FORT BEND COUNTY CONSTRUCTION DETAILS
MARCH 1, 2022

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1. DO NOT INCLUDE THIS SHEET IN YOUR PLAN SETS.
2. TO BE USED WHEN OUTSIDE CITY EXTRATERRITORIAL JURISDICTION OR IF THE CITY DOES NOT HAVE ITS OWN DETAIL.
3. FOR BRIDGES, BRIDGE RAILS, OR TRAFFIC SIGNALS, USE TXDOT STANDARDS.
4. CHOSEN STANDARDS ARE TO BE IDENTIFIED AND SIGNED BY THE DESIGN ENGINEER ON THE INDEX SHEET AS DESCRIBED IN CHAPTER 12.4 OF THE FBC DESIGN MANUAL.
CONSTRUCTION

1. FORT BEND COUNTY MUST BE NOTIFIED OF THE PRE-CONSTRUCTION MEETING.

2. CONTRACTOR SHALL NOTIFY FORT BEND COUNTY ENGINEERING DEPARTMENT 48 HOURS PRIOR TO COMMENCING CONSTRUCTION AND 48 HOUR NOTICE TO ANY CONSTRUCTION ACTIVITY WITHIN THE LIMITS OF THE PAVING AT CONSTRUCTION SYMBLOGY.

3. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FROM FORT BEND COUNTY PRIOR TO COMMENCING CONSTRUCTION OF ANY IMPROVEMENTS WITHIN COUNTY ROAD RIGHT OF WAY.

4. ALL IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH FORT BEND COUNTY STANDARDS, SPECIFICATIONS AND REQUIREMENTS RELATING TO THE APPROVAL AND ACCEPTANCE OF IMPROVEMENTS IN SUBDIVISIONS AS CURRENTLY AMENDED.

5. ALL ROAD WORKS, CURB RAIS AND CURB ALIGNMENT SHOWN INDICATES BACK OF CURB.

6. A CONTINUOUS LONGITUDINAL REINFORCING RAY SHALL BE USED IN THE CURB.

7. ALL CURB RAIS AND CURB CONNECTS WITH A MINIMUM TRANSVERSE EXPANSION JOINTS AT EACH CURB RAISE AND AT A MINIMUM SPACING OF 60 FEET.

8. ALL HYDRANTS IN THE EXISTING STREETS AND DRIVEWAYS SHALL BE MAINTAINED AT ALL TIMES.

9. 4" X 3" REINFORCED CONCRETE CURB SHALL BE PLACED IN FRONT OF SINGLE FAMILY LOTS ONLY. ALL OTHER AREAS SHALL BE 6" REINFORCED CONCRETE CURB.

10. CURB Heater are required at curb connections to maintain ramps, with no construction joint within 5' of ramps.

11. GUIDELINES ARE SET FORTH IN THE TEXAS "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" AS CURRENTLY AMENDED. THESE GUIDELINES SHALL BE CONSIDERED THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE PLACARDS, SIGNING, STRIPLING AND WARNING DEVICES, ETC. DURING CONSTRUCTION - BOTH DAY AND NIGHT.

12. ALL R1-1 STOP SIGNS SHALL BE A MINIMUM OF 36"X36" WITH DIAMOND SACK CEMENT WITH A MINIMUM COMPRESSIVE STRENGTH OF 3500 PSI AT 28 DAYS. TRANSVERSE EXPANSION JOINTS SHALL BE INSTALLED AT EACH CURB RAISE AND AT A MINIMUM SPACING OF 60 FEET.

13. STREET NAME SIGNAGE SHALL BE ON A 48" HIGH SIGN PLATE MOUNTED ON THE CURB. STREET NAMES SHALL BE UPSIDE DOWN AND LOCATED INSIDE DRAWER WITH SUPPLEMENTAL LETTERS OF 4" UPPER AND LOWERCASE LETTERS OF 3.5" MINIMUM. THE LETTERS SHALL BE REFLECTIVE WHITE. STREET NAME SIGNS SHALL BE MOUNTED ON STOP SIGN POST.


15. THE PROJECTS AND ALL PARTS THEREOF SHALL BE SUBJECT TO INSPECTION FROM TIME TO TIME BY AUTHORIZED PERSONNEL OF FORT BEND COUNTY ENGINEERING DEPARTMENT. INSPECTION SHALL BE MADE WITHOUT NOTICE OR APPOINTMENT. ALL CONSTRUCTION MATERIALLY HOMING TO INSPECT OR FAILURE TO INSPECT ANY OF THE WORK AS NOT TO BE ACCEPTANCE WITH THE DRAWINGS AND SPECIFICATIONS. REQUIREMENTS AND SPECIFICATIONS OF FORT BEND COUNTY ON ANY PROVISION OF THIS PROJECT SHALL BE CONSIDERED TO BE AN ACCEPTANCE OF SUCH WORK AND TO RELIEVE THE CONTRACTOR OF ANY OF ITS OBLIGATIONS.


NOTE: FORT BEND COUNTY NOTES SUPERSEDE ANY CONFLICTING NOTES.
GENERAL

1. The contractor shall ensure that all work is performed in a safe manner and that all necessary permits and approvals have been obtained prior to beginning construction.

2. The contractor shall be responsible for maintaining a safe worksite and for ensuring that all subcontractors and vendors comply with safety regulations.

3. The contractor shall be responsible for providing access to the project site for project-related activities.

4. The contractor shall be responsible for cleaning and maintaining the project site in a manner that is consistent with the standards established by Fort Bend County.

5. The contractor shall ensure that all materials and equipment are properly stored and secured to prevent theft or damage.

6. The contractor shall be responsible for ensuring that all work is performed in accordance with the approved plans and specifications.

7. The contractor shall be responsible for ensuring that all work is performed in a manner that is consistent with the standards established by Fort Bend County.

8. The contractor shall be responsible for ensuring that all work is performed in a manner that is consistent with the standards established by Fort Bend County.

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10. The contractor shall be responsible for ensuring that all work is performed in a manner that is consistent with the standards established by Fort Bend County.

TRAFFIC SIGNAL

1. All work related to the construction of traffic signal installations, except for those items that have been approved in advance, shall be completed prior to the activation of the traffic signal system.

2. The contractor shall remove all materials and equipment from the project site within 24 hours of the completion of all work.

3. The contractor shall be responsible for ensuring that all work is performed in a manner that is consistent with the standards established by Fort Bend County.

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TRAFFIC CONTROL

1. The contractor shall provide and install traffic control devices in accordance with the approved plans and specifications.

2. The contractor shall be responsible for ensuring that all work is performed in a manner that is consistent with the standards established by Fort Bend County.

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TRAFFIC SIGNAL NOTES

1. INSTALL SIGNS AND SIGNALS HORIZONTALLY ON MAST ARM 17 FT-6 IN MINIMUM ABOVE THE ROADWAY.
2. PAINT BLACK MOUNTING FOR VEHICLE SIGNALS WITH 12-IN LENS AND BLACK BACKPLATES.
3. TRAFFIC SIGNALS ON STREET FACES SHALL BE STANDARD G emissive ROUND SIGNS.
4. TRAFFIC SIGNALS ON STREET FACES SHALL BE BLACK WITH ONE ROW OF LETTERS ON WEATHER GUARD.
5. TRAFFIC SIGNALS ON STREET FACES SHALL BE BLACK WITH ONE ROW OF LETTERS ON WEATHER GUARD.
6. USE DIAMOND GRADE RETROREFLECTIVE SHEETING FOR SIGNS MOUNTED UNDER OR ADJACENT TO THE MOUNTING spar.
7. USE DIAMOND GRADE RETROREFLECTIVE SHEETING FOR SIGNS MOUNTED UNDER OR ADJACENT TO THE MOUNTING spar.
8. TURN LAMP POSTS FOR TRAFFIC SIGNALS TO FACE IN ACCORDANCE WITH THE LATEST "TEXAS MANUAL ON UNIFORM CONTROL DEVICES"
9. PROVIDE LIGHT-EMITTING DIODE (LED) LUMINAIRES EQUIVALENT TO "250 WATT HIGH PRESSURE SODIUM" LUMINAIRES MOUNTED ON TRAFFIC SIGNAL POLES SHALL BE IN COMPLIANCE WITH TXDOT STANDARDS.
10. INSTALL THREE (3) 12-VOLT POWER CABLES FOR EACH VEHICLE SIGNAL HARDWARE FITTINGS.
11. INSTALL LAMP POSTS FOR TRAFFIC SIGNALS TO FACE IN ACCORDANCE WITH THE LATEST "TEXAS MANUAL ON UNIFORM CONTROL DEVICES"
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31. INSTALL MOUNTING HARDWARE FITTINGS FOR TRAFFIC SIGNALS TO FACE IN ACCORDANCE WITH THE LATEST "TEXAS MANUAL ON UNIFORM CONTROL DEVICES"
**FULL DEPTH CONCRETE PAVEMENT REPAIR (FDCPR) NOTES:**

1. **ONLY FULL DEPTH SAWCUTS WILL BE ALLOWED.**
2. **EXISTING CONCRETE VERTICAL FACES SHALL BE CLEARED OF ALL DELTROUS LOOSE MATERIAL PRIOR TO CONCRETE PLACEMENT.**
3. **FOR REPAIR/REPLACE AREAS, A 2'-0" DEPTH BASE SHALL BE REMOVED AND REPLACED WITH CEMENT STABILIZED SAND PER ITEM 433 HARRIS COUNTY SPECIFICATIONS.**
4. **REINFORCEMENT OF 9" - 10" THICK CONCRETE PAVEMENT SHALL BE NO. 5 BARS AT 18" SPACING IN EACH DIRECTION REFER TO TABLE ON CONCRETE PAVEMENT SHEET 2 OF 2.**
5. **NOTE TO THE INSPECTOR/ACCCEPTANCE GUIDELINES.**

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**CONCRETE APPOIN DETAIL - DRIVEWAY PROFILE**

FOR CULVERT DRAINAGE
FORT BEND COUNTY
ENGINEERING DEPARTMENT

MEDIAN OPENING

NEW PAVEMENT

EXISTING PAVEMENT

8" CEMENT STABALIZED SAND

EXISTING LINE STABALIZED SUBGRADE

EXISTING LINE TREATED SUBGRADE

FACE OF CURB

500' MIN RADIUS

TURN LANE PLAN VIEW

NOTE
1. FOR CONCRETE PAVEMENT REINFORCEMENT AND JOINT DETAILS SEE CONCRETE PAVEMENT DETAILS SHEET

LEFT TURN LANE

& MEDIAN OPENING

FULL DEPTH SAWCUT AS CLOSE TO CURB LINE AS POSSIBLE

NEW PAVEMENT

NEW PAVEMENT

EXISTING PAVEMENT

EXISTING PAVEMENT

30" DOWEL (SEE TABLE 1 ON CONCRETE PAVEMENT DETAILS SHEET)

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1. SAWCUT EXISTING DRIVEWAY AT R.O.W. LINE OR AS SHOWN ON DRAWING AND REMOVE EXISTING DRIVEWAY TO SAWCUT LINE.
2. IF THERE IS EXISTING CURB ON DRIVEWAY, CONNECT PROPOSED CURB TO EXISTING CURB; OTHERWISE TAPER CURB HEIGHT AS SHOWN.
3. SEE PLAN AND PROFILE SHEETS FOR RADIUS OF CURB.
4. THE DRIVEWAY INSTALLATION IS GOVERNED BY HARRIS COUNTY ITEM 360.
5. DRAWN BY: CK'D BY: SCALE: DATE:

NOTES:
1. 18" BLOCKOUT BACK OF DRIVEWAY CURB (TYP.)
2. 1'-0" EXPANSION BOARD OR 1/2" NON-EXTRUDING PREFORMED JOINT OR AS SHOWN ON DRAWING.
3. SECTION A-A (DRIVEWAY SLOPES TO ROADWAY)
4. SECTION A-A (DRIVEWAY SLOPES AWAY FROM ROADWAY)
5. END PROPOSED CONCRETE AT R.O.W. OR AS SHOWN ON DRAWING.
6. 2% MAX MINIMUM RADII REQUIREMENTS - DRIVEWAYS
7. END PROPOSED CONCRETE AT R.O.W.

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<td>2% TO 10%*</td>
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<td>MAJOR</td>
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SEE PLAN AND PROFILE SHEETS FOR CONCRETE CURB REINFORCEMENT.

SEE PAVEMENT DETAIL SHEET FOR CONCRETE CURB REINFORCEMENT.

PROVIDE 1 1/2" RATED EXPANSION DOWEL BOARD ONLY FOR DRIVEWAY SLOPE AWAY FROM ROAD.

SEE TABLE BELOW FOR DRIVEWAY SLOPE FROM BACK CURB.

FORT BEND COUNTY ENGINEERING DEPARTMENT
NOTES:
1. TYPICAL SIDEWALK WIDTH IS 5'. SIDEWALKS OF 4' WIDTH ARE ALLOWED IN FRONT OF SINGLE FAMILY HOMES IF ALL DRIVEWAYS PROVIDE A 5' AREA FOR PASSING. SIDEWALKS OF 4' WITH 5' X 5' PASSING ZONES MUST BE SPECIFICALLY APPROVED BY FORT BEND COUNTY.
2. THE MAXIMUM WIDTH BETWEEN EXPANSION JOINTS SHALL NOT EXCEED 20'-0".
3. EXPANSION JOINTS TO BE 1/2" THICK CLEAR HEART REDWOOD DOWELS.
4. SCORED CONTRACTION JOINTS SHALL BE EVERY 5' OR EQUAL TO SIDEWALK WIDTH.
5. ALL EARTHEN AREAS ARE TO BE SODDED UNLESS SHOWN OTHERWISE ON DRAWINGS.
6. SIDEWALKS TO BE REINFORCED CONCRETE (3500 PSI) WITH #3 BARS, 18 INCHES C-C.
7. USE RADIUS TOOL ON ALL EXPOSED EDGES.
8. MEMBRANE CURING COMPOUND IS REQUIRED AS DESCRIBED IN ITEM 526 IN THE TXDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.
9. SIDEWALK EXPANSION JOINTS SHALL CONFORM TO STREET EXPANSION JOINT STANDARDS.

NOTE:
BANK SAND IS DEFINED AS A WELL-GRADED SAND, FREE OF BULky CLAY, LOAM, FRIABLE OR SOLUBLE MATERIALS AND ORGANIC MATTER, MEETING THE UNIFIED SOILS CLASSIFICATION SYSTEM GROUP 5R OR 6R WITH A PLASTICITY INDEX OF LESS THAN 10, AND NO MORE THAN 12% OF MATERIAL CAN PASS THE NO. 200 SIEVE.
NOTES / LEGEND:

1. GENERAL NOTES ON SHEET 2 OF 4 FOR MORE INFORMATION.

2. DETECTABLE WARNING SURFACE - - - - - - -
DETECTED PARALLEL CURB RAMP - - - - - - -
DETECTED PERPENDICULAR CURB RAMP - - - - - - -
DETECTED TRANSITION TO STREET - - - - - - -
DETECTED PLANTING OR OTHER NON-WALKING SURFACE - - - - - - -
DETECTED DRAWN WITHIN RADIUS - - - - - - -

3. GENERAL NOTES:
DETECTED PLANTING OR OTHER NON-WALKING SURFACE - - - - - - -
DETECTED PERPENDICULAR RAMP LIMITS - - - - - - -
DETECTED TRANSITION TO STREET - - - - - - -
DETECTED PLANTING OR OTHER NON-WALKING SURFACE - - - - - - -
DETECTED DRAWN WITHIN RADIUS - - - - - - -

4. DETECTABLE WARNING SURFACE - - - - - - -
DETECTED PARALLEL CURB RAMP - - - - - - -
DETECTED PERPENDICULAR CURB RAMP - - - - - - -
DETECTED TRANSITION TO STREET - - - - - - -
DETECTED PLANTING OR OTHER NON-WALKING SURFACE - - - - - - -
DETECTED DRAWN WITHIN RADIUS - - - - - - -

5. GENERAL NOTES:
DETECTED PLANTING OR OTHER NON-WALKING SURFACE - - - - - - -
DETECTED PERPENDICULAR RAMP LIMITS - - - - - - -
DETECTED TRANSITION TO STREET - - - - - - -
DETECTED PLANTING OR OTHER NON-WALKING SURFACE - - - - - - -
DETECTED DRAWN WITHIN RADIUS - - - - - - -

6. DETECTABLE WARNING SURFACE - - - - - - -
DETECTED PARALLEL CURB RAMP - - - - - - -
DETECTED PERPENDICULAR CURB RAMP - - - - - - -
DETECTED TRANSITION TO STREET - - - - - - -
DETECTED PLANTING OR OTHER NON-WALKING SURFACE - - - - - - -
DETECTED DRAWN WITHIN RADIUS - - - - - - -

7. GENERAL NOTES:
DETECTED PLANTING OR OTHER NON-WALKING SURFACE - - - - - - -
DETECTED PERPENDICULAR RAMP LIMITS - - - - - - -
DETECTED TRANSITION TO STREET - - - - - - -
DETECTED PLANTING OR OTHER NON-WALKING SURFACE - - - - - - -
DETECTED DRAWN WITHIN RADIUS - - - - - - -

8. DETECTABLE WARNING SURFACE - - - - - - -
DETECTED PARALLEL CURB RAMP - - - - - - -
DETECTED PERPENDICULAR CURB RAMP - - - - - - -
DETECTED TRANSITION TO STREET - - - - - - -
DETECTED PLANTING OR OTHER NON-WALKING SURFACE - - - - - - -
DETECTED DRAWN WITHIN RADIUS - - - - - - -

9. GENERAL NOTES:
DETECTED PLANTING OR OTHER NON-WALKING SURFACE - - - - - - -
DETECTED PERPENDICULAR RAMP LIMITS - - - - - - -
DETECTED TRANSITION TO STREET - - - - - - -
DETECTED PLANTING OR OTHER NON-WALKING SURFACE - - - - - - -
DETECTED DRAWN WITHIN RADIUS - - - - - - -

10. DETECTABLE WARNING SURFACE - - - - - - -
DETECTED PARALLEL CURB RAMP - - - - - - -
DETECTED PERPENDICULAR CURB RAMP - - - - - - -
DETECTED TRANSITION TO STREET - - - - - - -
DETECTED PLANTING OR OTHER NON-WALKING SURFACE - - - - - - -
DETECTED DRAWN WITHIN RADIUS - - - - - - -

11. GENERAL NOTES:
DETECTED PLANTING OR OTHER NON-WALKING SURFACE - - - - - - -
DETECTED PERPENDICULAR RAMP LIMITS - - - - - - -
DETECTED TRANSITION TO STREET - - - - - - -
DETECTED PLANTING OR OTHER NON-WALKING SURFACE - - - - - - -
DETECTED DRAWN WITHIN RADIUS - - - - - - -

12. DETECTABLE WARNING SURFACE - - - - - - -
DETECTED PARALLEL CURB RAMP - - - - - - -
DETECTED PERPENDICULAR CURB RAMP - - - - - - -
DETECTED TRANSITION TO STREET - - - - - - -
DETECTED PLANTING OR OTHER NON-WALKING SURFACE - - - - - - -
DETECTED DRAWN WITHIN RADIUS - - - - - - -
Curb Ramps

1. Provide a curb ramp or blended transition at each pedestrian street crossing.

2. All slopes shown are maximum allowable. Cross a slope of 1:20 and lesser running slopes on the curb ramp unless otherwise directed.

3. Width of detectable warning surface on sloping ramp is 2 inches minimum. Cross a slope of 1:20 and lesser running on the curb ramp unless otherwise directed.

4. The minimum slope length is 5 feet, where the surface is adjacent to the back of curb. The maximum slope length is 10 feet. Lengths cannot be divided due to this constraint. Where a curb ramp is required to be placed at more than one location, the total length should be divided as shown on the plans.

5. Turning spaces shall be 5 x 5 minimum. Cross a slope of 1:20 and lesser running on the curb ramp unless otherwise directed.

6. Curbs shown on the plans are considered part of the curb ramp unless otherwise shown.

7. Provide flared sides where the pedestrian circulation path crosses the curb ramp. Flared slopes shall be not less than 6 inches maximum, measured parallel to the curb. Reflected curbs may be used only were adjacent sidewalks would not normally cross the curb. Areas where the adjacent surface is polished, substantially processed, 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. (2017)

9. To serve as a pedestrian refuge area, the median should be a minimum of 6 feet wide, measured from land curb to land curb, with the width of the street.

10. Install a curb ramp or blended transition at each pedestrian street crossing.

11. Crosswalk openings, crosswalk markings and curb ramps locations should be as shown. In the plans. The locations where crosswalk markings are not required, curb ramps shall align with crosswalk crossings unless otherwise directed.

12. Provide curb ramps to connect the pedestrian access route of each pedestrian street crossing. Reflected curbs are not required on curb ramps.

13. Curb ramps and landings shall be constructed and paid for in accordance with Item 531.

14. Additional information on curb ramp location, design, and texture may be found in the latest draft of the Proposed Guidelines for Pedestrian Facilities in the Public Right of Way. (2017)

15. The least possible grade should be used to maximize accessibility. The running slope of sidewalks and crosswalks within the public right of way shall be set at 5% or less. Grades of 5% or less are not permitted.

16. Changes in level greater than 1/4 inch are not permitted.

17. Curve warnings shall be located so that the edge nearest the curb line is adjacent to the back of curb. Curve warnings shall be located so that the edge nearest the curb line is adjacent to the back of curb. Curve warnings may be provided at the top of the transition as long as the intersection is provided in the latest draft of the Proposed Guidelines for Pedestrian Facilities in the Public Right of Way. (2017)

18. 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 detectable warning paver unit material meeting all requirements of ASTM C-936, C-33, or clear ground space.

19. Provide curb ramps or blended transitions at each pedestrian street crossing. Reflected curbs are not required on curb ramps.

20. Provide curb ramps or blended transitions at each pedestrian street crossing. Reflected curbs are not required on curb ramps.

21. Detectable warning materials shall meet ADA Compliant Materials Specification 250.4360 and be listed on the Federal Procurement List. Final products shall be selected in accordance with manufacturer's specifications.

22. Detectable warning materials shall be firm, smooth and not reflect light.

23. 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. The surface shall be placed at the center of the pedestrian travel, and extend the full width of the curb ramp or landing.

24. Detectable warning surfaces shall be located so that the edge nearest the curb line is adjacent to the back of curb. Detectable warning surfaces may be placed along the center medians.

25. Detectable warning surfaces shall be located so that the edge nearest the curb line is adjacent to the back of curb. Detectable warning surfaces may be placed along the center medians.

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27. Detectable warning surfaces shall be located so that the edge nearest the curb line is adjacent to the back of curb. Detectable warning surfaces may be placed along the center medians.

28. Detectable warning surfaces shall be located so that the edge nearest the curb line is adjacent to the back of curb. Detectable warning surfaces may be placed along the center medians.

29. Detectable warning surfaces shall be located so that the edge nearest the curb line is adjacent to the back of curb. Detectable warning surfaces may be placed along the center medians.

30. Changes in slope greater than 1/4 inch are not permitted.

31. Changes in level greater than 1/4 inch are not permitted.

32. Changes in level greater than 1/4 inch are not permitted.

33. Changes in level greater than 1/4 inch are not permitted.

34. Changes in level greater than 1/4 inch are not permitted.

35. Changes in level greater than 1/4 inch are not permitted.

36. Changes in level greater than 1/4 inch are not permitted.

37. Changes in level greater than 1/4 inch are not permitted.

38. Changes in level greater than 1/4 inch are not permitted.

39. Changes in level greater than 1/4 inch are not permitted.

40. Changes in level greater than 1/4 inch are not permitted.

41. Changes in level greater than 1/4 inch are not permitted.

42. Changes in level greater than 1/4 inch are not permitted.
NOTE:

- MOW BORDERS BETWEEN OBSTRUCTIONS.
- MIN. DISTANCE (POLE, HYDRANT, ETC.)
- OBSTRUCTION CURB 2'-0"
- OBSTRUCTION MAX. LENGTH OF CABINET, MAILBOX, ETC.

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

SIDEWALK TREATMENT AT DRIVEWAYS

NOTE:
- DRIVEWAYS CROSS THE PEDESTRIAN ROUTE
- SIDEWALKS USED FOR PEDESTRIAN ROUTE
- DRIVEWAYS WIDENED AT CURB OF PEDESTRIAN ROUTE
- SIDEWALKS SHOULD BE報 AT 10% MAX SLOPE
- WHERE DRIVEWAYS CROSS THE PEDESTRIAN ROUTE,
  * 4' MIN. APRON OFFSET SIDEWALK
  * 2% MAX.
  * 8.3% MAX.
  * 5' USUAL

WIDE SIDEWALK

NOTE:
- NON-WALKING SURFACE
- PLANTING OR OTHER

RAMP SIDEWALK

NOTE:
- RAMP SIDEWALK DETECTABLE WARNING ARE NOT REQUIRED.
- GRADE LESS THAN OR EQUAL TO 5%. HANDRAIL AND
  IF CURB HEIGHT IS GREATER THAN 6 INCHES, USE

NOTES:
- TO PEDESTRIAN PUSH BUTTON CLEAR SPACE ADJACENT
- DETECTION BARRIER FOR VERTICAL CLEARANCE <= 60"
- WHEN AN OBSTRUCTION OF A HEIGHT GREATER THAN 27" FROM THE SURFACE WOULD CREATE A PROTRUSION OF MORE THAN 4" INTO THE PEDESTRIAN CIRCULATION ZONE OR RESULT IN OBSTRUCTION OBSTRUCTIONS OF A HEIGHT GREATER THAN 27" MAX.

TO PEDESTRIAN CIRCULATION AREAS, CONSTRUCT ADDITIONAL CURB OR FOUNDATION OF MORE THAN 4" INTO THE PEDESTRIAN CIRCULATION ZONE.
WIDE SIDEWALK

NOTE:
- DRIVEWAYS OF LESS THAN 4' INTO PEDESTRIAN CIRCULATION ZONE.

APRON

NOTE:
- DRIVEWAY PAYMENTS:
  * 4' MIN.
  * 2% MAX.
  * 8.3% MAX.

APRON

NOTE:
- DRIVEWAY PAYMENTS:
  * 4' MIN.
  * 2% MAX.
  * 8.3% MAX.

APRON

NOTE:
- DRIVEWAY PAYMENTS:
  * 4' MIN.
  * 2% MAX.
  * 8.3% MAX.

APRON

NOTE:
- DRIVEWAY PAYMENTS:
  * 4' MIN.
  * 2% MAX.
  * 8.3% MAX.

APRON

NOTE:
- DRIVEWAY PAYMENTS:
  * 4' MIN.
  * 2% MAX.
  * 8.3% MAX.

APRON

NOTE:
- DRIVEWAY PAYMENTS:
  * 4' MIN.
  * 2% MAX.
  * 8.3% MAX.

APRON

NOTE:
- DRIVEWAY PAYMENTS:
  * 4' MIN.
  * 2% MAX.
  * 8.3% MAX.

APRON

NOTE:
- DRIVEWAY PAYMENTS:
  * 4' MIN.
  * 2% MAX.
  * 8.3% MAX.

APRON

NOTE:
- DRIVEWAY PAYMENTS:
  * 4' MIN.
  * 2% MAX.
  * 8.3% MAX.

APRON

NOTE:
- DRIVEWAY PAYMENTS:
  * 4' MIN.
  * 2% MAX.
  * 8.3% MAX.

APRON

NOTE:
- DRIVEWAY PAYMENTS:
  * 4' MIN.
  * 2% MAX.
  * 8.3% MAX.

APRON

NOTE:
- DRIVEWAY PAYMENTS:
  * 4' MIN.
  * 2% MAX.
FORT BEND COUNTY
ENGINEERING DEPARTMENT

AS DEFINED IN PLANS
AND STAB. SUBGRADE
PAVEMENT, BASE
6 "
H E I G H T V A R I E S
6 "
M A X .
2-1-22

ENGINEERING DEPARTMENT

REINFORCED CONCRETE PIPE

REINFORCED CONCRETE PIPE
WITH SEAL SLAB

REINFORCED CONCRETE PIPE

REINFORCED CONCRETE PIPE
WITH SEAL SLAB

GENERAL NOTES:
1. USE RCP LARGER THAN 30" DIAMETER, CONCRETE COLLARS MUST BE APPROVED BY THE ENGINEER OF RECORD
2. ALL JOINTS IN ROW SHALL BE BACKFILLED WITH 1.5 SACK CEMENT STABILIZED SAND TO WITHIN 1' OF SUBGRADE, COMPACTED TO 95% STANDARD PROCTOR DENSITY
CAST IN PLACE CONCRETE
STORM SEWER MANHOLE DETAILS

GENERAL NOTES:
- See Standard or Detail Sheet For Excavation And Backfill Diagrams.
- All Manholes In Graded Areas Shall Be Built To Stage I And Finished After All Grading Operations Are Substantially Completed.
- But Not Less Than 6 Inches Above Highest Pipe.
- T" Thickness Of Shell Equals That Of Larger Diameter Pipe.
- Optional Monolithic Or Precast Designs Shall Be Signed & Sealed By A Registered Professional Engineer.
- All Castings Shall Meet Requirements Of The Entity, Whether City Limits Or ETJ. The Project Falls Within.

MONOLITHIC SEWERS
- Cl "C" Concrete
- Cl "A" Concrete

PRECAST PIPE SEWERS
- Treated Base
- Portland Cement
- Heavy Duty 30" ID Ring as Required. Vulcan No.V-1419 w/ribbed cover, Neenah No.R1740-BTX

PLAN
OVER 12' HEIGHT

Diameter + 2'-0" 5'-6" Min.
Diameter + 1'-4" 4'-10" Min.
12' HEIGHT & UNDER

PLAN
CAST IRON MANHOLE STEPS
(In Stock Locally)

Diameter + 2'-0" 8" Concrete Wall
Variable

SECTION A-A

SECTION B-B

PLAN
END VIEW

MANHOLE - TYPE A
FOR PIPES 54" AND SMALLER

PORT BEND COUNTY
ENGINEERING DEPARTMENT
GENERAL NOTES:

1. CONCRETE AND MATERIALS SHALL MEET REQUIREMENTS OF ITEM 472 "INLETS".

2. CONCRETE FOR INLET: MINIMUM 4,000 PSI IN 28 DAYS.

3. PRECAST STRUCTURE TO MEET ASTM C913.

4. FRAME AND GRATE SHALL BE EAST JORDAN IRON WORKS MODEL V-4880-1 (OPEN AREA 473 SQ. IN.) OR APPROVED EQUAL.

5. SHOP DRAWINGS SHALL BE REQUIRED FOR PRECAST CONSTRUCTION OF INLET. IF THE ENGINEER OF RECORD SPECIFIES A CAST-IN-PLACE INLET, THE CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING A DETAILED DRAWING, SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF TEXAS.

6. USE NON-SHRINK GROUT FOR WATER-TIGHT PIPE CONNECTIONS AT GROUT OPENINGS (2" MIN. ALL AROUND).

7. CONCRETE RIM (3,000 PSI) USE NON-SHRINK GROUT FOR JOINT CONNECTIONS.

8. CEMENT STABILIZED SAND SHALL EXTEND TO THE BOTTOM OF PAVEMENT OR SLOPE PAVING, OR 12 INCHES BELOW THE SURFACE IF INLET IS LOCATED IN AN UNPAVED AREA.
GENERAL NOTES:

1. CONSTRUCTION AND MATERIALS SHALL MEET REQUIREMENTS OF
   MEM 127 "PLAN".
2. PRECAST: MINIMUM 4,000 PSI IN 28 DAYS
3. FRAME AND GRATE SHALL BE EAST JORDAN IRON WORKS MODEL
   V-4882-3 FRAME AND V-4880-2 GRATE WITH (4) BOLT SLOTS
4. STAGE I OF THE INLET SHALL BE PRECAST.
   STAGE II SHALL BE CAST-IN-PLACE.
5. USE NON-SHRINK GROUT FOR WATER-TIGHT PIPE CONNECTIONS AT
   GROUT OPENINGS (2" MIN. ALL AROUND)
GENERAL NOTES:
1. Construction and materials shall meet requirements of Article 470.
2. Precast structure to meet ASTM C913. Frame with either plate or grate shall be East Jordan Iron Works Model V-4241 or approved equal.
3. Concrete for inlet: Minimum 4,000 PSI in 28 days.
4. Construction of inlet. Stabilized subgrade extends up to bottom of proposed pavement.
5. Use non-shrink grout for water-tight pipe connections at grout openings (2" min. all around) and at joint connections.
6. Knock-outs are not permissible for precast construction of inlet.
7. Engineer of record shall incorporate a detailed drawing into the contract documents.
8. If the engineer of record specifies a cast-in-place inlet, he/she shall incorporate a detailed drawing into the contract documents. However, if the contractor elects to construct a cast-in-place inlet, the contractor shall be responsible for providing a detailed drawing, signed and sealed by a registered professional engineer licensed to practice in the state of Texas.
9. General notes shall be marked as tentative and shall be subject to change without notice.

NOTES OF RECORD:
- Use non-shrink grout for water-tight pipe connections at grout openings (2" min. all around).
- Knock-outs are not permissible for precast construction of inlet.
- If the engineer of record specifies a cast-in-place inlet, he/she shall incorporate a detailed drawing into the contract documents.
- If the contractor elects to construct a cast-in-place inlet, the contractor shall be responsible for providing a detailed drawing, signed and sealed by a registered professional engineer licensed to practice in the state of Texas.

GENERAL NOTES:
- Use non-shrink grout for water-tight pipe connections at grout openings (2" min. all around).
- Knock-outs are not permissible for precast construction of inlet.
- If the engineer of record specifies a cast-in-place inlet, he/she shall incorporate a detailed drawing into the contract documents.
- If the contractor elects to construct a cast-in-place inlet, the contractor shall be responsible for providing a detailed drawing, signed and sealed by a registered professional engineer licensed to practice in the state of Texas.

NOTES OF RECORD:
- Use non-shrink grout for water-tight pipe connections at grout openings (2" min. all around).
- Knock-outs are not permissible for precast construction of inlet.
- If the engineer of record specifies a cast-in-place inlet, he/she shall incorporate a detailed drawing into the contract documents.
- If the contractor elects to construct a cast-in-place inlet, the contractor shall be responsible for providing a detailed drawing, signed and sealed by a registered professional engineer licensed to practice in the state of Texas.
GENERAL NOTES:
1. CONCRETE AND MATERIALS SHALL MEET REQUIREMENTS OF ITEM 472 "INLETS".
2. PRECAST STRUCTURE TO MEET ASTM C913 OR APPROVED EQUAL.
3. FRAME WITH EITHER SOLID PLATE OR GRATE SHALL BE EAST JORDAN IRON WORKS MODEL V-4243 OR APPROVED EQUAL.
4. CAST-IN-PLACE INLET, HE/SHE SHALL INCORPORATE A DETAILED DRAWING INTO THE CONTRACT DOCUMENTS. HOWEVER, IF THE CONTRACTOR ELECTS TO CONSTRUCT A CAST-IN-PLACE INLET, THE CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING A DETAILED DRAWING, SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF TEXAS.
5. CONSTRUCTION AND MATERIALS SHALL MEET REQUIREMENTS OF ITEM 472 "INLETS".
6. APPROPRIATE DOWEL BARS WILL BE REQUIRED FOR PRECAST CONSTRUCTION OF INLET.
7. HORIZONTAL KNOCK-OUTS ARE NOT PERMISSIBLE FOR PRECAST CONSTRUCTION OF INLET.
8. MINIMUM ELEVATION OR AS SPECIFIED BY THE ENGINEER OF RECORD.

- USE NON-SHRINK GROUT FOR WATER-TIGHT PIPE CONNECTIONS AT GROUT OPENINGS (2" MIN. ALL AROUND)
CONSTRUCTION AND MATERIALS SHALL MEET REQUIREMENTS OF:

TOP OF CURB ELEVATION, DITCH AND STORM SEWER FLOWLINES ARE

6"

SLOPE

PAVING SHALL CONFORM TO THE REQUIREMENTS OF ITEM 491

6"

10"

4'-0"

RJS

9 3/4"

6"

3"

REVISIONS

2'-6"

DATE

23 :1 MAX.

NAME

5'-2" MINIMUM OR AS SPECIFIED BY THE ENGINEER OF RECORD.

(see note 9)

ENGINEERING DEPARTMENT

SECTION A-A

PLAN VIEW

SECTION A-A

SECTION A-A

SECTION B-B

SECTION B-B

SECTION C-C

SECTION C-C

GENERAL NOTES:

1. CONSTRUCTION AND MATERIALS SHALL MEET REQUIREMENTS OF

ITEM 472 "Pavement"

2. CONCRETE PAVING SHALL CONFORM TO THE REQUIREMENTS OF NEW 481

REINFORCED CONCRETE PAVING AND PAYMENT SHALL BE

REVIEWED IN THE DETAIL OF THE PLAN.

3. CONCRETE STABILIZED SAND SHALL BE USED FOR BACKFILL OF THE PAVEMENT

4. CONCRETE SHALL BE V-4882-3 AND GRATE MODEL V-4880-2 WITH (4) BOLT SLOTS

5. ISOLATION JOINTS FOR CONCRETE PAVING ISOLATION JOINT BOARD (TYP.)

6. EAST JORDAN IRON WORKS MODEL V-4243 OR APPROVED EQUAL.

7./photos AND PROFILE SHEETS SHOWN ON THE PLAN AND PROFILE SHEETS.

8. USE PRECAST UNITS FOR STAGE I CONSTRUCTION. CAST-IN-PLACE CONCRETE FOR INLET: MINIMUM 4,000 PSI IN 28 DAYS

9. DOWEL BARS (4) #3 X 1'-0" LG.

10. FROM THE B.O.C. TO THE R.O.W. IS 9'-6".

11. #5 CORNER BARS (45º) 6" C.C. #4 @ 12" O.C.

12. BACKFILL EXTENDS UP TO BOTTOM LIMITS OF CEMENT STABILIZED SAND

13. DOWEL BARS #5 X 18" LONG

14. USE NON-SHRINK GROUT FOR WATER-TIGHT PIPE (2" MIN. ALL AROUND)

15. CONSULTANT LOGO
SHOP DRAWINGS WILL BE REQUIRED FOR THE PRECAST 5'-0" RIGID STRUCTURE.

IF GOING 1'-0" UNGRADED 의사, minimum or as specified by the engineer of use.

6" NE 10"

NAME CONSTRUCTION AND MATERIALS SHALL MEET REQUIREMENTS.

PROJECT TITLE: ARJS

DATE: 5'-0" TYPE "C-1"

REVISIONS

KNOWLEDGE ARE NOT PERMISSIBLE FOR THE PRECAST 6" GUTTER.

NORMAL GUTTER LINE

STABILIZED SUBGRADE

TYPE "C-2A": INLET WITH ONE DOUBLE EXTENSION (10'-0" LONG) ON ONE SIDE

TYPE "C-2": INLET WITH ONE EXTENSION (5'-0" LONG) ON EACH SIDE

TYPE "C-1": INLET WITH ONE EXTENSION (5'-0" LONG)

TYPE "C": INLET ONLY - NO EXTENSION

INLET NOTES:

* FOR TYPE "C-2A" INLETS, PROVIDE A CENTER 6"x6" COLUMN IN THE ORIGINAL STANDARD ISSUED.

TOP OF CURB

CURB LINE BETWEEN ALL EXTENSIONS.

CONCRETE PAVEMENT

SAND-CEMENT MORTAR SHAPED W/ 2,500 PSI

INVERT CHANNEL 10'-0" TYPE "C-2A"

3'-0" (MIN. 1" PER 12" SLOPE)

BOARD (TYP.)

ISOLATION JOINT

3/4" REDWOOD BOARD (TYP.)

BACK OF CURB

LIMITS OF CEMENT STABILIZED SUBGRADE.

CONCRETE PAVEMENT

SAND BACKFILL EXTENDS UP TO 1'-0"

SAND BACKFILL EXTENDS UP TO 2'-6"

LIMITS OF CEMENT STABILIZED SUBGRADE.

CONCRETE PAVEMENT

SAND BACKFILL EXTENDS UP TO 2'-0 3/4"

LIMITS OF CEMENT STABILIZED SUBGRADE.

CONCRETE PAVEMENT

SAND BACKFILL EXTENDS UP TO 3'-0"

LIMITS OF CEMENT STABILIZED SUBGRADE.

CONCRETE PAVEMENT

SAND BACKFILL EXTENDS UP TO 1'-0"

LIMITS OF CEMENT STABILIZED SUBGRADE.

CONCRETE PAVEMENT

SAND BACKFILL EXTENDS UP TO 2'-0 3/4"

LIMITS OF CEMENT STABILIZED SUBGRADE.

CONCRETE PAVEMENT

SAND BACKFILL EXTENDS UP TO 3'-0"

LIMITS OF CEMENT STABILIZED SUBGRADE.

CONCRETE PAVEMENT

SAND BACKFILL EXTENDS UP TO 1'-0"

LIMITS OF CEMENT STABILIZED SUBGRADE.

CONCRETE PAVEMENT

SAND BACKFILL EXTENDS UP TO 2'-0 3/4"

LIMITS OF CEMENT STABILIZED SUBGRADE.

CONCRETE PAVEMENT

SAND BACKFILL EXTENDS UP TO 3'-0"

LIMITS OF CEMENT STABILIZED SUBGRADE.

CONCRETE PAVEMENT

SAND BACKFILL EXTENDS UP TO 1'-0"

LIMITS OF CEMENT STABILIZED SUBGRADE.

CONCRETE PAVEMENT

SAND BACKFILL EXTENDS UP TO 2'-0 3/4"

LIMITS OF CEMENT STABILIZED SUBGRADE.

CONCRETE PAVEMENT

SAND BACKFILL EXTENDS UP TO 3'-0"

LIMITS OF CEMENT STABILIZED SUBGRADE.

CONCRETE PAVEMENT

SAND BACKFILL EXTENDS UP TO 1'-0"

LIMITS OF CEMENT STABILIZED SUBGRADE.

CONCRETE PAVEMENT

SAND BACKFILL EXTENDS UP TO 2'-0 3/4"

LIMITS OF CEMENT STABILIZED SUBGRADE.

CONCRETE PAVEMENT

SAND BACKFILL EXTENDS UP TO 3'-0"

LIMITS OF CEMENT STABILIZED SUBGRADE.

CONCRETE PAVEMENT

SAND BACKFILL EXTENDS UP TO 1'-0"

LIMITS OF CEMENT STABILIZED SUBGRADE.

CONCRETE PAVEMENT

SAND BACKFILL EXTENDS UP TO 2'-0 3/4"

LIMITS OF CEMENT STABILIZED SUBGRADE.

CONCRETE PAVEMENT

SAND BACKFILL EXTENDS UP TO 3'-0"

LIMITS OF CEMENT STABILIZED SUBGRADE.

CONCRETE PAVEMENT

SAND BACKFILL EXTENDS UP TO 1'-0"

LIMITS OF CEMENT STABILIZED SUBGRADE.

CONCRETE PAVEMENT

SAND BACKFILL EXTENDS UP TO 2'-0 3/4"

LIMITS OF CEMENT STABILIZED SUBGRADE.

CONCRETE PAVEMENT

SAND BACKFILL EXTENDS UP TO 3'-0"

LIMITS OF CEMENT STABILIZED SUBGRADE.

CONCRETE PAVEMENT

SAND BACKFILL EXTENDS UP TO 1'-0"

LIMITS OF CEMENT STABILIZED SUBGRADE.

CONCRETE PAVEMENT

SAND BACKFILL EXTENDS UP TO 2'-0 3/4"

LIMITS OF CEMENT STABILIZED SUBGRADE.

CONCRETE PAVEMENT

SAND BACKFILL EXTENDS UP TO 3'-0"

LIMITS OF CEMENT STABILIZED SUBGRADE.

CONCRETE PAVEMENT

SAND BACKFILL EXTENDS UP TO 1'-0"

LIMITS OF CEMENT STABILIZED SUBGRADE.

CONCRETE PAVEMENT

SAND BACKFILL EXTENDS UP TO 2'-0 3/4"

LIMITS OF CEMENT STABILIZED SUBGRADE.

CONCRETE PAVEMENT

SAND BACKFILL EXTENDS UP TO 3'-0"

LIMITS OF CEMENT STABILIZED SUBGRADE.
ON A STANDARD "C" MANHOLE.

1. TYPE "E" INLET TOP CAN BE CONSTRUCTED

NOTE:

PLAN

SECTION A

SECTION B

# 4 3'-6" LONG

CONCRETE SLAB

# 5 x 18"

FRAME AND COVER SEE 32" STANDARD MANHOLE

CONCRETE SLAB

3 " C L R

8"

3'-0"

6 

VARIES

9 "

3 

9 "

DRAWN BY:

CK'D BY:

SCALE:

DATE:

NO.

REVISIONS

DATE

NAME

PROJECT TITLE:

FORT BEND COUNTY

ENGINEERING DEPARTMENT

APPROVED BY:

SHEET DESCRIPTION:

SHEET NO:

FBCED

STANDARD

INIT

INIT

2-1-22

RJS

ORIGINAL STANDARD ISSUED 1

TYPE "E" INLET DETAILS

1" = 4'
PLAN VIEW

ELEVATION

INLET TOP
CROSS SECTION

NOTES:

1. INLET WALLS MAY BE EXTENDED USING PRECAST RISER SECTION.

2. INLET TOPS MUST BE SECURED TO THE INLET WALL USING 6' #6 DOWELS AND GROUTED A MINIMUM DEPTH OF 5' INTO THE PAVEMENT.

3. INLET WALLS SHALL BE CEMENT STABILIZED SAVD TO THE TOP OF FIRST STAGE.

4. ALL STORM SEWER COVERS SHALL COMPLY WITH LOCAL CITY/ETJ REQUIREMENTS.

SEE NOTE 4

SEE NOTE 4
PROJECT TITLE: FORT BEND COUNTY
ENGINEERING DEPARTMENT

ENGINEER: P.E. SERIAL No.

BIDDING, OR PERMIT PURPOSES
NOT INTENDED FOR CONSTRUCTION,
DOCUMENT INCOMPLETE:

SHEET DESCRIPTION:
SHEET NO:
CONSULTANT LOGO
ENGINEERS SEAL

INLET TOP CROSS SECTION

CENTRELINE OF RING COVER

1'-9"

12" 6"

#3 DOWELS MIN. 6" LONG ON 12" CENTERS EPOXY

NOTE:

1. INLET WALLS MAY BE EXTENDED USING PRECAST RISER SECTION.

2. INLET TOPS MUST BE SECURED TO THE INLET WALL USING #6 DOWELS DRILLED AND GROUTED A MINIMUM DEPTH OF 5" INTO THE INLET WALL.

3. INLET BACKFILL SHALL BE CEMENT STABILIZED SAND TO THE TOP OF FIRST STAGE.

4. ALL STORM SEWER COVERS SHALL COMPLY WITH LOCAL CONTROL REQUIREMENTS.

FORT BEND COUNTY
ENGINEERING DEPARTMENT

2-1-22
ITEM 1

(1) 5/8" HGR NUT (N050)

ITEM 2

(1) 3/4" NUT (N030)

ITEM 3

(1) 5/8" X 1-1/4" SPLICE BOLT (B580122)

ITEM 4

INSTALL NEW FOUNDATION TUBES

ITEM 5

REMOVE WOOD POST

ITEM 6

INSTALL NEW ITEM 14 & 15

ITEM 7

31" MBGF STANDARD AND ALL SMALL HARDWARE CABLE ANCHOR ASSEMBLY

ITEM 8

REUSE EXISTING

ITEM 9

(2) 5/16" HEX NUT

ITEM 10

(3) 5/8" WASHERS

ITEM 11

(1) 3/4" X 8-1/2" HEX BOLT (GRD 5)

ITEM 12

INSTALL NEW POST 1 CONNECTION DETAIL B

ITEM 13

NEW GROUND STRUT AND FOR POST 1 CONNECTION DETAIL A

ITEM 14

REUSE EXISTING

ITEM 15

NEW GROUND STRUT

ITEM 16

INSTALL NEW ITEM 10,11,12

ITEM 17

OBJECT MARKER

NOTE:

- (2) 12'-6" MBGF PANELS SHOWN.
- (1) 25'-0" MBGF PANEL IS ALLOWABLE.

- REUSE EXISTING END PANEL
- END SECTION 12'-6" POST
- DEPTH 6'-0" POST
- HEIGHT 31" RAIL
- OBJECT MARKER
- INSERT HOLES
- CURT WOOD POST 3 THRU 8
- FRONT VIEW
- USE LAYER "C-NON-PRINT"
- INSTRUCTIONS ON LAYER "C-NON-PRINT"
- HEAD THERE IS NO NEED TO REPLACE THE IMPACT HEAD OR OBJECT MARKER AS LONG
- AS IT IS NOT DAMAGED.
- IS NOT INTENDED FOR CONSTRUCTION,
- CONTACT THE MANUFACTURER, AND REFER TO THE LATEST ROADWAY MBGF STANDARD
- PRODUCT DESCRIPTION ASSEMBLY MANUAL (PUBLICATION~062717).
- OBJECT MARKER
- INSERT HOLES
- CURT WOOD POST 3 THRU 8
- FRONT VIEW
- USE LAYER "C-NON-PRINT"

FORT BEND COUNTY
ENGINEERING DEPARTMENT
1. The type of post (round wood post, rectangular wood post, or steel post) will be as shown in the plans. The exact position of driller shall be shown on the plans or be directed by the Engineer. Steel posts may be galvanized in accordance with item 446, "Galvanizing.

2. All post elements shall be made from materials that meet or exceed the requirements of item 446, "Steel Guard Rail Components" as updated by the Engineer. The Contractor shall supply and install all metal guard rail components to meet the requirements of item 446. The length of posts shall be 25'-0", or 12'-6" (nom.) lengths. Rail elements may have slotted holes at 12'-6" C-C (See General Note 2). Additional length of rail may be supplied to accommodate the downstream and upstream guardrail sections.

3. Button head "splice" bolts (MBGF-3/5/7/9) shall be of sufficient length to extend through the full thickness of the rail. MBGF-3/5/7/9 and 3/4" washer (MBGF-9/10/11) are used to hold the end of a rail and provide a positive connection between rails. The length of "splice" bolts (MBGF-3/5/7/9) has been sized to be of sufficient length to extend through the full thickness of the rail, washer and nut.

4. Fittings (bolts, nuts, and washers) shall be galvanized in accordance with item 446, "Galvanizing." Fittings shall be supplementary to the bid list.

5. Crown shall be widened to accommodate the Metal Beam Guard Fence.

6. The lateral approach to the guard fence shall have a maximum slope of 1V:10H.

7. The lateral approach to the guard fence shall have a maximum slope of 1V:10H.

8. Unless otherwise shown in the plans, a composite material post and/or block shall be fabricated in accordance with the requirements of item 446, "Composite Material Posts and Blocks." The construction of the post and/or block shall be such that the guardrail can be accommodated downstream anchor terminal (DAT) and the transition sections of guardrail.

9. Where "splice" bolts (MBGF-3/5/7/9) are used, the selected length shall be of sufficient length to extend through the full thickness of the rail, washer, and nut.

10. The lateral approach to the guard fence shall have a maximum slope of 1V:10H.

11. Special fabrication will be required for transitions having a curvature of less than 500 feet.

12. Unless otherwise shown in the plans, a composite material post and/or block shall be fabricated in accordance with the requirements of item 446, "Composite Material Posts and Blocks." The construction shall be such that the guardrail can be accommodated downstream anchor terminal (DAT) and the transition sections of guardrail.

13. For posts subject to loads or stresses between cross box elements, use of a cross-brace connection between boxes is required. See details 7-1/4" x 7-1/4" on TEXAS Bridge Standards Manual.
FORT BEND COUNTY

PRECINCT (NO.)

A MOBILITY PROJECT TO SERVE YOU

(PROJECT NAME)

(CONTRACTOR)

(COST)

FOR INFORMATION CALL 281-633-7500

Vincent M. Morales Jr., PCT 1
Grady Prestage, PCT 2
Andy Meyers, PCT 3
Ken R. DeMerchant, PCT 4

COMMISSIONERS COURT
KP George, County Judge

FOR INTERIM REVIEW ONLY

ENGINEERING DEPARTMENT

FORT BEND COUNTY
YOUR HARD EARNED TAX MONEY WORKING FOR YOU

PROJECT NAME

(KP George, County Judge)

COMMISSIONER PRECINCT 3

COMMISSIONERS COURT

Andy Meyers

Vincent M. Morales, Jr., Commissioner PCT 1

Grady Prestage, Commissioner PCT 2

Ken R. DeMerchant, Commissioner PCT 4

PROJECT ENGINEER

(CONSULTANT)

PROJECT CONTRACTOR

(CONTRACTOR)

GENERAL NOTES:

1. THE SIGN SHALL HAVE BLACK LETTERS WITH WHITE BACKGROUND.

2. ALL LETTERING SHALL BE EITHER AERIAL FONT OR HELVETICA.

3. THE ENGINEER.

4. THE ENGINEER.

5. ALL BOLTS, SCREWS, NAILS, NUTS AND WASHERS SHALL BE FASTENED WITH COUNTERSUNK FLATHEAD SCREWS 18" C-C AT TOP AND BOTTOM EDGE (LOCATION & HEIGHT OF REMOVABLE PANEL IS UNIQUE TO SIGN TYPE, SEE SIGN TYPE DETAILS FOR LETTERING AND LOCATION OF REMOVABLE PANEL).

6. 4" x 6" POST SHALL BE WOLMANIZED OR PENTACHLOROPHENOL TREATED.

7. GALVANIZED OR CADMIUM PLATED.

8. COATS OF SHERWIN-WILLIAMS KEM-LUSTRA ENAMEL OR EQUAL.

9. ALL WOOD SURFACES SHALL HAVE PRIME COAT AND TWO (2) TREATED.

10. REMOVABLE PANEL SHALL BE 1/2" MARINE PLYWOOD.

DRAWN BY:

CK'D BY:

SCALE:

DATE:

ENGINEER:

P.E. SERIAL No.

APPROVED BY:

INIT

INIT

FORT BEND COUNTY
ENGINEERING DEPARTMENT
1/2" THICK REMOVABLE PANEL FASTENED WITH COUNTERSUNK FLATHEAD SCREWS 18" C-C AT TOP AND BOTTOM EDGE (LOCATION & HEIGHT OF REMOVABLE PANEL IS UNIQUE TO SIGN TYPE, SEE SIGN TYPE DETAILS FOR LETTERING AND LOCATION OF REMOVABLE PANEL)

GENERAL NOTES:

1. THE SIGN SHALL HAVE BLACK LETTERS WITH WHITE BACKGROUND.
2. THE SIGN SHALL BE MOUNTED ON 4" x 6" POSTS AND LOCATED BY THE ENGINEER.
3. LEFT LETTERING SHALL BE EITHER AERIAL FONT OR HELVETICA.
4. THE ENGINEER.
5. ALL LETTERING SHALL BE EITHER AERIAL FONT OR HELVETICA.
6. ALL WOOD SURFACES SHALL HAVE PRIME COAT AND TWO (2) TREATED.
7. COATS OF SHERWIN-WILLIAMS KEM-LUSTRA ENAMEL OR EQUAL.
8. 4" x 6" POST SHALL BE WOLMANIZED OR PENTACHLOROPHENOL GALVANIZED OR CADMIUM PLATED.
9. ALL BOLTS, SCREWS, NAILS, NUTS AND WASHERS SHALL BE REMOVABLE PANEL SHALL BE 1/2" MARINE PLYWOOD.

DRAWN BY: KP George, County Judge
CK'D BY: Ken R. DeMerchant, PCT 4
SCALE: 1"
DATE: 2-1-22
P.E. SERIAL No. 38
APPROVED BY: NONE

PROJECT TITLE: FORT BEND COUNTY ENGINEERING DEPARTMENT
SHEET DESCRIPTION: BIDDING, OR PERMIT PURPOSES NOT INTENDED FOR CONSTRUCTION, DOCUMENT INCOMPLETE: PROJECT FUNDING PROJECT SIGN
SHEET NO: SHEET 4 OF 4
INIT: RJS
ORIGINAL STANDARD ISSUED: 2-1-22
REFERENCES: SHEET 1 OF 4
ELEVATION WITH CORNER POST

For electrical panel board

SECURITY FENCE AND GATE

3 STRANDS 12 1/2 GAUGE BARBED WIRE

2 7/8" O.D. CORNER POSTS (TYP.)

1 5/8" O.D. CENTER BRACE

3/8" TENSION ROD

CLASS "B" CONCRETE (TYP.)

7 GAUGE TENSION WIRE

2" x 9 GAUGE CHAIN LINK MESH

NATURAL GROUND

1.90" O.D. GATE FRAME

3 STRANDS 12 1/2 GAUGE BARBED WIRE

1'-0" (MAX.)

6'-0" (MAX.)

10'-0" (MAX.)

2'-0" (MAX.)

6'-0"

2'-0"

6'-0"
FORT BEND COUNTY ENGINEERING DEPARTMENT
NOTE: ALL DIMENSIONS ARE MINIMUM
AT CORNER ELEVATION

GATE OPENING

ISOMETRIC VIEW

AT CORNER ELEVATION

NOTE: ALL DIMENSIONS ARE MINIMUM

GRADE DEPRESSION DETAIL

2 COMPLETE LOOP OF 9 GAUGE GALVANIZED WIRE TWISTED AND CONNECTED TO EACH STRAND OF BARBED WIRE

DEADMAN

2 COMPLETE LOOP OF 9 GAUGE GALVANIZED WIRE TWISTED AND CONNECTED TO EACH STRAND OF BARBED WIRE

ELEVATION AT GATE OPENING

NOTE: ALL DIMENSIONS ARE MINIMUM

TYPICAL FENCE ELEVATION

FASTENING DETAILS

FOR BARBED WIRE AT WOOD CORNER, OR END POST ASSEMBLY

WESTERN UNION SPLICES

FOR INTERIM REVIEW ONLY

DOCUMENT INCOMPLETE:

NOT INTENDED FOR CONSTRUCTION, BIDDING, OR PERMIT PURPOSES

ENGINEER:

DATE:

DRAWN BY:  CK'D BY:  SCALE:

ENGINEERING DEPARTMENT

FORT BEND COUNTY

APPROVED BY:

SHEET DESCRIPTION:

CONSULTANT LOGO  ENGINEER'S SEAL

(LAYER "C-NON-PRINT")

(LAYER "C-NON-PRINT")

2-1-22

12'-0" MAXIMUM

3'-0"

3'-2"

6'-0"

6" Ø POST

4" Ø TOP LINE POST OR EQUAL
GENERAL NOTES:

1.) CROSSWALK AND TRUCK APRON SHALL BE STAMPED CONCRETE WITH CONTRASTING COLORS.

NOTES:

1. 1.0 LB. OF APPROVED NON-METALLIC FIBER MESH PER C/Y ON 4"x18" CURBS.
2. #4 REBAR CONCRETE TO BE PLACED IN INTERVALS OF 2' (FT) C-C.
3. #4 REBAR CONCRETUAL SHALL BE TIED TO EACH STIRRUP.

CROSS SECTION OF CROSS WALK WITH STAMPED CONCRETE

MOUNTABLE CURB AREA

WIDTH VARIES

18" CURB 6" CONCRETE PAVER 10" STABILIZED SUBGRADE

PERMISSIBLE CONSTRUCTION JOINT

1.0 LBS. APPROVED NON-METALLIC FIBER MESH PER C/Y ON 4"x18" CURBS.

CROSS SECTION OF TRUCK APRON

SPLINTER ISLAND

DIMENSIONS

N.T.S.

4"x18" MOUNTABLE CURB DETAIL

N.T.S.

NOTES:

1. 1.0 LB. OF APPROVED NON-METALLIC FIBER MESH PER C/Y ON 4"x18" CURBS.
2. #4 REBAR CONCRETE TO BE PLACED IN INTERVALS OF 2' (FT) C-C.
3. #4 REBAR CONCRETE SHALL BE TIED TO EACH STIRRUP.

CROSS SECTION OF CROSS WALK WITH STAMPED CONCRETE

MOUNTABLE CURB AREA

WIDTH VARIES

18" CURB 6" CONCRETE PAVER 10" STABILIZED SUBGRADE

PERMISSIBLE CONSTRUCTION JOINT

1.0 LBS. APPROVED NON-METALLIC FIBER MESH PER C/Y ON 4"x18" CURBS.
NOTES: SIGNS ARE SHOWN FOR ONE APPROACH ONLY

SIGNAGE FOR SINGLE LANE ROUNDABOUT

SIGNAGE FOR 2-LANE ROUNDABOUT
PAVEMENT MARKINGS FOR SINGLE LANE ROUNDABOUT

1. USE STANDARD (NON-FISHHOOK) ARROWS ON HOUSEHOLD APPROACHES AND IN CIRCULATORY ROADWAY.
2. PLACE "SHARK'S TEETH" YIELD MARKINGS PERPENDICULAR TO LEFT LANE LINE OR CURB FOR EACH LANE.
3. CROSSWALK DOTTED FROM TWO-LANE DETAIL FOR CURB. MINIMUM CROSSWALK DETAIL FOR SINGLE-LANE ROUNDABOUT ALSO APPLY TO MULTI-LANE.
4. PAVEMENT MARKING MUST BE SHOWN ON THE APPROVED CONSTRUCTION PLANS.
5. PAVEMENT SURFACE MUST BE SHOW PRIOR TO PLACEMENT OF PAVEMENT MARKINGS AND/OR RAISED PAVEMENT MARKERS SHALL BE CLEARED IN ACCORDANCE WITH COUNTY STANDARDS. CONCRETE SURFACES MUST BE CLEARED BY ABRASIVE BLASTING MEDIUM. ASPHALT PAVEMENT SURFACE SHALL BE CLEARED BY BRUSHING, COMPRESSING AIR, AND/OR HIGH-PRESSURE WIND, AREAS MUST BE FREE OF CURING MEMBRANE, DIRT, DUST, DRAINAGE AN/ON RAISED EXISTING MARKERS, AND FORMS OF DEBRIS.
6. ALL STREET CROSSING SHALL COMPLY WITH T.A.S. AND A.D.A. SEE HANDICAP CROSS DETAIL.
7. ALL PAVEMENT MARKING AND/OR RAISED PAVEMENT MARKERS SHALL COMPLY WITH THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, A.D.A., T.A.S., AND COUNTY STANDARDS AND ALL REVISED THEREOF.
8. PAVEMENT MARKERS PLACED THAT ARE NOT IN ALIGNMENT OR SEQUENCE AS SHOWN ON THE PLANS OR STATED IN THE PROJECT SPECIFICATIONS SHALL BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.

NOTES

- SHARK'S TEETH YIELD MARKINGS
- PLACE ARROWS AT START OF DEFLECTION / END OF TANGENT OR BROAD CURVE
- 8" SOLID WHITE EDGE LINE
- 8" SOLID WHITE EDGE LINE OR PAINT SPLITTER ISLAND CURB YELLOW WITH REFLECTIVE BEADS
- 4" SOLID YELLOW EDGE LINE
- 4" SOLID WHITE EDGE LINE
- NOT TO BE STRIPPED
- PLACE ARROWS AT START OF DEFLECTION / END OF TANGENT OR BROAD CURVE

PAVEMENT MARKINGS FOR 2-LANE ROUNDABOUT

- 8" WHITE (3' DASH, 2' GAP)
- 8" SOLID WHITE
- 4" SOLID WHITE EDGE LINE
- 4" SOLID WHITE EDGE LINE
- NOT TO BE STRIPPED
- PLACE ARROWS AT START OF DEFLECTION / END OF TANGENT OR BROAD CURVE

FOR INTERIM REVIEW ONLY

FORT BEND COUNTY
ENGINEERING DEPARTMENT

DRAWN BY: CK'D BY: SCALE: DATE:
ENGINEER: P.E. SERIAL NO. DATE:
NO. REVISIONS DATE NAME
APPROVED BY: SHEET DESCRIPTION:
CONFIDENTIAL
SHEET NO: CONSULTANT LOGO (LAYER "C-NON-PRINT"
ENGINEERS SEAL (LAYER "C-NON-PRINT")
FBCED STANDARDS
DONED FBC CONCRETE DETAIL FOR 2- LANE ROUNDABOUT
CONCRETE DETAIL - 1 OF 2.DWG
SHEET 3 OF 3
INIT INIT
TYPICAL LOCATION OF EXPANSION JOINTS AND SAWCUTS

NOTE:
- Proposed reinforced pavement structure shall not be placed within the pavement depression of an existing or proposed storm sewer inlet. Minimum pavement depression of 5" shall be provided between the inlet blockout and the expansion joint.

PLAN VIEW

- EXPANSION JOINT
- R.O.W.
- CURB
- SAWCUT
- BLOCKOUT

TYPICAL PAVING HEADER

- HEADERS SPACING FROM CURB INLETS

- NOTE: Proposed reinforced pavement structure shall not be placed within the pavement depression of an existing or proposed storm sewer inlet. Minimum pavement depression of 5" shall be provided between the inlet blockout and the expansion joint.
NOTE:
1. All pavement markings shall be of the same color and minimum width as the line markings they extend.
2. All traffic buttons and markers shall be installed adjacent to stripes (approximately 2”).
3. Repeat arrows at approximately 1000’ intervals within two-way left turn sections.
4. Within a tangent section, the type I-C pavement markers shall be placed at 40’ C-C on roadways without curbs.
5. Within a tangent section, the type II-C pavement markers shall be placed at 15’ C-C in curve areas only.
6. When crosswalk markings are used within an existing school zone, mid-block or at uncontrolled intersections, crosswalk shall be conventional style.
7. All pavement markings shall be removed when turn lane storage length is less than 160 feet.

CROSSHATCHING DETAIL

OUTSIDE EDGE CROSSHATCHING DETAIL
1. **All sign designations refer to the Manual on Uniform Traffic Control Devices.**

2. All pavement markings shall be thermoplastic applied per TxDOT Spec.

3. **S1-1 signs are used in school zones.**

---

**FORT BEND COUNTY**

**ENGINEERING DEPARTMENT**
1. All sign designations refer to the Manual on Uniform Traffic Control Devices.

2. All pavement markings shall be thermoplastic, applied per TxDOT Spec.

3. Post-beam sign to be mounted to pavement with traffic-rated mounting system.

4. S1-1 signs used in school zones.
For Four Lane Boulevard

1. All sign designations refer to the Manual on Uniform Traffic Control Devices.

2. Provide at-grade channel in median at an angle (45-degree angle preferred) toward advancing traffic. Provide at-grade channel in median at an angle toward advancing traffic.

3. Install solar powered rectangular rapid flashing beacon assembly for conditions of FHWA ID-21.

4. S1-1 used in school zones.
ROAD CLOSED

FOR USE ON 1/2 BLVD. W/ DETOUR TO UCR

PLAN VIEW

FRONT VIEW

DETOUR ROUTE

FRONT VIEW

SIDE VIEW

T-INTERSECTION

FRONT VIEW

SIDE VIEW

ROAD CLOSED - NO OUTLET

FRONT VIEW

SIDE VIEW

APPROPRIATE SIGNAGE SHOULD BE MOUNTED BEHIND BARRICADE

NOTE:

REFLECTORIZED RED/WHITE STRIPING, COLOR, ANGLE AND DIRECTION IN ACCORDANCE WITH M.U.T.C.D.

APPLICATION: PERMANENT AND SEMI-PERMANENT CLOSURE OF ROADWAY OR ROADWAY TERMINATION

FORT BEND COUNTY ENGINEERING DEPARTMENT

6"x6" WOODEN POSTS

2"x8" SCREWED WITH 3 - #8 SCREWS TO 6"x6" POST

FBC Type III Barricade Details
NOTES:

1. THE CROSS SECTION OF ALL MEMBERS SHALL BE SQUARE TUBE FORMED OF 12 GAUGE AND MANUFACTURED FROM HOT-GALVANIZED STEEL.

2. THE TELESCOPIC BREAKAWAY SYSTEM OR "SYSTEM" IS DEFINED AS FOLLOWING:

   - A MINIMUM 30" ANCHOR STUB;
   - 18" ANCHOR SLEEVE;
   - A MINIMUM 30" ANCHOR STUB;
   - 2" X 2" CORNER BOLT, FLANGED SOCKET HEAD, WITH 2-1/2" WASHERS AND NUT (OPTIONAL) WHEN INSTALLING IN CORED PAVEMENT;
   - 13/4" X 13/4" SQUARE POST INSERTED 6" INTO ANCHOR STUB;
   - 2" X 2" SQUARE SIGN POST INSERTED 12' OR 14' GALVANIZED 12-GAUGE PRE-PUNCHED;
   - PREPARED THE SUBGRADE MATERIAL AND INSTALL THE SYSTEM.

3. WHEN INSTALLING IN RIGID OR FLEXIBLE PAVEMENT, USE A CORING MACHINE TO EXPOSE THE SUBGRADE MATERIAL AND INSTALL THE SYSTEM.

4. THE SYSTEM IS TO BE DRIVEN INTO NATURAL GROUND EXPOSED SUBGRADE UNTIL ONLY 1 TO 2 INCHES ARE LEFT EXPOSED.

5. THE SYSTEM IS TO BE DRIVEN INTO NATURAL GROUND EXPOSED SUBGRADE UNTIL ONLY 1 TO 2 INCHES ARE LEFT EXPOSED.

6. ATTACH THE SIGN TO AN 1 3/4" SQUARE POST AT THE DESIRED HEIGHT, SUCH THAT IT MEETS THE MINIMUM VERTICAL CLEARANCE.

7. SIGNS ARE FASTENED TO THE POST BY USING DRIVE RIVETS OR BOLTS.

8. INSERT THE SIGN POST APPROXIMATELY 6 TO 8 INCHES INTO THE ANCHOR BASE.

9. BOLT THE SIGN POST TO THE ANCHOR ASSEMBLY WITH A CORNER BOLT.

10. DRIVE THE SYSTEM TOGETHER MAKING SURE THE HOLES ARE ALIGNED.

11. DETAIL A: SEE DETAIL A.
NOTES:
ALL STREET SIGNS SHALL BE 9" IN HEIGHT

LETTERS SHALL BE WHITE REFLECTIVE (TYPICAL). LETTERING FONT SHALL BE MINIWAY D.

SIGN PLATE SHALL BE 0.08" FLAT, DOUBLE SIDED ALUMINUM

CORNERS SHALL BE 0.5 ROUNDED (TYPICAL ALL 4 CORNERS).

45°/90° RAW EXTRUDED ALUMINUM CROSS PIECE SIGN BRACKET DETAILS

RAW ALUMINUM SQUARE POST CAP BRACKET DETAILS

TOP VIEW
FRONT VIEW
SIDE VIEW

1/4" SQUARE POST

BOLT HOLE

0 12" MIN

DUAL-SIDED STREET SIGN DETAIL

SEE RAW ALUMINUM SQUARE POST CAP BRACKET DETAILS. INSTALL ON SQUARE POST.

SEE 45°/90° RAW EXTRUDED ALUMINUM CROSS PIECE SIGN BRACKET DETAILS

BOLT HOLE

SIDE VIEW

0 12" MIN

See 45°/90° RAW EXTRUDED ALUMINUM CROSS PIECE SIGN BRACKET DETAILS

DUAL-SIDED STREET SIGN DETAIL

4.5" "E"
3.5" "D"
6" "C"
2" "B"
9" "A"