" display consists of four corner lamps flashing simultaneously, or the Alternating Diamond Caution mode as shown.
- The straight line caution display is NOT ALLOWED.
- The Flashing Arrow Board shall be capable of minimum 50 percent dimming from rated lamp voltage. The flashing rate of the lamps shall not be less than 25 nor more than 40 flashes per minute.
- Minimum lamp "on time" shall be approximately 50 percent for the flashing arrow and equal intervals of 25 percent for each sequential phase of the flashing chevron.
- The sequential arrow display is NOT ALLOWED.
- The flashing arrow display is the TxDOT standard; however, the sequential chevron display may be used during daylight operations.
- The Flashing Arrow Board shall be mounted on a vehicle, trailer or other suitable support.
- A Flashing Arrow Board SHALL NOT BE USED to laterally shift traffic.
- A full matrix PCMS may be used to simulate a Flashing Arrow Board provided it meets visibility, flash rate and dimming requirements on this sheet for the same size arrow.
- Minimum mounting height of trailer mounted Arrow Boards should be 7 feet from roadway to bottom of panel.

| REQUIREMENTS |              |                               |                             |
|--------------|--------------|-------------------------------|-----------------------------|
| TYPE         | MINIMUM SIZE | MINIMUM NUMBER OF PANEL LAMPS | MINIMUM VISIBILITY DISTANCE |
| B            | 30 x 60      | 13                            | 3/4 mile                    |
| C            | 48 x 96      | 15                            | 1 mile                      |

**ATTENTION**  
 Flashing Arrow Boards shall be equipped with automatic dimming devices.

WHEN NOT IN USE, REMOVE THE ARROW BOARD FROM THE RIGHT-OF-WAY OR PLACE THE ARROW BOARD BEHIND CONCRETE TRAFFIC BARRIER OR GUARDRAIL.

**FLASHING ARROW BOARDS**

SHEET 7 OF 12

**TRUCK-MOUNTED ATTENUATORS**

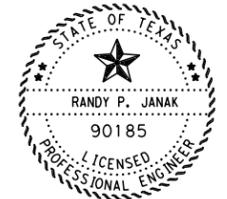
- Truck-mounted attenuators (TMA) used on TxDOT facilities must meet the requirements outlined in the Manual for Assessing Safety Hardware (MASH).
- Refer to the CWZTCD for the requirements of Level 2 or Level 3 TMAs.
- Refer to the CWZTCD for a list of approved TMAs.
- TMAs are required on freeways unless otherwise noted in the plans.
- A TMA should be used anytime that it can be positioned 30 to 100 feet in advance of the area of crew exposure without adversely affecting the work performance.
- The only reason a TMA should not be required is when a work area is spread down the roadway and the work crew is an extended distance from the TMA.

Texas Department of Transportation  
 Traffic Safety Division Standard

**BARRICADE AND CONSTRUCTION ARROW PANEL, REFLECTORS, WARNING LIGHTS & ATTENUATOR**

**BC (7) -21**

|                       |           |            |           |            |
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| 7-13 5-21             |           |            |           |            |



NAME: Randy P. Janak PE  
 DATE: 2/24/2026



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**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

BC (7) -21

SCALE: N. T. S. SHEET 7 OF 12

|             |           |           |    |
|-------------|-----------|-----------|----|
| PROJECT NO. | 25-015-03 | SHEET NO. | 65 |
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**GENERAL NOTES**

- For long term stationary work zones on freeways, drums shall be used as the primary channelizing device.
- For intermediate term stationary work zones on freeways, drums should be used as the primary channelizing device but may be replaced in tangent sections by vertical panels, or 42" two-piece cones. In tangent sections, one-piece cones may be used with the approval of the Engineer but only if personnel are present on the project at all times to maintain the cones in proper position and location.
- For short term stationary work zones on freeways, drums are the preferred channelizing device but may be replaced in tapers, transitions and tangent sections by vertical panels, two-piece cones or one-piece cones as approved by the Engineer.
- Drums and all related items shall comply with the requirements of the current version of the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD) and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
- Drums, bases, and related materials shall exhibit good workmanship and shall be free from objectionable marks or defects that would adversely affect their appearance or serviceability.
- The Contractor shall have a maximum of 24 hours to replace any plastic drums identified for replacement by the Engineer/Inspector. The replacement device must be an approved device.

**GENERAL DESIGN REQUIREMENTS**

Pre-qualified plastic drums shall meet the following requirements:

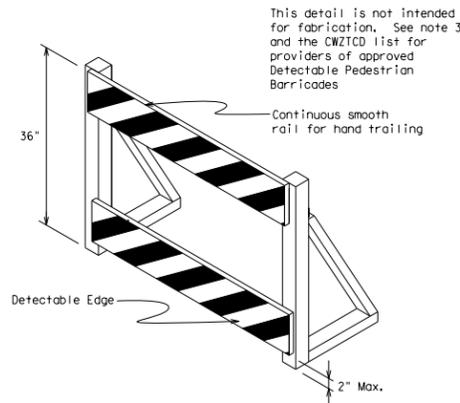
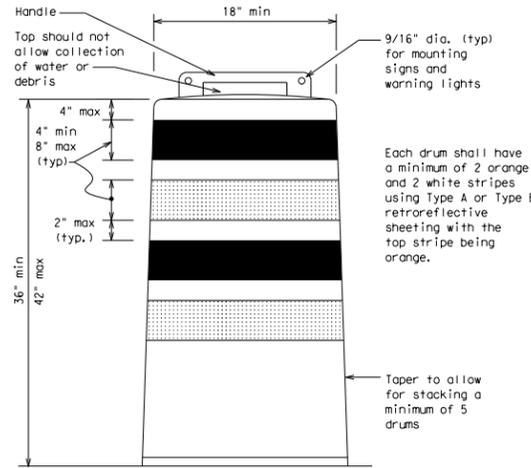
- Plastic drums shall be a two-piece design; the "body" of the drum shall be the top portion and the "base" shall be the bottom.
- The body and base shall lock together in such a manner that the body separates from the base when impacted by a vehicle traveling at a speed of 20 MPH or greater but prevents accidental separation due to normal handling and/or air turbulence created by passing vehicles.
- Plastic drums shall be constructed of lightweight flexible, and deformable materials. The Contractor shall NOT use metal drums or single piece plastic drums as channelization devices or sign supports.
- Drums shall present a profile that is a minimum of 18 inches in width at the 36 inch height when viewed from any direction. The height of drum unit (body installed on base) shall be a minimum of 36 inches and a maximum of 42 inches.
- The top of the drum shall have a built-in handle for easy pickup and shall be designed to drain water and not collect debris. The handle shall have a minimum of two widely spaced 9/16 inch diameter holes to allow attachment of a warning light, warning reflector unit or approved compliant sign.
- The exterior of the drum body shall have a minimum of four alternating orange and white retroreflective circumferential stripes not less than 4 inches nor greater than 8 inches in width. Any non-reflectORIZED space between any two adjacent stripes shall not exceed 2 inches in width.
- Bases shall have a maximum width of 36 inches, a maximum height of 4 inches, and a minimum of two footholds of sufficient size to allow base to be held down while separating the drum body from the base.
- Plastic drums shall be constructed of ultra-violet stabilized, orange, high-density polyethylene (HDPE) or other approved material.
- Drum body shall have a maximum unballasted weight of 11 lbs.
- Drum and base shall be marked with manufacturer's name and model number.

**RETROREFLECTIVE SHEETING**

- The stripes used on drums shall be constructed of sheeting meeting the color and retroreflectivity requirements of Departmental Materials Specification DMS-8300, "Sign Face Materials." Type A or Type B reflective sheeting shall be supplied unless otherwise specified in the plans.
- The sheeting shall be suitable for use on and shall adhere to the drum surface such that, upon vehicular impact, the sheeting shall remain adhered in-place and exhibit no delaminating, cracking, or loss of retroreflectivity other than that loss due to abrasion of the sheeting surface.

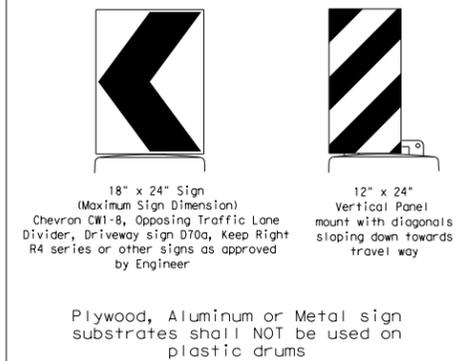
**BALLAST**

- Unballasted bases shall be large enough to hold up to 50 lbs. of sand. This base, when filled with the ballast material, should weigh between 35 lbs (minimum) and 50 lbs (maximum). The ballast may be sand in one to three sandbags separate from the base, sand in a sand-filled plastic base, or other ballasting devices as approved by the Engineer. Stacking of sandbags will be allowed, however height of sandbags above pavement surface may not exceed 12 inches.
- Bases with built-in ballast shall weigh between 40 lbs. and 50 lbs. Built-in ballast can be constructed of an integral crumb rubber base or a solid rubber base.
- Recycled truck tire sidewalls may be used for ballast on drums approved for this type of ballast on the CWZTCD list.
- The ballast shall not be heavy objects, water, or any material that would become hazardous to motorists, pedestrians, or workers when the drum is struck by a vehicle.
- When used in regions susceptible to freezing, drums shall have drainage holes in the bottoms so that water will not collect and freeze becoming a hazard when struck by a vehicle.
- Ballast shall not be placed on top of drums.
- Adhesives may be used to secure base of drums to pavement.



**DETECTABLE PEDESTRIAN BARRICADES**

- When existing pedestrian facilities are disrupted, closed, or relocated in a TTC zone, the temporary facilities shall be detectable and include accessibility features consistent with the features present in the existing pedestrian facility. Refer to WZ(BTS-2) for Pedestrian Control requirements for Sidewalk Diversions, Sidewalk Detours and Crosswalk Closures.
- Where pedestrians with visual disabilities normally use the closed sidewalk, a Detectable Pedestrian Barricade shall be placed across the full width of the closed sidewalk instead of a Type 3 Barricade.
- Detectable pedestrian barricades similar to the one pictured above, longitudinal channelizing devices, some concrete barriers, and wood or chain link fencing with a continuous detectable edging can satisfactorily delineate a pedestrian path.
- Tape, rope, or plastic chain strung between devices are not detectable, do not comply with the design standards in the "Americans with Disabilities Act Accessibility Guidelines (ADAAG)" and should not be used as a control for pedestrian movements.
- Warning lights shall not be attached to detectable pedestrian barricades.
- Detectable pedestrian barricades should use 8" nominal barricade rails as shown on BC(10) provided that the top rail provides a smooth continuous rail suitable for hand trailing with no splinters, burrs, or sharp edges.



Plywood, Aluminum or Metal sign substrates shall NOT be used on plastic drums

**SIGNS, CHEVRONS, AND VERTICAL PANELS MOUNTED ON PLASTIC DRUMS**

- Signs used on plastic drums shall be manufactured using substrates listed on the CWZTCD.
- Chevrons and other work zone signs with an orange background shall be manufactured with Type B<sub>1</sub> or Type C<sub>1</sub> Orange sheeting meeting the color and retroreflectivity requirements of DMS-8300, "Sign Face Material," unless otherwise specified in the plans.
- Vertical Panels shall be manufactured with orange and white sheeting meeting the requirements of DMS-8300 Type A or Type B. Diagonal stripes on Vertical Panels shall slope down toward the intended traveled lane.
- Other sign messages (text or symbolic) may be used as approved by the Engineer. Sign dimensions shall not exceed 18 inches in width or 24 inches in height, except for the R9 series signs discussed in note 8 below.
- Signs shall be installed using a 1/2 inch bolt (nominal) and nut, two washers, and one locking washer for each connection.
- Mounting bolts and nuts shall be fully engaged and adequately torqued. Bolts should not extend more than 1/2 inch beyond nuts.
- Chevrons may be placed on drums on the outside of curves, on merging tapers or on shifting tapers. When used in these locations, they may be placed on every drum or spaced not more than an every third drum. A minimum of three (3) should be used at each location called for in the plans.
- R9-9, R9-10, R9-11 and R9-11a Sidewalk Closed signs which are 24 inches wide may be mounted on plastic drums, with approval of the Engineer.

SHEET 8 OF 12

|  |               |      |              |
|--|---------------|------|--------------|
|  |               |      |              |
| <b>BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES</b> |               |      |              |
| <b>BC (8) - 21</b>                                     |               |      |              |
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| 9-07   | 5-21          | DIST | COUNTY       |
| 7-13   |               |      | SHEET NO. 66 |

STATE OF TEXAS  
 RANDY P. JANAK  
 90185  
 LICENSED PROFESSIONAL ENGINEER

NAME: Randy P. Janak PE  
 DATE: 2/24/2026

CITY OF PORT LAVACA  
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**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

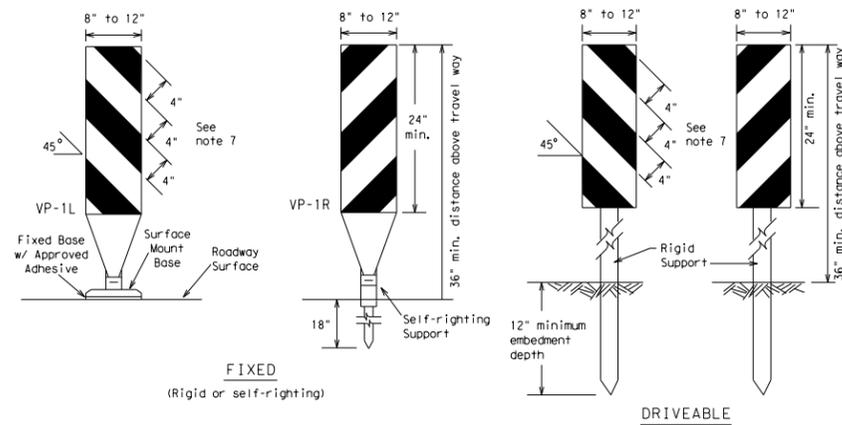
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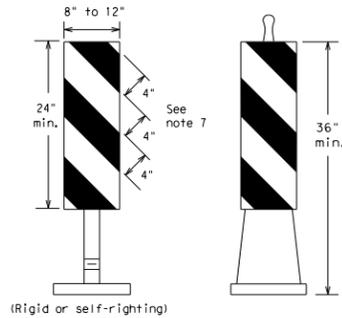
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**FIXED**  
(Rigid or self-righting)

**DRIVEABLE**

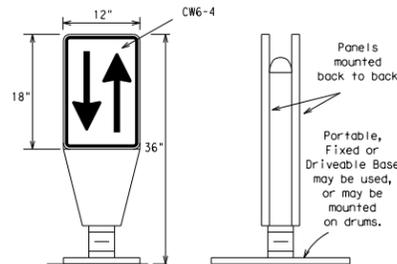


(Rigid or self-righting)

**PORTABLE**

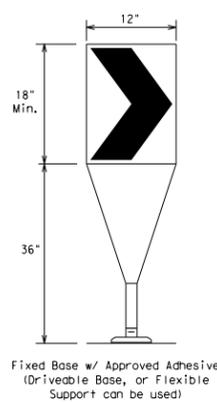
**VERTICAL PANELS (VPs)**

- Vertical Panels (VP's) are normally used to channelize traffic or divide opposing lanes of traffic.
- VP's may be used in daytime or nighttime situations. They may be used at the edge of shoulder drop-offs and other areas such as lane transitions where positive daytime and nighttime delineation is required. The Engineer/Inspector shall refer to the Roadway Design Manual for additional requirements on the use VP's for drop-offs.
- VP's should be mounted back to back if used at the edge of cuts adjacent to two-way two lane roadways. Stripes are to be reflective orange and reflective white and should always slope downward toward the travel lane.
- VP's used on expressways and freeways or other high speed roadways, may have more than 270 square inches of retroreflective area facing traffic.
- Self-righting supports are available with portable base. See "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
- Sheeting for the VP's shall be retroreflective Type A or Type B conforming to Departmental Material Specification DMS-8300, unless noted otherwise.
- Where the height of reflective material on the vertical panel is 36 inches or greater, a panel stripe of 6 inches shall be used.



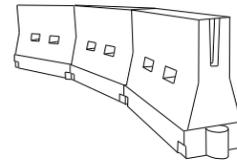
**OPPOSING TRAFFIC LANE DIVIDERS (OTLD)**

- Opposing Traffic Lane Dividers (OTLD) are delineation devices designed to convert a normal one-way roadway section to two-way operation. OTLD's are used on temporary centerlines. The upward and downward arrows on the sign's face indicate the direction of traffic on either side of the divider. The base is secured to the pavement with an adhesive or rubber weight to minimize movement caused by a vehicle impact or wind gust.
- The OTLD may be used in combination with 42" cones or VPs.
- Spacing between the OTLD shall not exceed 500 feet. 42" cones or VPs placed between the OTLD's should not exceed 100 foot spacing.
- The OTLD shall be orange with a black non-reflective legend. Sheeting for the OTLD shall be retroreflective Type B<sub>1</sub> or Type C<sub>1</sub> conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.



**CHEVRONS**

- The chevron shall be a vertical rectangle with a minimum size of 12 by 18 inches.
- Chevrons are intended to give notice of a sharp change of alignment with the direction of travel and provide additional emphasis and guidance for vehicle operators with regard to changes in horizontal alignment of the roadway.
- Chevrons, when used, shall be erected on the outside of a sharp curve or turn, or on the far side of an intersection. They shall be in line with and at right angles to approaching traffic. Spacing should be such that the motorist always has three in view, until the change in alignment eliminates its need.
- To be effective, the chevron should be visible for at least 500 feet.
- Chevrons shall be orange with a black nonreflective legend. Sheeting for the chevron shall be retroreflective Type B<sub>1</sub> or Type C<sub>1</sub> conforming to Departmental Material Specification DMS-8300, unless noted otherwise. The legend shall meet the requirements of DMS-8300.
- For Long Term Stationary use on tapers or transitions on freeways and divided highways, self-righting chevrons may be used to supplement plastic drums but not to replace plastic drums.



**LONGITUDINAL CHANNELIZING DEVICES (LCD)**

- LCDs are crashworthy, lightweight, deformable devices that are highly visible, have good target value and can be connected together. They are not designed to contain or redirect a vehicle on impact.
- LCDs may be used instead of a line of cones or drums.
- LCDs shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
- LCDs should not be used to provide positive protection for obstacles, pedestrians or workers.
- LCDs shall be supplemented with retroreflective delineation as required for temporary barriers on BC(7) when placed roughly parallel to the travel lanes.
- LCDs used as barricades placed perpendicular to traffic should have at least one row of reflective sheeting meeting the requirements for barricade rails as shown on BC(10). Place reflective sheeting near the top of the LCD along the full length of the device.

**WATER BALLASTED SYSTEMS USED AS BARRIERS**

- Water ballasted systems used as barriers shall not be used solely to channelize road users, but also to protect the work space per the appropriate Manual for Assessing Safety Hardware (MASH) crashworthiness requirements based on roadway speed and barrier application.
- Water ballasted systems used to channelize vehicular traffic shall be supplemented with retroreflective delineation or channelizing devices to improve daytime/nighttime visibility. They may also be supplemented with pavement markings.
- Water ballasted systems used as barriers shall be placed in accordance to application and installation requirements specific to the device, and used only when shown on the CWZTCD list.
- Water ballasted systems used as barriers should not be used for a merging taper except in low speed (less than 45 MPH) urban areas. When used on a taper in a low speed urban area, the taper shall be delineated and the taper length should be designed to optimize road user operations considering the available geometric conditions.
- When water ballasted systems used as barriers have blunt ends exposed to traffic, they should be attenuated as per manufacturer recommendations or flared to a point outside the clear zone.

If used to channelize pedestrians, longitudinal channelizing devices or water ballasted systems must have a continuous detectable bottom for users of long canes and the top of the unit shall not be less than 32 inches in height.

**HOLLOW OR WATER BALLASTED SYSTEMS USED AS LONGITUDINAL CHANNELIZING DEVICES OR BARRIERS**

**GENERAL NOTES**

- Work Zone channelizing devices illustrated on this sheet may be installed in close proximity to traffic and are suitable for use on high or low speed roadways. The Engineer/Inspector shall ensure that spacing and placement is uniform and in accordance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
- Channelizing devices shown on this sheet may have a driveable, fixed or portable base. The requirement for self-righting channelizing devices must be specified in the General Notes or other plan sheets.
- Channelizing devices on self-righting supports should be used in work zone areas where channelizing devices are frequently impacted by errant vehicles or vehicle related wind gusts making alignment of the channelizing devices difficult to maintain. Locations of these devices shall be detailed elsewhere in the plans. These devices shall conform to the TMUTCD and the "Compliant Work Zone Traffic Control Devices List" (CWZTCD).
- The Contractor shall maintain devices in a clean condition and replace damaged, nonreflective, faded, or broken devices and bases as required by the Engineer/Inspector. The Contractor shall be required to maintain proper device spacing and alignment.
- Portable bases shall be fabricated from virgin and/or recycled rubber. The portable bases shall weigh a minimum of 30 lbs.
- Pavement surfaces shall be prepared in a manner that ensures proper bonding between the adhesives, the fixed mount bases and the pavement surface. Adhesives shall be prepared and applied according to the manufacturer's recommendations.
- The installation and removal of channelizing devices shall not cause detrimental effects to the final pavement surfaces, including pavement surface discoloration or surface integrity. Driveable bases shall not be permitted on final pavement surfaces. The Engineer/Inspector shall approve all application and removal procedures of fixed bases.

| Posted Speed | Formula               | Minimum Desirable Taper Lengths |            |            | Suggested Maximum Spacing of Channelizing Devices |              |
|--------------|-----------------------|---------------------------------|------------|------------|---|--------------|
|              |                       | 10' Offset                      | 11' Offset | 12' Offset | On a Taper  | On a Tangent |
| 30           | $L = \frac{WS^2}{60}$ | 150'                            | 165'       | 180'       | 30'   | 60'          |
| 35           |                       | 205'                            | 225'       | 245'       | 35'   | 70'          |
| 40           |                       | 265'                            | 295'       | 320'       | 40'   | 80'          |
| 45           | L = WS                | 450'                            | 495'       | 540'       | 45'   | 90'          |
| 50           |                       | 500'                            | 550'       | 600'       | 50'   | 100'         |
| 55           |                       | 550'                            | 605'       | 660'       | 55'   | 110'         |
| 60           | L = WS                | 600'                            | 660'       | 720'       | 60'   | 120'         |
| 65           |                       | 650'                            | 715'       | 780'       | 65'   | 130'         |
| 70           |                       | 700'                            | 770'       | 840'       | 70'   | 140'         |
| 75           | L = WS                | 750'                            | 825'       | 900'       | 75'   | 150'         |
| 80           |                       | 800'                            | 880'       | 960'       | 80'   | 160'         |

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

**SUGGESTED MAXIMUM SPACING OF CHANNELIZING DEVICES AND MINIMUM DESIRABLE TAPER LENGTHS**

SHEET 9 OF 12



**BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES**

**BC (9) - 21**

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| 7-13 5-21             |           |            |           |            |



NAME: *Randy P. Janak* PE  
 DATE: *2/24/2026*



**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

**BC (9) - 21**

SCALE: N. T. S. SHEET 9 OF 12

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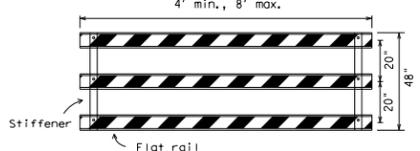
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- TYPE 3 BARRICADES**
- Refer to the Compliant Work Zone Traffic Control Devices List (CWZTCD) for details of the Type 3 Barricades and a list of all materials used in the construction of Type 3 Barricades.
  - Type 3 Barricades shall be used at each end of construction projects closed to all traffic.
  - Barricades extending across a roadway should have stripes that slope downward in the direction toward which traffic must turn in detouring. When both right and left turns are provided, the chevron striping may slope downward in both directions from the center of the barricade. Where no turns are provided at a closed road, striping should slope downward in both directions toward the roadway.
  - Striping of rails, for the right side of the roadway, should slope downward to the left. For the left side of the roadway, striping should slope downward to the right.
  - Identification markings may be shown only on the back of the barricade rails. The maximum height of letters and/or company logos used for identification shall be 1".
  - Barricades shall not be placed parallel to traffic unless an adequate clear zone is provided.
  - Warning lights shall NOT be installed on barricades.
  - Where barricades require the use of weights to keep from turning over, the use of sandbags with dry, cohesionless sand is recommended. The sandbags will be tied shut to keep the sand from spilling and to maintain a constant weight. Sand bags shall not be stacked in a manner that covers any portion of a barricade rails reflective sheeting. Rock, concrete, iron, steel or other solid objects will NOT be permitted. Sandbags should weigh a minimum of 35 lbs and a maximum of 50 lbs. Sandbags shall be made of a durable material that tears upon vehicular impact. Rubber (such as tire inner tubes) shall not be used for sandbags. Sandbags shall only be placed along or upon the base supports of the device and shall not be suspended above ground level or hung with rope, wire, chains or other fasteners.
  - Sheeting for barricades shall be retroreflective Type A or Type B conforming to Departmental Material Specification DMS-8300 unless otherwise noted.

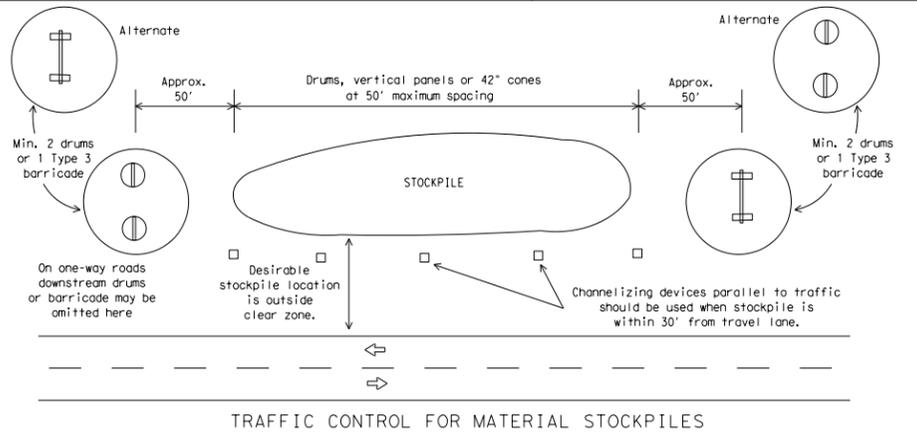
Barricades shall NOT be used as a sign support.



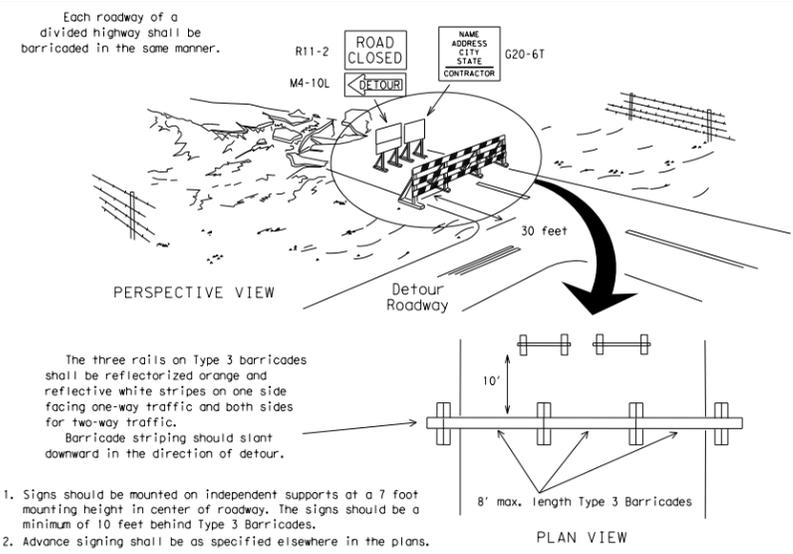
TYPICAL STRIPING DETAIL FOR BARRICADE RAIL



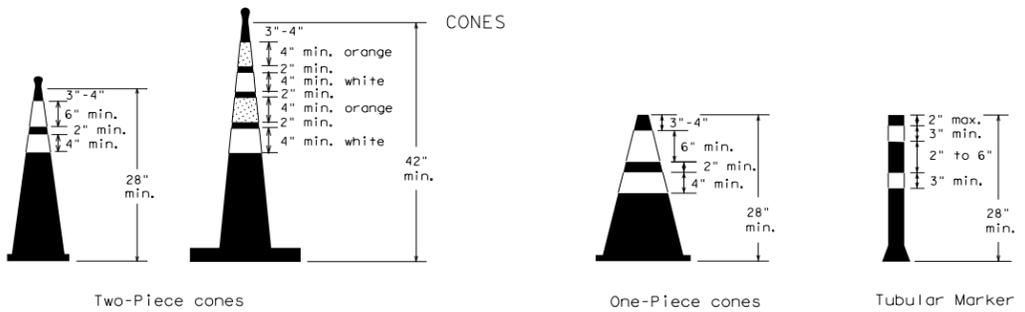
TYPICAL PANEL DETAIL FOR SKID OR POST TYPE BARRICADES



TRAFFIC CONTROL FOR MATERIAL STOCKPILES

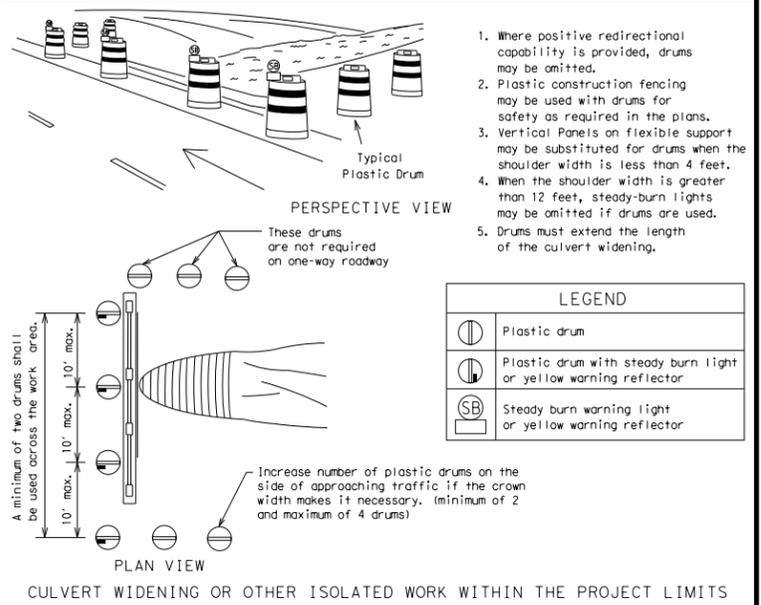


TYPE 3 BARRICADE (POST AND SKID) TYPICAL APPLICATION



28" Cones shall have a minimum weight of 9 1/2 lbs.  
 42" 2-piece cones shall have a minimum weight of 30 lbs. including base.

- Traffic cones and tubular markers shall be predominantly orange, and meet the height and weight requirements shown above.
- One-piece cones have the body and base of the cone molded in one consolidated unit. Two-piece cones have a cone shaped body and a separate rubber base, or ballast, that is added to keep the device upright and in place.
- Two-piece cones may have a handle or loop extending up to 8" above the minimum height shown, in order to aid in retrieving the device.
- Cones or tubular markers shall have white or white and orange reflective bands as shown above. The reflective bands shall have a smooth, sealed outer surface and meet the requirements of Departmental Material Specification DMS-8300 Type A or Type B.
- 28" cones and tubular markers are generally suitable for short duration and short-term stationary work as defined on BC(4). These should not be used for intermediate-term or long-term stationary work unless personnel is on-site to maintain them in their proper upright position.
- 42" two-piece cones, vertical panels or drums are suitable for all work zone durations.
- Cones or tubular markers used on each project should be of the same size and shape.



CULVERT WIDENING OR OTHER ISOLATED WORK WITHIN THE PROJECT LIMITS

**LEGEND**

|  |   |
|--|---|
|  | Plastic drum  |
|  | Plastic drum with steady burn light or yellow warning reflector |
|  | Steady burn warning light or yellow warning reflector           |

SHEET 10 OF 12

Texas Department of Transportation  
 Traffic Safety Division Standard

**BARRICADE AND CONSTRUCTION CHANNELIZING DEVICES**

**BC (10) - 21**

|             |           |           |       |           |       |      |       |      |       |
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| FILE#       | bc-21.dgn | DN#       | TXDOT | CK#       | TXDOT | DN#  | TXDOT | CK#  | TXDOT |
| REV#        | 1         | DATE      | 9-07  | BY        | 8-14  | CHK# | 7-13  | DATE | 5-21  |
| PROJECT NO. |           | 25-015-03 |       | SHEET NO. |       | 68   |       |      |       |

STATE OF TEXAS  
 RANDY P. JANAK  
 90185  
 LICENSED PROFESSIONAL ENGINEER

NAME: Randy P. Janak PE  
 DATE: 2/24/2026

CITY OF PORT LAVACA  
 TEXAS

**CivilCorp**  
 an ESP COMPANY  
 4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
 TEL: (361) 570-7500 TXSURV FIRM #100576-00 TXENG FIRM #10283

**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

**BC (10) - 21**

SCALE: N. T. S. SHEET 10 OF 12

|             |           |           |    |
|-------------|-----------|-----------|----|
| PROJECT NO. | 25-015-03 | SHEET NO. | 68 |
| REVISIONS   |           |           |    |
| NO.         |           |           |    |

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DATE:  
FILE:

### WORK ZONE PAVEMENT MARKINGS

#### GENERAL

- The Contractor shall be responsible for maintaining work zone and existing pavement markings, in accordance with the standard specifications and special provisions, on all roadways open to traffic within the CSJ limits unless otherwise stated in the plans.
- Color, patterns and dimensions shall be in conformance with the "Texas Manual on Uniform Traffic Control Devices" (TMUTCD).
- Additional supplemental pavement marking details may be found in the plans or specifications.
- Pavement markings shall be installed in accordance with the TMUTCD and as shown on the plans.
- When short term markings are required on the plans, short term markings shall conform with the TMUTCD, the plans and details as shown on the Standard Plan Sheet WZ(STPM).
- When standard pavement markings are not in place and the roadway is opened to traffic, DO NOT PASS signs shall be erected to mark the beginning of the sections where passing is prohibited and PASS WITH CARE signs at the beginning of sections where passing is permitted.
- All work zone pavement markings shall be installed in accordance with Item 662, "Work Zone Pavement Markings."

#### RAISED PAVEMENT MARKERS

- Raised pavement markers are to be placed according to the patterns on BC(12).
- All raised pavement markers used for work zone markings shall meet the requirements of Item 672, "RAISED PAVEMENT MARKERS" and Departmental Material Specification DMS-4200 or DMS-4300.

#### PREFABRICATED PAVEMENT MARKINGS

- Removable prefabricated pavement markings shall meet the requirements of DMS-8241.
- Non-removable prefabricated pavement markings (foil back) shall meet the requirements of DMS-8240.

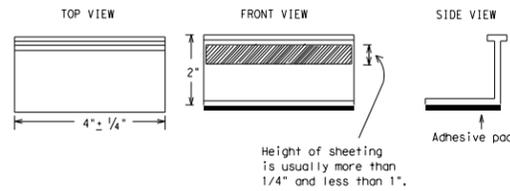
#### MAINTAINING WORK ZONE PAVEMENT MARKINGS

- The Contractor will be responsible for maintaining work zone pavement markings within the work limits.
- Work zone pavement markings shall be inspected in accordance with the frequency and reporting requirements of work zone traffic control device inspections as required by Form 599.
- The markings should provide a visible reference for a minimum distance of 300 feet during normal daylight hours and 160 feet when illuminated by automobile low-beam headlights at night, unless sight distance is restricted by roadway geometrics.
- Markings failing to meet this criteria within the first 30 days after placement shall be replaced at the expense of the Contractor as per Specification Item 662.

#### REMOVAL OF PAVEMENT MARKINGS

- Pavement markings that are no longer applicable, could create confusion or direct a motorist toward or into the closed portion of the roadway shall be removed or obliterated before the roadway is opened to traffic.
- The above shall not apply to detours in place for less than three days, where flaggers and/or sufficient channelizing devices are used in lieu of markings to outline the detour route.
- Pavement markings shall be removed to the fullest extent possible, so as not to leave a discernable marking. This shall be by any method approved by TxDOT Specification Item 677 for "Eliminating Existing Pavement Markings and Markers".
- The removal of pavement markings may require resurfacing or seal coating portions of the roadway as described in Item 677.
- Subject to the approval of the Engineer, any method that proves to be successful on a particular type pavement may be used.
- Blast cleaning may be used but will not be required unless specifically shown in the plans.
- Over-painting of the markings SHALL NOT BE permitted.
- Removal of raised pavement markers shall be as directed by the Engineer.
- Removal of existing pavement markings and markers will be paid for directly in accordance with Item 677, "ELIMINATING EXISTING PAVEMENT MARKINGS AND MARKERS," unless otherwise stated in the plans.
- Block-out marking tape may be used to cover conflicting existing markings for periods less than two weeks when approved by the Engineer.

### Temporary Flexible-Reflective Roadway Marker Tabs



STAPLES OR NAILS SHALL NOT BE USED TO SECURE TEMPORARY FLEXIBLE-REFLECTIVE ROADWAY MARKER TABS TO THE PAVEMENT SURFACE

- Temporary flexible-reflective roadway marker tabs used as guidemarks shall meet the requirements of DMS-8242.
- Tabs detailed on this sheet are to be inspected and accepted by the Engineer or designated representative. Sampling and testing is not normally required, however at the option of the Engineer, either "A" or "B" below may be imposed to assure quality before placement on the roadway.
  - Select five (5) or more tabs at random from each lot or shipment and submit to the Construction Division, Materials and Pavement Section to determine specification compliance.
  - Select five (5) tabs and perform the following test. Affix five (5) tabs at 24 inch intervals on an asphaltic pavement in a straight line. Using a medium size passenger vehicle or pickup, run over the markers with the front and rear tires at a speed of 35 to 40 miles per hour, four (4) times in each direction. No more than one (1) out of the five (5) reflective surfaces shall be lost or displaced as a result of this test.
- Small design variances may be noted between tab manufacturers.
- See Standard Sheet WZ(STPM) for tab placement on new pavements. See Standard Sheet TCP(T-1) for tab placement on seal coat work.

#### RAISED PAVEMENT MARKERS USED AS GUIDEMARKS

- Raised pavement markers used as guidemarks shall be from the approved product list, and meet the requirements of DMS-4200.
- All temporary construction raised pavement markers provided on a project shall be of the same manufacturer.
- Adhesive for guidemarks shall be bituminous material hot applied or butyl rubber pad for all surfaces, or thermoplastic for concrete surfaces.

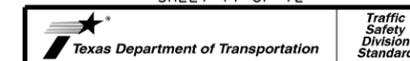
Guidemarks shall be designated as:  
 YELLOW - (two amber reflective surfaces with yellow body).  
 WHITE - (one silver reflective surface with white body).

#### DEPARTMENTAL MATERIAL SPECIFICATIONS

|  |          |
|--|----------|
| PAVEMENT MARKERS (REFLECTORIZED)                     | DMS-4200 |
| TRAFFIC BUTTONS                                      | DMS-4300 |
| EPOXY AND ADHESIVES                                  | DMS-6100 |
| BITUMINOUS ADHESIVE FOR PAVEMENT MARKERS             | DMS-6130 |
| PERMANENT PREFABRICATED PAVEMENT MARKINGS            | DMS-8240 |
| TEMPORARY REMOVABLE, PREFABRICATED PAVEMENT MARKINGS | DMS-8241 |
| TEMPORARY FLEXIBLE, REFLECTIVE ROADWAY MARKER TABS   | DMS-8242 |

A list of prequalified reflective raised pavement markers, non-reflective traffic buttons, roadway marker tabs and other pavement markings can be found at the Material Producer List web address shown on BC(1).

SHEET 11 OF 12



### BARRICADE AND CONSTRUCTION PAVEMENT MARKINGS

BC(11)-21

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| © TxDOT February 1998 | CONT      | SECT       | JOB       | HIGHWAY    |
| REVISIONS             | DIST      | COUNTY     | SHEET NO. |            |
| 2-98 9-07 5-21        |           |            | 69        |            |
| 1-02 7-13             |           |            |           |            |
| 11-02 8-14            |           |            |           |            |



NAME: Randy P. Janak PE  
 DATE: 2/24/2026



### WESTERN HEIGHTS STREET IMPROVEMENT PROJECT

BC(11)-21

SCALE: N. T. S. SHEET 11 OF 12

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| PROJECT NO. | 25-015-03 | SHEET NO. | 69 |
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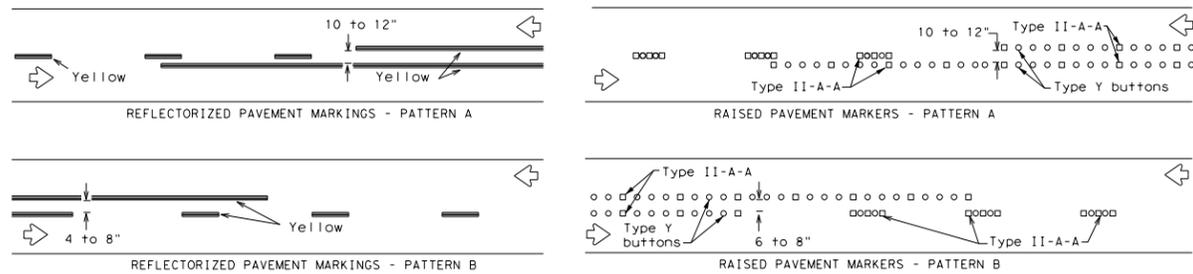
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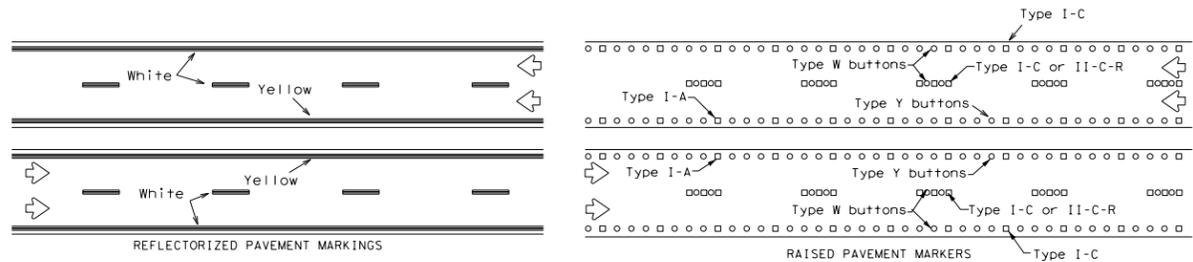
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PAVEMENT MARKING PATTERNS



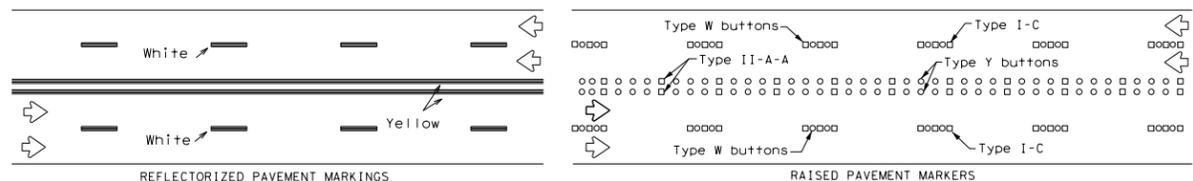
Pattern A is the TXDOT Standard, however Pattern B may be used if approved by the Engineer. Prefabricated markings may be substituted for reflectorized pavement markings.

CENTER LINE & NO-PASSING ZONE BARRIER LINES FOR TWO-LANE, TWO-WAY HIGHWAYS



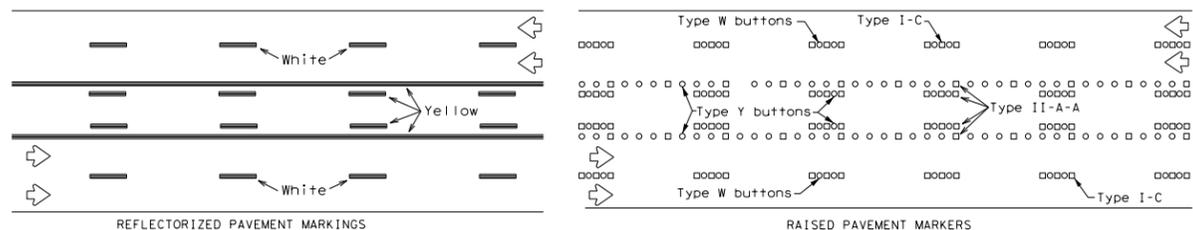
Prefabricated markings may be substituted for reflectorized pavement markings.

EDGE & LANE LINES FOR DIVIDED HIGHWAY



Prefabricated markings may be substituted for reflectorized pavement markings.

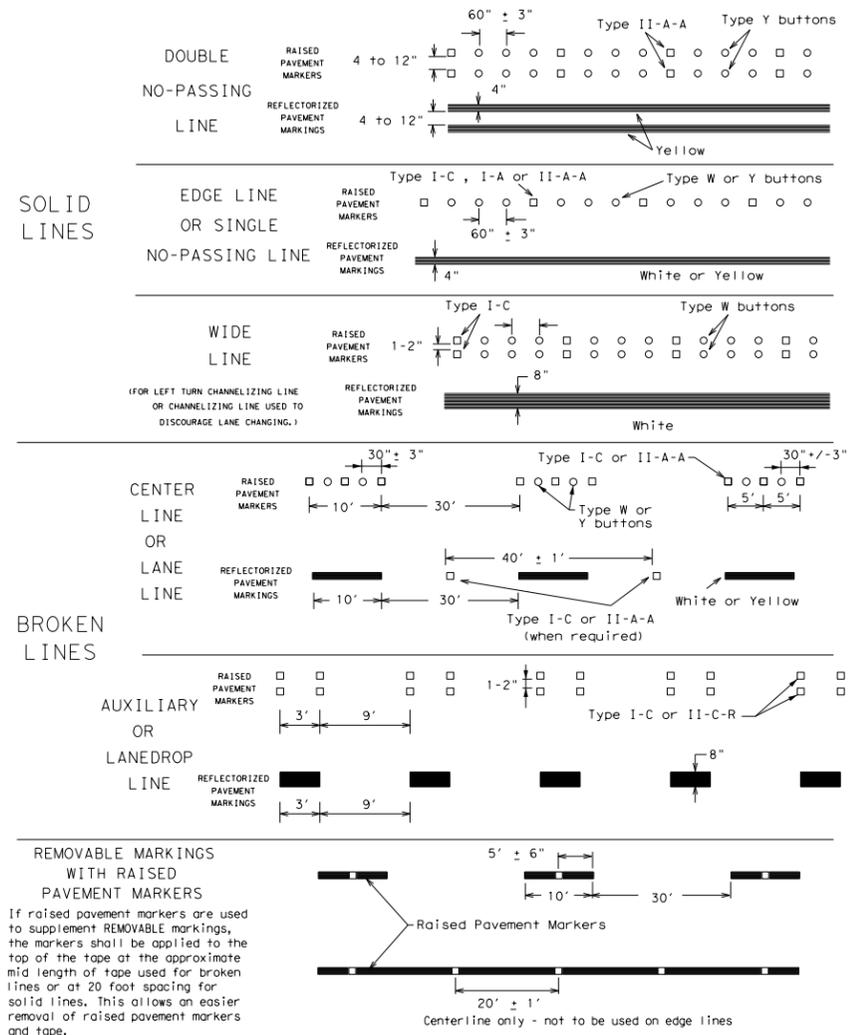
LANE & CENTER LINES FOR MULTILANE UNDIVIDED HIGHWAYS



Prefabricated markings may be substituted for reflectorized pavement markings.

TWO-WAY LEFT TURN LANE

STANDARD WORK ZONE PAVEMENT MARKINGS DETAILS



If raised pavement markers are used to supplement REMOVABLE markings, the markers shall be applied to the top of the tape at the approximate mid length of tape used for broken lines or at 20 foot spacing for solid lines. This allows an easier removal of raised pavement markers and tape.

SHEET 12 OF 12

Texas Department of Transportation  
 Traffic Safety Division Standard

**BARRICADE AND CONSTRUCTION PAVEMENT MARKING PATTERNS**

BC (12) - 21

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| REV#  | 1-97          | REV# | 2-98  | REV# | 11-02 | REV#     | 9-07      | REV#  | 5-21    |
| DATE  | February 1998 | DATE | 7-13  | DATE | 8-14  | DATE     |           | DATE  |         |
| CON#  |               | SEC# |       | JOB# |       | HIGHWAY# |           | DIST# | COUNTY# |
|       |               |      |       |      |       |          | SHEET NO. | 70    |         |



NAME: Randy P. Janak PE  
 DATE: 2/24/2026



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 TEL: (361) 570-7500 TXSURV FIRM #100576-00 TXENG FIRM #10283

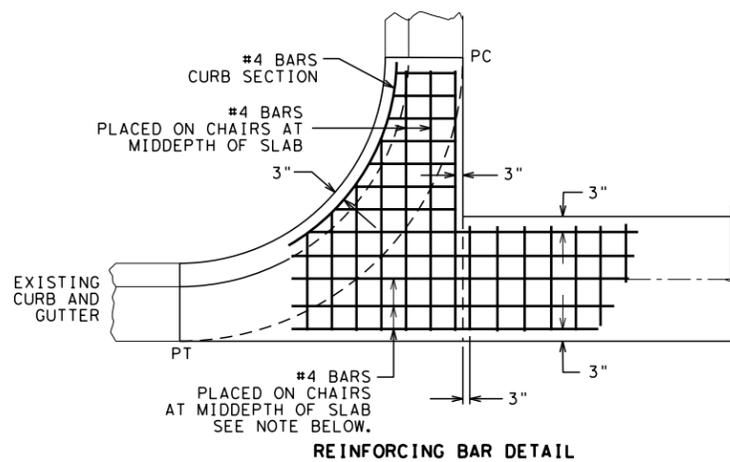
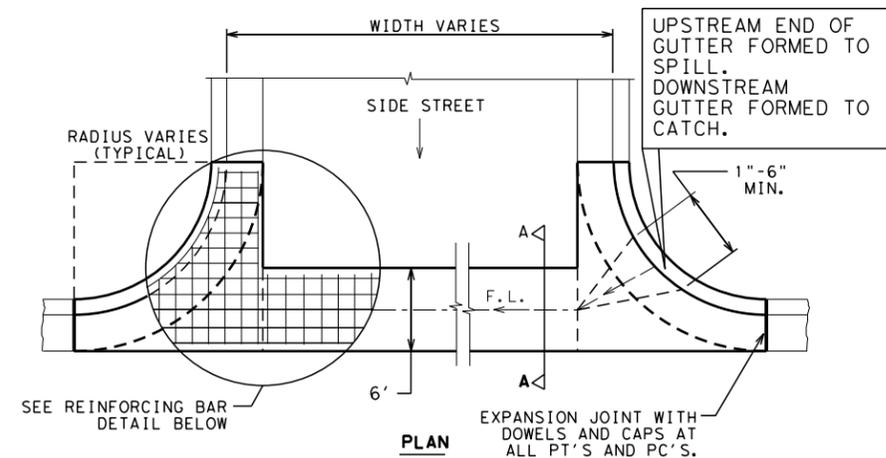
**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

BC (12) - 21

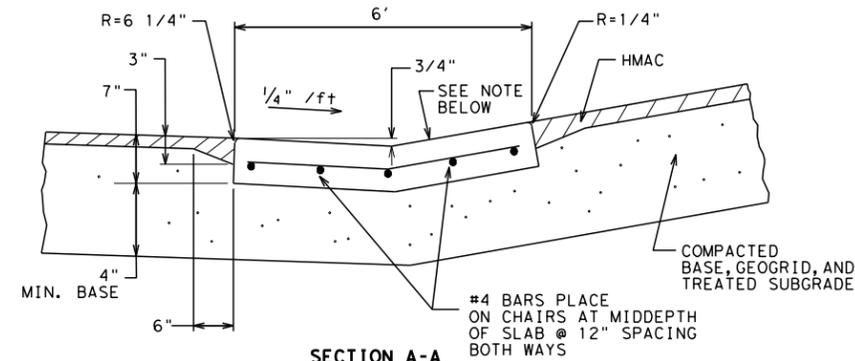
SCALE: N. T. S. SHEET 12 OF 12

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| PROJECT NO. | 25-015-03 | SHEET NO. | 70 |
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NOTE:  
 ALTERNATE #4 BARS PLACED ON CHAIRS AT MIDDEPTH OF SLAB TO BE CONTINUOUS ACROSS EXPANSION JOINT. BREAK BOND 6" ON EACH SIDE OF EXPANSION JOINT.

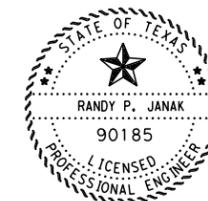


NOTE:  
 ADJUST SLOPE FROM 1/4" /ft) MINIMUM TO THE SLOPE OF THE SIDE STREET.

**CONCRETE VALLEY GUTTER**

**NOTES:**

1. MATERIALS AND CONSTRUCTION METHODS SHALL CONFORM TO TXDOT STANDARD SPECIFICATIONS.
2. CONCRETE FOR THE VALLEY GUTTER SHALL BE CLASS A.
3. MONOLITHIC CURB AND GUTTER SHALL BE MEASURED BY PLAN QUANTITY PER SQUARE YARD AND PAID AS VALLEY GUTTER.
4. THE UPSTREAM CURB MID POINT MUST BE AT OR LOWER THAN THE BEGINNING P.C. AND 0.5% MINIMUM HIGHER THAN THE OPPOSING MID POINT.
5. ALLOWABLE CONSTRUCTION JOINT AT THE CENTER LINE WHEN TRAFFIC FLOW MUST BE MAINTAINED, CONSTRUCTED AS A CONTROL JOINT.



NAME: *Randy P. Janak* PE  
 DATE: 2/24/2026



an ESP COMPANY  
 4611 E. AIRLINE RD., SUITE 300, VICTORIA, TEXAS 77904  
 TEL: (361) 570-7500 TXSURV FIRM #100576-00 TXENG FIRM #10283

**WESTERN HEIGHTS STREET IMPROVEMENT PROJECT**

**CONCRETE VALLEY GUTTER DETAIL**

SCALE: N.T.S. SHEET 1 OF 1

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|-------------|-----------|-----------|----|
| PROJECT NO. | 25-015-03 | SHEET NO. | 71 |
| REVISIONS   |           |           |    |
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