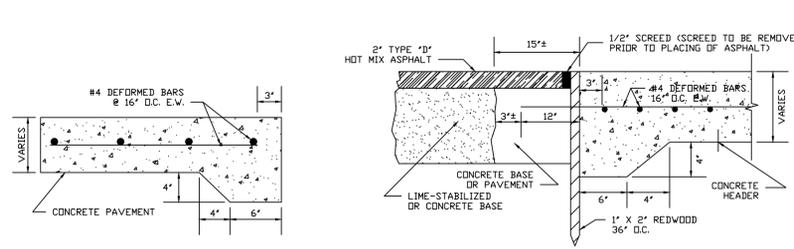


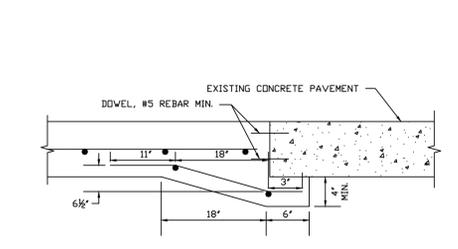
**ROADWAY SECTIONS**

NOTES:

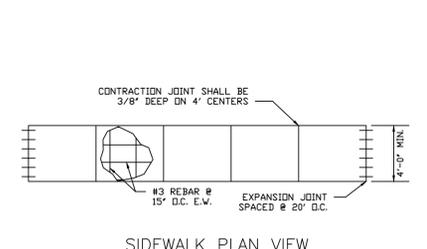
1. ALL REINFORCING BAR SHALL CONFORM TO ASTM A15-54T AND A305-53T.
2. EXPANSION JOINTS SHALL BE PLACED AT THE END OF EACH CURB RETURN, AND AT A MAXIMUM SPACING OF FORTY (40) FEET WITH CONTROL JOINTS NO GREATER THAN TEN (10) FEET. THE MAXIMUM LENGTH BETWEEN LONGITUDINAL JOINTS SHALL NOT EXCEED FIFTEEN (15) FEET.
3. ALL PAVEMENT CROSS-SECTION SHALL EITHER BE HYPERBOLIC OR TANGENT CROWN. MINIMUM SLOPE SHALL BE ONE-FOURTH (1/4) INCH PER FOOT.
4. MINIMUM SLOPE FOR ANY MEDIAN SHALL BE ONE-HALF (1/2) INCH PER FOOT.



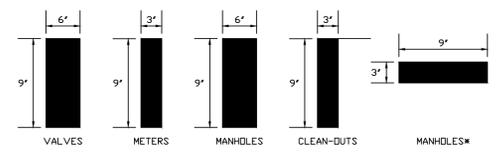
**CONCRETE PAVING HEADER**  
**ASPHALT PAVING HEADER**  
**PAVING HEADERS**



**UNDERCUT DETAIL**



**SIDEWALK PLAN VIEW**

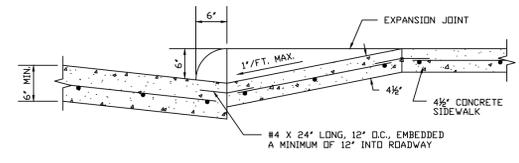


**UTILITY MARKINGS**

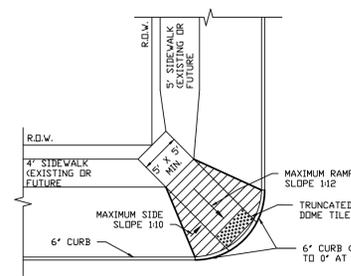
WATER LINES    SANITARY SEWER    STORM SEWER

NOTES:

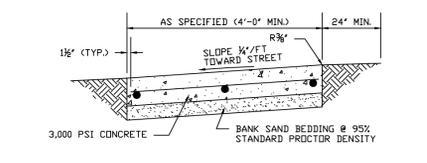
1. SAW CUT CURB OR EDGE AND APPLY APPROPRIATE MARKING AS LISTED BELOW.
2. WATER VALVE MARKING SHALL BE 6" X 9" IN SIZE MARKED IN BLUE PAINT ON CURB OR EDGE OF STREET.
3. WATER METER MARKING SHALL BE 3" X 9" IN SIZE MARKED IN BLUE PAINT ON CURB OR EDGE OF STREET.
4. SANITARY SEWER MANHOLE MARKING SHALL BE 6" X 9" IN SIZE MARKED IN GREEN PAINT ON CURB OR EDGE OF STREET.
5. SANITARY SEWER CLEAN-OUT MARKING SHALL BE 3" X 9" IN SIZE AND MARKED IN GREEN PAINT ON CURB OR EDGE OF STREET.
6. STORM SEWER MANHOLE MARKING SHALL BE 9" X 3" IN SIZE AND MARKED IN BLACK PAINT. ONLY STORM SEWER MANHOLES SHALL BE MARKED NOT, INLETS.



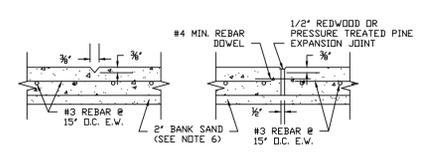
**SIDEWALK & WHEEL CHAIR RAMP SECTION**



**WHEELCHAIR RAMP - PLAN VIEW**



**SIDEWALK SECTION**

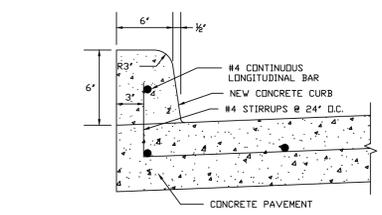


**SIDEWALK JOINTS**

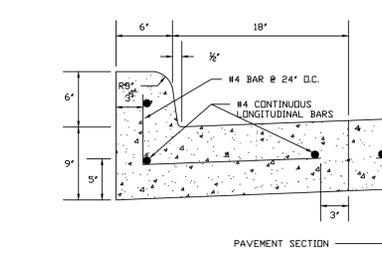
CONTRACTION JOINT    EXPANSION JOINT

NOTES:

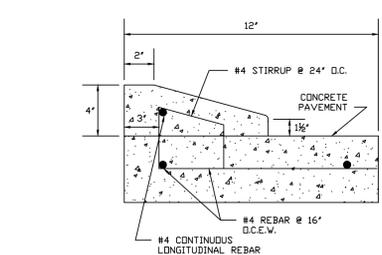
1. ALL EDGES SHALL BE ROUNDED WITH 3/8" RADIUS.
2. CONTRACTION JOINTS SHALL BE PLACED AT 4'-0" INTERVALS.
3. CONTRACTION JOINTS SHALL BE 3/8" DEEP AND HAVE TROWEL EDGE.
4. 1/2" EXPANSION JOINT MATERIAL REQUIRED WHERE SIDEWALKS ADJUT BUILDINGS, CURBS, DRIVEWAYS, OR EXISTING SIDEWALKS.
5. EXPANSION JOINTS SHALL BE PLACED AT 20'-0" INTERVALS.
6. 2" INCH CLEAN BANK SAND SHALL BE TAMPED TO 95% STANDARD PROCTOR.
7. WHERE NEW SIDEWALK IS PLACED AGAINST EXISTING SIDEWALK, SAW CUT EXISTING SIDEWALK TO AN EVEN STRAIGHT LINE PRIOR TO INSTALLATION OF THE NEW SIDEWALK. INSTALL #4 REBAR DOWEL INTO EXISTING SIDEWALK.



**TYPE I - 6" CONCRETE CURB**



**TYPE II - MONOLITHIC CONCRETE CURB AND GUTTER**

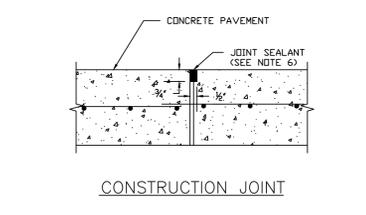


**CONCRETE CURB**

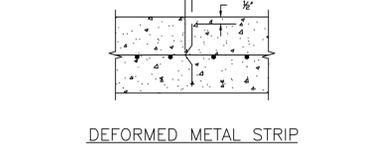
TYPE III - 4" x 12" CONCRETE CURB

NOTES:

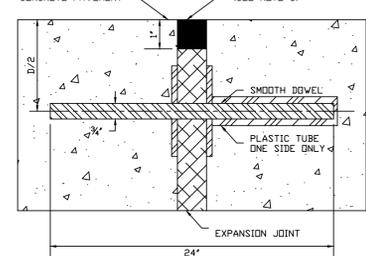
1. WHEN CONCRETE CURB IS TO BE PLACED ON EXISTING CONCRETE DOWEL IN #3 DEFORMED BARS @ 36" O.C. AND SET IN SULFUR OR QUICK SETTING CEMENT.
2. MORTAR FINISH IS NOT REQUIRED WHEN CURB IS PLACED BY A MACHINE, BUT CURB SHALL STILL HAVE THE SAME OUTSIDE DIMENSIONS.



**CONSTRUCTION JOINT**



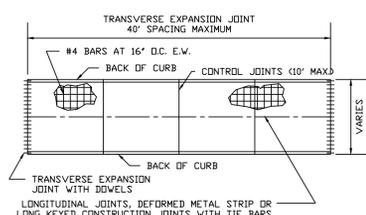
**DEFORMED METAL STRIP**



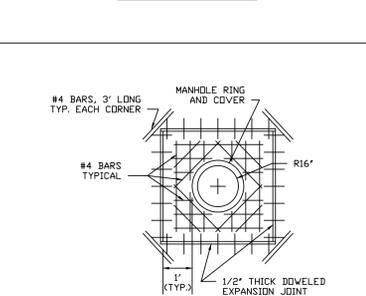
**DOWEL EXPANSION JOINT**

NOTES:

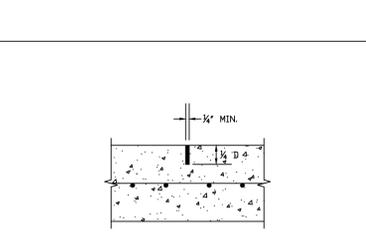
1. CANTILEVER TYPE, CAST MALLEABLE IRON LOAD TRANSMISSION UNIT-STABILIZING MODEL 3-27 OR EQUAL, OR 2" O.C. ARE ACCEPTABLE ALTERNATIVES.
2. EXPANSION JOINTS SHALL BE PLACED AT THE END OF EACH CURB RETURN, AND AT A MAXIMUM OF FORTY (40) FEET WITH CONTROL JOINTS NO GREATER THAN EVERY TEN (10) FEET.
3. STAKES FOR TRANSVERSE JOINTS SHALL NOT BE PLACED CLOSER THAN 6" TO A LONGITUDINAL JOINT. THE TOP OF STAKE SHALL NOT BE LESS THAN 1/4" BELOW THE FINISH SURFACE.
4. LOCATION OF CONSTRUCTION JOINTS AND DEFORMED STRIPS MAY BE VARIED WITH THE APPROVAL OF THE CITY, TO SUIT PROPOSED CONSTRUCTION OF THE CONTRACTOR.
5. JOINTS AND SEALANTS SHALL ADHERE TO CITY OF FRIENDSWOOD TECHNICAL SPECIFICATION 02840 - CONCRETE PAVEMENT JOINTS.



**PAVING PANEL**



**MANHOLE BLOCKOUT**



**CONTRACTION JOINT**

NOTES:

1. D = DEPTH OF CONCRETE.
2. SAW-CUT CONTRACTION JOINT TO DIMENSIONS SHOWN.

**PAVEMENT JOINTS**

NOTES:

1. RAMP SHALL MEET ADA (AMERICANS WITH DISABILITIES ACT) AND TABA (TEXAS ARCHITECTURAL BARRIERS ACT).
2. FINISHED SURFACE OF WHEELCHAIR RAMP AND SIDE SLOPE SHALL BE GROOVED LATERALLY WITH 1/2" WIDE BY 1/2" DEEP GROOVES, SPACED AT 24" O.C. WITH BLACK BROOM FINISH. CONTRACTOR SHALL MAKE ADJUSTMENTS TO RAMP TO FIT LOCAL CONDITION.
3. ALL CUTOPTS MUST HAVE BARRICADES INSTALLED UNTIL WHEELCHAIR RAMP IS COMPLETED.
4. MINIMUM CLEARANCE (WIDTH) OF RAMP SHALL BE THIRTY-SIX (36) INCHES.
5. FINISH SURFACES OF RAMP AND SIDE SLOPE SHALL BE TREATED WITH COLOR SO THAT THE SURFACES ARE IN CONTRAST WITH SURFACE COLOR OF ADJACENT SIDEWALKS AND STREETS.
6. CONTRAST COLOR OF WHEELCHAIR RAMP AND SIDE SLOPES SHALL BE BLACK DYE PER CITY OF FRIENDSWOOD TECHNICAL SPECIFICATIONS.

**SIDEWALKS AND WHEELCHAIR RAMPS**

**PAVING CONSTRUCTION NOTES:**

1. PAVEMENT AND SUBGRADE SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF FRIENDSWOOD STANDARD DETAILS AND TECHNICAL SPECIFICATIONS, LATEST REVISION.
2. CONTRACTOR SHALL NOTIFY THE CITY OF FRIENDSWOOD ENGINEERING DEPARTMENT AT (281) 993-3411 A MINIMUM OF TWENTY-FOUR (24) HOURS PRIOR TO ALL LIMING AND PAVING OPERATIONS.
3. ALL TURN-OUTS SHALL HAVE A TWENTY-FIVE (25) FOOT RADIUS AT THE BACK OF CURB UNLESS OTHERWISE NOTED.
4. GUIDELINES SET FORTH IN THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (TMUTCD), LATEST EDITION, SHALL BE OBSERVED.
5. ALL FILL IN EXISTING RIGHTS-OF-WAY, INCLUDING BACKDRESSING BEHIND THE CURB, SHALL BE PLACED IN A MAXIMUM LOOSE LIFTS OF TWELVE (12) INCHES OR LESS AND COMPACTED TO A NINETY-FIVE PERCENT (95%) STANDARD PROCTOR DENSITY WITH A MOISTURE CONTENT THREE PERCENT (3%) ± ONE PERCENT (1%) OF OPTIMUM MOISTURE.
6. MINIMUM PAVEMENT REINFORCEMENT REQUIREMENT SHALL BE GRADE 60, NO. 4 REBAR, SPACED AS SIXTEEN (16) INCHES ON CENTER, EACH WAY.
7. FOR PAVEMENT WIDTHS LESS THAN OR EQUAL TO TWENTY-EIGHT (28) FEET BACK OF CURB TO BACK OF CURB:
  - 8.1 MINIMUM CONCRETE SLAB THICKNESS SHALL BE SIX (6) INCHES.
  - 8.2 MINIMUM STABILIZED SUBGRADE THICKNESS SHALL BE SIX (6) INCHES.
8. FOR PAVEMENT WIDTHS GREATER THAN TWENTY-EIGHT (28) FEET FROM BACK OF CURB TO BACK OF CURB AND MAJOR ARTERIAL THOROUGHFARES:
  - 9.1 MINIMUM CONCRETE SLAB THICKNESS SHALL BE SEVEN (7) INCHES.
  - 9.2 MINIMUM STABILIZED SUBGRADE THICKNESS SHALL BE EIGHT (8) INCHES.

10. PAVING EXPANSION JOINTS SHALL BE PLACED AT A MAXIMUM OF FORTY (40) FOOT INTERVALS.
11. ALL CONCRETE USED FOR PAVEMENT SHALL BE "CLASS A" CONCRETE, MINIMUM FIVE (5.0) SACKS OF CEMENT PER CUBIC YARD OF CONCRETE, 4,000 PSI COMPRESSIVE STRENGTH AT TWENTY-EIGHT (28) DAYS. CONCRETE USED FOR SIDEWALKS MAY BE 3,000 PSI COMPRESSIVE STRENGTH AT TWENTY-EIGHT (28) DAYS.
12. CLASS "A" HYDRATED LIME SHALL BE APPLIED FOR SUBGRADE AT A MINIMUM OF SIX PERCENT (6%).
13. CONTRACTOR SHALL INSTALL STREET SIGNS AND REGULATORY SIGNS PER CITY OF FRIENDSWOOD STANDARD DETAILS AND TECHNICAL SPECIFICATIONS, LATEST EDITION.
14. ALIGNMENTS, CENTERLINE CURVE DATA, AND STATIONING FOR ALL CONSTRUCTION SHALL BE DETERMINED FROM SUBDIVISION PLAN.
15. FOR ALL CONCRETE TO BE REMOVED, SHALL BE SAW CUT ONE HALF OF THE PAVEMENT DEPTH BEFORE REMOVAL.
16. REPRESENTATIVES FROM THE CITY OF FRIENDSWOOD, THE OWNER, AND THE TESTING LABORATORY SHALL BE PRESENT FOR ALL GRADATIONS, DENSITY TESTING, LIME OPERATIONS, AND PLACEMENT OF CONCRETE OR ASPHALTIC PAVING.
17. UNDER NO CIRCUMSTANCES SHALL WATER BE ADDED TO A CONCRETE LOAD AFTER SLUMP TESTS HAVE BEEN TAKEN.
18. BLUE REFLECTORIZED RAISED PAVEMENT MARKERS SHALL BE PLACED ADJACENT TO FIRE HYDRANT LOCATIONS AT A POINT SIX (6) INCHES FROM THE CENTERLINE OF THE ROADWAY, ON THE SIDE OF THE FIRE HYDRANT (REFLECTORS SHALL FACE TRAFFIC FLOW).
19. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING LOCATION OF ALL EXISTING UTILITIES PRIOR TO EXCAVATION. DURING THE COURSE OF AND ALL CLEARING, GRUBBING, FILL, GRADING, EXCAVATION, OR OTHER CONSTRUCTION, CONTRACTOR SHALL ENSURE THAT STORM DRAINAGE PATHWAYS ARE MAINTAINED AND REMAIN OPEN TO ENSURE POSITIVE DRAINAGE AND SUCH CONVEYANCES ARE NOT IMPEDED OR BLOCKED IN ANY WAY. STORM SEWER INLETS SHALL BE PROTECTED FROM ENTRY OF SILT, TRASH, DEBRIS, AND ANY OTHER SUBSTANCES DELETERIOUS TO THE STORM SEWER SYSTEM AND/OR WATERWAYS RECEIVING STORM WATER RUNOFF. CONTRACTOR SHALL, AT COMPLETION OF WORK, FILL LOW SPOTS AND GRADE ALL RIGHTS-OF-WAY AND UTILITY EASEMENTS AND REGRADE/RESTORE DITCHES AS NECESSARY TO MAINTAIN AND/OR ESTABLISH POSITIVE DRAINAGE.

**PAVING STANDARD DETAILS**



**ENGINEERING DEPARTMENT**

FILE NAME: 7-PSD-2022.DWG  
DATE APPROVED: MARCH, 30 2022  
SCALE: NTS  
REVISED DATE: MARCH 2022

PROJECT NUMBER:    DATE SUBMITTED:    SHEET: 1 OF 1