# CITY OF
# CLEAR LAKE SHORES, TEXAS

# ROAD AND DRAINAGE STANDARD DETAILS

NOVEMBER 2024

| DETAIL NO. | PAVEMENT DETAILS |
|---|---|
| 02741–01 | HOT MIX ASPHALTIC CONCRETE PAVEMENT ROAD TYPICAL CROSS SECTION |
| 02751–01 | CONCRETE PAVEMENT ROAD TYPICAL CROSS SECTION & PAVEMENT DETAILS |
| 02751–02 | PAVEMENT EXPANSION AND CONSTRUCTION JOINT DETAILS |
| 02751–03 | SIDEWALK EXPANSION AND CONSTRUCTION JOINT DETAILS |
| 02770–01 | CURB, CURB AND GUTTER AND HEADERS DETAILS |
| 02771–01 | TYPICAL SIDEWALK LAYOUT AND DETAILS |
| 02771–02 | TYPICAL CURB RAMP DETAILS |
| 02771–03 | PARALLEL CURB RAMP |
| 02771–04 | CURB MODIFICATION FOR CURB RAMPS & CROSSWALK |
| 02771–05 | COMMERCIAL & HIGH DENSITY CONDITIONS CURB RAMP DETAILS |
| 02771–06 | DETECTABLE WARNING CURB RAMP DETAILS |
| 02771–07 | DETECTABLE WARNING SURFACE (OPTIONS) |
| 02771–08 | PERPENDICULAR CURB RAMP |
| 02775–01 | DRIVEWAY DETAIL WITH 4IN X 12IN CURB FOR LOCAL RESIDENTIAL STREETS |
| 02775–02 | DRIVEWAY DETAIL WITH 6IN CURBED STREETS |
| 02775–03 | DRIVEWAYS WITH CULVERTS ON OPEN DITCH TYPE STREETS |
| 02775–04 | SIDEWALK THROUGH DRIVEWAY WITH EXCESSIVE ELEVATION DIFFERENCE |
| 02775–05 | SIDEWALK THROUGH DRIVEWAY WITH MINIMAL ELEVATION DIFFERENCE |
| 02980–01 | STREET CUT FOR CONCRETE PAVEMENT REPLACEMENT/RESTORATION AGE OF PAVEMENT ≤ 5YRS |
| 02980–02 | STREET CUT FOR CONCRETE PAVEMENT REPLACEMENT/RESTORATION AGE OF PAVEMENT > 5YRS |
| 02980–03 | STREET CUT FOR ASPHALT PAVEMENT REPLACEMENT OR RESTORATION FOR PAVEMENT OF ALL AGES |
| 02980–04 | PAVEMENT REPAIR DETAIL FOR STREET CUTS |
| 02980–05 | PAVEMENT REPAIR DETAIL FOR STREET CUTS |

| DETAIL NO. | STORM AND DRAINAGE DETAILS |
|---|---|
| 02318–01 | STORM SEWER BEDDING AND BACKFILL |
| 02542–01 | STORM SEWER TYPE C PRECAST ROUND MANHOLE |
| 02542–02 | STORM SEWER PRECAST BOX MANHOLE |
| 02603–01 | FRAMES, GRATES, RINGS AND COVERS |
| 02603–02 | FRAMES, GRATES, RINGS AND COVERS |
| 02631–01 | STORM SEWER TYPE A INLET |
| 02631–02 | STORM SEWER TYPE B INLET |
| 02631–03 | STORM SEWER TYPE B–B INLET |
| 02631–04 | STORM SEWER TYPE C INLET |
| 02631–05 | STORM SEWER TYPE D INLET |
| 02631–06 | STORM SEWER TYPE E INLET |

| DETAIL NO. | STORMWATER POLLUTION PREVENTION PLAN DETAILS |
|---|---|
| 01550–01 | STABILIZED CONSTRUCTION ACCESS |
| 01560 & 01561 | FILTER FABRIC FENCE & REINFORCED FILTER FABRIC BARRIER |
| 01566–01 | SOURCE CONTROL FOR EROSION AND SEDIMENTATION |

| DETAIL NO. | TRAFFIC DETAILS |
|---|---|
| 01555–01 | TCP NOTES CHANNELIZING DEVICES AND BARRICADES |
| 01555–02 | TCP OVERALL TRAFFIC CONTROL LAYOUT |
| 01555–03 | TRAFFIC CONTROL LAYOUT |
| 01555–04 | TCP TYPICAL DETOUR ROUTING WITH ONE LANE CLOSURE (ONE BLOCK) |
| 01555–05 | TCP TYPICAL CONSTRUCTION ZONE T–INTERSECTION PHASE 1 OF 3 |
| 01555–06 | TCP TYPICAL CONSTRUCTION ZONE AT A T–INTERSECTION PHASE 2 OF 3 |
| 01555–07 | TCP TYPICAL CONSTRUCTION ZONE AT A T–INTERSECTION PHASE 3 OF 3 |
| 01555–08 | TCP TYPICAL CONSTRUCTION ZONE AT A 4–WAY INTERSECTION (LOW VOLUME TRAFFIC) PHASE 1 OF 4 |
| 01555–09 | TCP TYPICAL CONSTRUCTION ZONE AT A 4–WAY INTERSECTION (LOW VOLUME TRAFFIC) PHASE 2 OF 4 |
| 01555–10 | TCP TYPICAL CONSTRUCTION ZONE AT A 4–WAY INTERSECTION (LOW VOLUME TRAFFIC) PHASE 3 OF 4 |
| 01555–11 | TCP TYPICAL CONSTRUCTION ZONE AT A 4–WAY INTERSECTION (LOW VOLUME TRAFFIC) PHASE 4 OF 4 |
| 01555–12 | BARRICADE DETAILS |
| 01555–13 | CHANNELIZING DEVICES |
| 01555–14 | CROSSWALK CLOSURE AND PEDESTRIAN DETOURS |
| 02585–01 | PAVEMENT MARKING GENERAL NOTES AND LEGENDS |
| 02585–02 | STANDARD PAVEMENT MARKING – WORDS |
| 02585–03 | STANDARD PAVEMENT MARKING – SYMBOLS |
| 02585–04 | PAVEMENT MARKINGS FOR ACCESSIBLE PARKING |
| 02585–05 | TYPICAL CROSSWALK DETAILS |
| 02762–01 | PAVEMENT MARKINGS WITH REFLECTIVE RAISED PAVEMENT MARKERS FOR POSITION GUIDANCE |
| 02762–02 | REFLECTIVE CHIP SEAL MARKER USE FOR TEMPORARY MARKINGS |

CITY OF
CLEAR LAKE SHORES
ROAD AND DRAINAGE STANDARDS

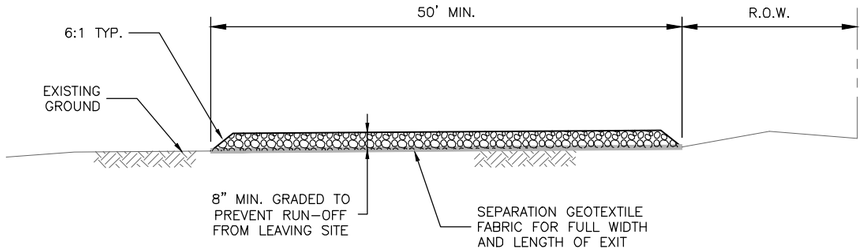
STANDARD DETAILS INDEX

(SCALE: NOT TO SCALE)

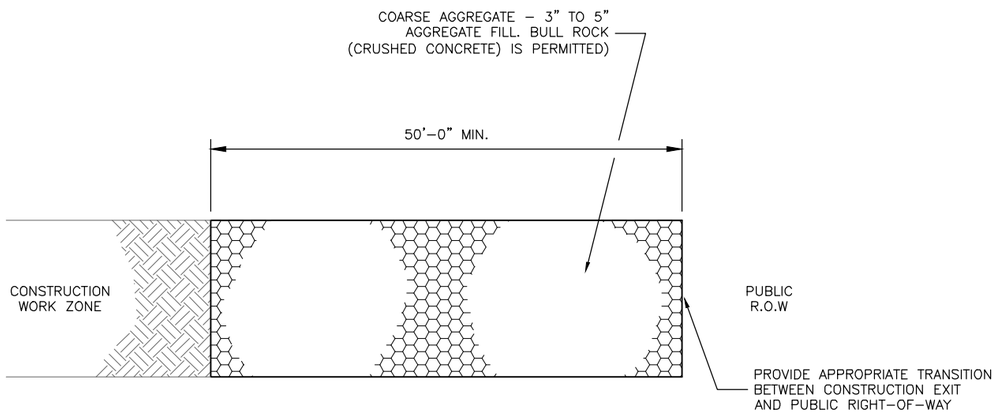
APPROVED BY:

CITY ENGINEER

EFF DATE: NOVEMBER 2024 | DWG NO: 00000–02




PROFILE




PLAN

## GENERAL NOTES:

1. MINIMUM LENGTH IS AS SHOWN ON CONSTRUCTION DRAWINGS OR 50 FEET, WHICHEVER IS MORE.
2. CONSTRUCT AND MAINTAIN CONSTRUCTION EXIT WITH CONSTANT WIDTH ACROSS ITS LENGTH, INCLUDING ALL POINTS OF INGRESS OR EGRESS.
3. UNLESS SHOWN ON THE CONSTRUCTION DRAWINGS, STABILIZATION FOR OTHER AREAS WILL HAVE THE SAME AGGREGATE THICKNESS AND WIDTH REQUIREMENTS AS THE CONSTRUCTION EXIT.
4. WHEN SHOWN ON THE CONSTRUCTION DRAWINGS, WIDEN OR LENGTHEN STABILIZED AREA TO ACCOMMODATE A TRUCK WASHING AREA. PROVIDE OUTLET SEDIMENT TRAP FOR THE TRUCK WASHING AREA.
5. PROVIDE PERIODIC TOP DRESSING WITH ADDITIONAL COARSE AGGREGATE TO MAINTAIN THE REQUIRED DEPTH OR WHEN SURFACE BECOMES PACKED WITH MUD.
6. PERIODICALLY TURN AGGREGATE TO EXPOSE A CLEAN DRIVING SURFACE.
7. ALTERNATIVE METHODS OF CONSTRUCTION INCLUDE
   - CEMENT STABILIZED SOIL: COMPACTED CEMENT STABILIZED SOIL, LIMESTONE AGGREGATE, OR OTHER FILL MATERIAL IN AN APPLICATION OF THICKNESS OF 8–INCHES.
   - WOOD MATS: OAK OR OTHER HARDWOOD TIMBERS PLACED EDGE TO EDGE AND ACROSS SUPPORT WOODEN BEAMS WHICH ARE PLACED ON TOP OF EXISTING SOIL IN AN APPLICATION THICKNESS OF 6–INCHES.
   - STEEL MATS: PERFORATED MATS PLACED ACROSS PERPENDICULAR SUPPORT MEMBERS.
8. MINIMUM 14 FEET WIDTH FOR ONE WAY TRAFFIC AND 20 FEET WIDTH FOR TWO WAY TRAFFIC.

CONSTRUCTION EXIT

SC–1

SYMBOL

CITY OF
CLEAR LAKE SHORES
ROAD AND DRAINAGE STANDARDS

STABILIZED CONSTRUCTION ACCESS

(SCALE: NOT TO SCALE)

APPROVED BY:

CITY ENGINEER

EFF DATE: NOVEMBER 2024 | DWG NO: 01550–01

## GENERAL NOTES

1. THE CONTRACTOR SHALL PROVIDE AND INSTALL TRAFFIC CONTROL DEVICES IN CONFORMANCE WITH PART VI OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD) LATEST EDITION WITIH REVISIONS DURING THE ENTIRE CONSTRUCTION PERIOD.
2. ALL SIGNS AND TRAFFIC CONTROL DEVICES SHALL CONFORM THE LATEST VERSION OF THE TMUTCD.
3. NO LANES SHALL BE CLOSED DURING THE HOURS OF 7:00 AM TO 9:00 AM AND 4:00 PM TO 6:00 PM MONDAY THRU FRIDAY WITHOUT APPROVAL OF THE CITY TRAFFIC ENGINEER.
4. NO WORK SHALL BE PERFORMED IN RESIDENTIAL AREAS FROM 7:00 PM TO 7:00 AM.
5. CONTRACTOR SHALL MAINTAIN APPROVED NUMBER OF THROUGH LANES OF TRAFFIC IN EACH DIRECTION DURING CONSTRUCTION WORKING HOURS. TRAFFIC CONTROL PLANS SHALL INCLUDE ONE–WAY AND/OR DETOUR PLANS. CONTRACTOR SHALL MAINTAIN ADA COMPLIANT PEDESTRIAN ACCESS TO BUS STOPS AND ADEQUATE BUS ACCESS TO ALL THE BUS STOPS.
6. CONTRACTOR SHALL MAINTAIN TRAFFIC LANES AND DETOURS ACCORDING TO TRAFFIC CONTROL PLANS DURING WORKING HOURS.
7. CONTRACTOR SHALL COVER OPEN PAVEMENT EXCAVATIONS FOR MINOR UTILITY WORK WITH ANCHORED STEEL PLATES DURING NON–WORKING HOURS, AND OPEN LANES FOR NORMAL TRAFFIC FLOW WHEN FEASIBLE.
8. IF THE CONTRACTOR CHOOSES TO USE A DIFFERENT METHOD OF "TRAFFIC CONTROL PLANS" DURING THE CONSTRUCTION THAN WHAT IS OUTLINED IN THE CONTRACT DRAWINGS, THE CONTRACTOR SHALL BE RESPONSIBLE TO PREPARE AND SUBMIT AN ALTERNATE SET OF TRAFFIC CONTROL PLANS TO THE CITY OF CLEAR LAKE SHORES PROJECT MANAGER FOR APPROVAL TEN WORKING DAYS PRIOR TO IMPLEMENTATION. THESE PLANS SHALL BE DRAWN TO SCALE ON REPRODUCIBLE MYLARS AND SHALL BE SEALED BY A LICENSED ENGINEER IN THE STATE OF TEXAS. OFFICE OF CITY ENGINEER, MOBILITY PERMITS SECTION REPRESENTATIVE APPROVAL IS REQUIRED TO ACCEPT THE PROPOSED CHANGES.
9. CONTRACTOR SHALL SECURE LANE/SIDEWALK/BICYCLE FACILITY CLOSURE PERMITS FROM OFFICE OF CITY ENGINEER BEFORE IMPLEMENTING THE TRAFFIC CONTROL PLAN. THE APPLICATION MUST BE SUBMITTED AT LEAST TEN DAYS PRIOR TO THE IMPLEMENTATION OF THE TRAFFIC CONTROL PLAN AND/OR BEGINNING CONSTRUCTION WORK. THE CONTRACTOR SHALL PROVIDE TRAFFIC CONTROL PLANS, CONSTRUCTION SEQUENCING, AND CONSTRUCTION SCHEDULE WITH THE APPLICATION.
10. CONTRACTOR SHALL HAVE APPROVED TRAFFIC CONTROL PLAN AND PERMIT AT THE JOB SITE FOR INSPECTION AT ALL TIMES.
11. DURING PAVEMENT SURFACE RESTORATION PROJECTS; THE CONTRACTOR SHALL NOT OPEN CLOSED LANES UNTIL THE PAVEMENT SURFACE HAS CURED ENOUGH TO ALLOW VEHICULAR TRAFFIC ACCORDING TO CITY OF CLEAR LAKE SHORES STANDARD SPECIFICATIONS.
12. THE CONTRACTOR IS RESPONSIBLE FOR SCHEDULING AND COORDINATING ALL CONSTRUCTION ACTIVITIES WITH STAKE HOLDERS IN THE VICINITY INCLUDING EMERGENCY RESPONSE AGENCIES SUCH AS POLICE DEPARTMENT AND FIRE DEPARTMENT
13. CONTRACTOR SHALL BE RESPONSIBLE FOR ISSUING ALL WORK DIRECTIVES TO ALL SUB–CONTRACTORS, UTILITY COMPANIES, AND ALL OTHER ENTITIES PERFORMING CONSTRUCTION WORK ASSOCIATED WITH THE PROJECT.
14. NOTHING IN THESE NOTES OR PLANS SHALL RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT; INCLUDING SAFETY OF ALL MODES OF TRANSPORTATION, PERSONS, AND PROPERTY, AND THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO WORKING HOURS.
15. THE OFFICE OF CITY ENGINEER PER THE DIRECTION OF THE CITY TRAFFIC ENGINEER HAVE THE RIGHT TO DEMAND THE INSTALLATION OF ADDITIONAL TRAFFIC CONTROL DEVICES OR MODIFICATIONS OF THESE PLANS AND NOTES, AS DEEMED NECESSARY TO PROMOTE THE SAFE AND ORDERLY FLOW OF TRAFFIC, INCLUDING PEDESTRIANS AND BICYCLES, THROUGH THE CONSTRUCTION WORK ZONE. THE CONTRACTOR SHALL COMPLY WITH THESE ADDITIONAL REQUESTS OR MODIFICATIONS WITH DUE DILIGENCE.
16. ALL EXISTING TRAFFIC CONTROL SIGNS AND PAVEMENT MARKINGS SHALL BE MAINTAINED IN VISIBLE LOCATIONS DURING CONSTRUCTION UNLESS PRIOR WRITTEN APPROVAL IS OBTAINED FROM CITY OF CLEAR LAKE SHORES PROJECT MANAGER. THE CONTRACTOR SHALL RESTORE OR REPLACE (AT THE DISCRETION OF THE CITY TRAFFIC ENGINEER) ANY PAVEMENT MARKING OR SIGNING DAMAGE DURING CONSTRUCTION OPERATIONS, INCLUDING RAISED PAVEMENT MARKERS (RPMS).
17. WHEN ENTERING OR LEAVING ROADWAYS CARRYING PUBLIC TRAFFIC, THE CONTRACTOR'S EQUIPMENT, WHETHER EMPTY OR LOADED SHALL IN ALL CASES YIELD TO PUBLIC TRAFFIC WITH THE ASSISTANCE OF CONTRACTOR PROVIDED CERTIFIED FLAGGER/PEACE OFFICER.
18. ACCESS TO DRIVEWAYS ADJACENT TO THE CONSTRUCTION WORK ZONE SHALL BE MAINTAINED AT ALL TIMES AS MUCH AS POSSIBLE. ADDITIONAL CONES AND/OR DELINEATORS MAY BE REQUIRED TO DELINEATE THE DRIVEWAY ACCESS ROUTE THROUGH THE CONSTRUCTION WORK ZONE. A MINIMUM OF ONE TRAVEL LANE SHALL BE MAINTAINED ACROSS THE DRIVEWAYS, UNLESS PRIOR WRITTEN APPROVAL IS OBTAINED FROM CITY OF CLEAR LAKE SHORES PROJECT MANAGER.
19. SPILLAGE RESULTING FROM HAULING OPERATIONS ALONG OR ACROSS ANY PUBLIC TRAVELED WAY SHALL BE REMOVED IMMEDIATELY BY THE CONTRACTOR.
20. THE CONTRACTOR SHALL SUBMIT AN APPLICATION FOR TEMPORARY PARKING RESTRICTIONS IF THERE ARE PARKING METERS LOCATED AT THE PROPOSED LANE CLOSURES AT LEAST TEN BUSINESS DAYS BEFORE IMPLEMENTATION OF LANE CLOSURES. IN ADDITION, TEMPORARY NO PARKING SIGNS SHALL BE POSTED 24 HOURS PRIOR TO COMMENCEMENT OF WORK.
21. ADDITIONAL OFF DUTY OFFICERS/FLAGGERS MAY BE REQUESTED TO DIRECT TRAFFIC WHEN LANES ARE BLOCKED AT THE DISCRETION OF THE CITY PROJECT MANAGER EVEN IF THEY ARE NOT SPECIFICALLY IDENTIFIED ON THE PROJECT PLANS.
22. THE CONTRACTOR SHALL REPLACE WITHIN 72 HOURS, ALL TRAFFIC SIGNAL LOOP DETECTORS DAMAGED DURING CONSTRUCTION.
23. IN GENERAL, A SOLAR POWERED FLASHING ARROW BOARD SHALL BE REQUIRED ON ALL MAJOR THOROUGHFARE LANES CLOSURES. EXCEPTIONS TO FLASHING ARROW BOARDS AND/OR IMPLEMENTATION ON RESIDENTIAL LANE CLOSURES SHALL BE APPROVED BY CITY TRAFFIC ENGINEER.
24. APPROVED TRAFFIC CONTROL PLAN SHALL BE IN PLACE BEFORE STARTING ANY EXCAVATION.
25. WATER FILLED BARRIERS CAN BE USED AS INSTRUCTED BY THE ENGINEER AND APPROVED BY THE CITY FOR PROJECTS WHERE SPACE IS LIMITED AND HEAVY EQUIPMENT TO PLACE CONCRETE BARRIERS IS NOT FEASIBLE. WATER FILLED BARRIERS SHALL NOT BE USED ON ROADWAYS WITH A POSTED SPEED LIMIT MORE THAN 45 MPH.
26. WATER FILLED BARRIERS MUST BE INSTALLED AND MAINTAINED PER THE MANUFACTURER'S REQUIREMENTS AND ROUTINELY INSPECTED FOR DEFECTS.
27. IF WATER FILLED BARRIER IS PROVIDED, USE ENVIRONMENTALLY SAFE ANTI–FREEZING AGENT IN THE WATER WHEN IT IS APPLICABLE PER MANUFACTURER SPECIFICATIONS AND RECOVER AGENT WHEN THE BARRIER IS DRAINED.
28. DISPOSE OF WATER AND AGENT PROPERLY. DO NOT DRAIN WATER FILLED BARRIER INTO OR ACROSS AN EXISTING TRAVEL LANE.
29. PROVIDE BARRIER UNITS THAT ARE CAPABLE OF BEING LIFTED AND MOVED WHEN FILLED IF DRAINING IS NOT POSSIBLE.
30. PROVIDE WATER FILLED BARRIER THAT ACTS AS ITS OWN FREE STANDING, NON–REDIRECTIVE END TREATMENT.
31. WHEN WATER FILLED BARRIERS ARE USED TO CHANNELIZE PEDESTRIANS, THEY 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.
32. ANY CLOSURE OF A PEDESTRIAN OR BICYCLE FACILITY SHALL REQUIRE THE SHORTEST DETOUR THAT MAINTAINS THE SAFETY OF PEDESTRIAN AND/OR BICYCLISTS.

## SPACING FOR CHANNELIZING DEVICES

A. PLASTIC DRUMS ON MERGING TAPER @ 30' C – C WITH CHEVRON SIGN @ 60' C – C AND WARNING LIGHTS FOR OVERNIGHT CLOSURE.

B. PLASTIC DRUMS ON DOWNSTREAM TAPER @ 30' C – C (RETURN TAPER AND BARRICADE ARE OPTIONAL AND DIVIDED ROADWAY SECTION)

C. PLASTIC DRUMS ON RADII @ 35' C –C.

D. PLASTIC DRUMS ON TANGENT @ 35' C – C WITH VERTICAL PANEL AT 70' C – C AND APPROVED WARNING LIGHT @ 70' C – C (FOR OVERNIGHT CLOSURE).

E. PLASTIC DRUMS IN FRONT OF CONSTRUCTION ZONE @ 20' C – C WITH VERTICAL PANEL AT 40' C – C AND APPROVED WARNING LIGHT @ 40' C – C (FOR OVERNIGHT CLOSURE).

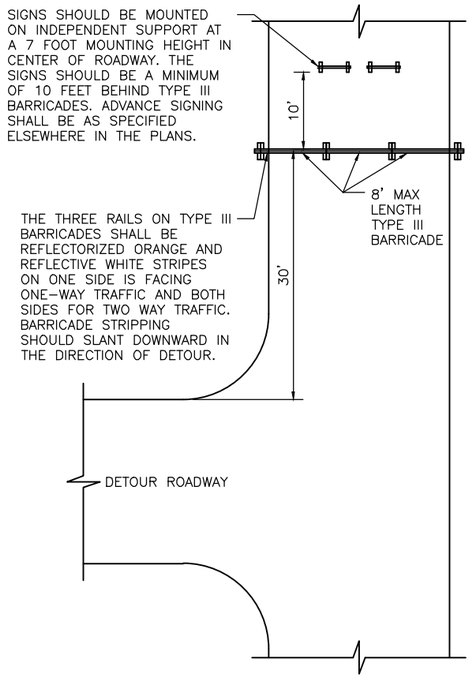
F. CONCRETE TRAFFIC BARRIER (CTB) OR LOW PROFILE CONCRETE TRAFFIC BARRIER (LPCTB) WITH APPROVED REFLECTORS @ 10' C – C IF PAVEMENT DROP IS GREATER THAN 1 FOOT.

G. PLASTIC DRUMS W/GUARD RAIL MOUNTED.

H. SELF– RIGHTING VERTICAL PANEL SPACING.
– 4 LANES TO 2 LANES UNDIVIDED ROADWAY SECTION @ 20' C – C.
– 4 LANES DIVIDED ROADWAY TO ONE SIDE TWO WAY ROADWAY @ 20' C – C.
– LEFT LANE AND RIGHT LANE STORAGE BAYS @ 15' C – C.

I. SPACING SHOWN ON TRAFFIC CONTROL SHALL SUPERSEDE THE ABOVE SPACING.

J. SPACING MAY BE ADJUSTED TO PROVIDE DRIVEWAYS, INTERSECTIONS AND /OR MEDIAN OPENINGS.




PLAN VIEW
TYPE III BARRICADE (POST AND SKID)
(DETAIL A–5)

TABLE C3 – TYPICAL SIGN SPACING, TAPER LENGTHS, AND SUGGESTED SPACING OF CHANNELIZATION DEVICES

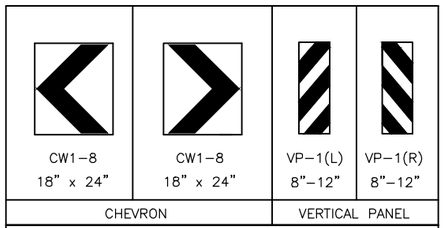
| POSTED SPEED (MPH) | SIGN SPACING "X" (FEET) | MIN. DESIRABLE TAPER LENGTH "L" | | | SUGGESTED MAXIMUM SPACING OF DEVICE | |
|---|---|---|---|---|---|---|
| | | 10' OFFSET | 11' OFFSET | 12' OFFSET | ON A TAPER | ON A TANGENT |
| 30 | 120' | 150' | 165' | 180' | 30' | 60'–75' |
| 35 | 160' | 205' | 225' | 245' | 35' | 70'–90' |
| 40 | 240' | 265' | 295' | 320' | 40' | 80'–100' |
| 45 | 320' | 450' | 495' | 540' | 45' | 90'–110' |
| 50 | 400' | 500' | 550' | 600' | 50' | 100'–125' |
| 55 | 500' | 550' | 605' | 660' | 55' | 110'–140' |

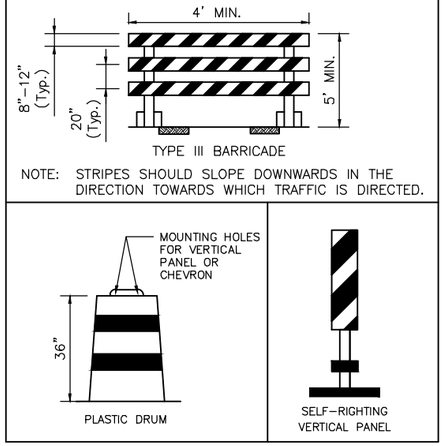
TABLE C4 – STOPPING SIGHT DISTANCE AS A FUNCTION OF SPEED

| POSTED SPEED (MPH) | DISTANCE "D" (FEET) |
|---|---|
| 30 | 200 |
| 35 | 250 |
| 40 | 305 |
| 45 | 360 |
| 50 | 425 |
| 55 | 495 |

## LEGEND:

- SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
- BARRICADE
- FLASHING ARROW PANEL
- AREA UNDER CONSTRUCTION
- EXISTING TRAVEL WAY
- TRAFFIC CONTROL PLAN DETOUR TRAVEL WAY




CHANNELIZATION AND BARRICADES

CITY OF
CLEAR LAKE SHORES
ROAD AND DRAINAGE STANDARDS

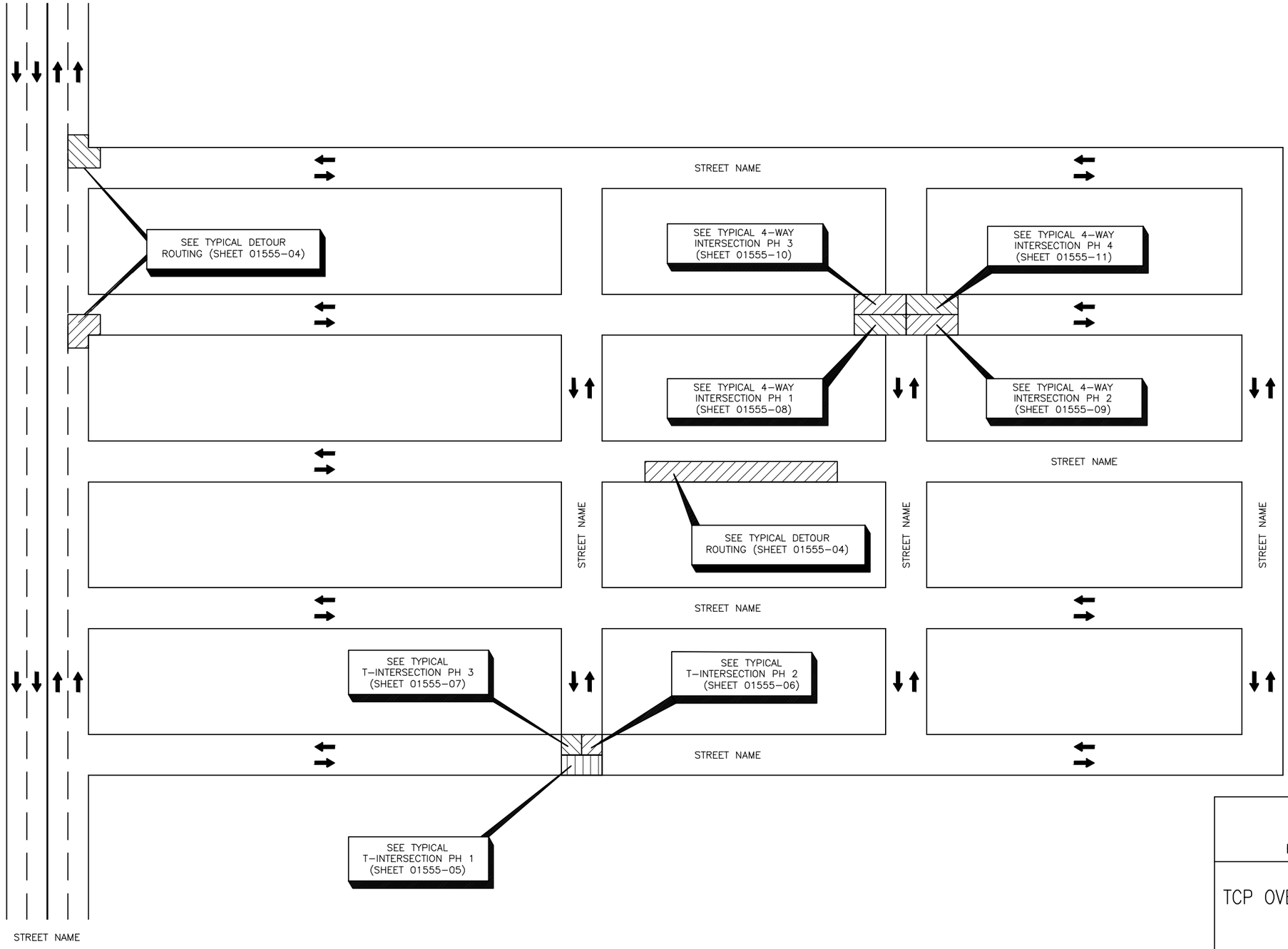
TCP NOTES CHANNELIZING DEVICES AND BARRICADES

(SCALE: NOT TO SCALE)

APPROVED BY:

CITY ENGINEER

EFF DATE: NOVEMBER 2024 | DWG NO: 01555–01




CITY OF
# CLEAR LAKE SHORES
ROAD AND DRAINAGE STANDARDS

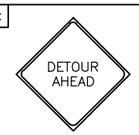
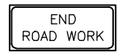
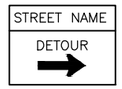
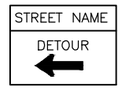
## TCP OVERALL TRAFFIC CONTROL LAYOUT

(SCALE: NOT TO SCALE)

APPROVED BY:

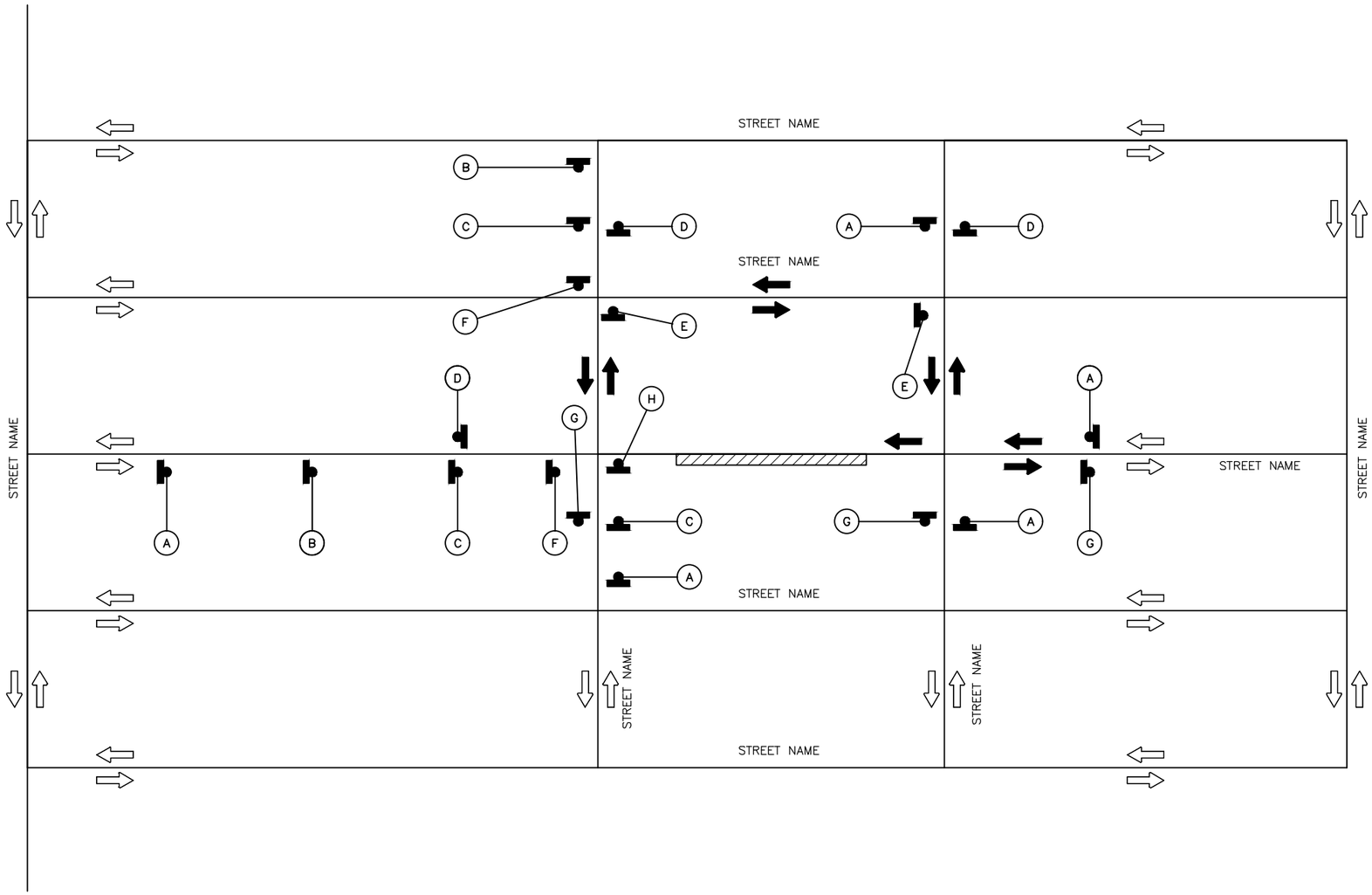
CITY ENGINEER

EFF DATE: NOVEMBER 2024 | DWG NO: 01555-02

| A | B | C | D | E | F | G | H |
|---|---|---|---|---|---|---|---|
|  |  |  |  |  |  |  |  |
| CW20-1 | CW20-3 | CW20-2 | G20-2 | M4-9R | M4-9L | M4-8a | M4-9T |

## LEGEND:

- SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
- BARRICADE
- FLASHING ARROW PANEL
- AREA UNDER CONSTRUCTION
- EXISTING TRAVEL WAY
- TRAFFIC CONTROL PLAN DETOUR TRAVEL WAY




CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

TRAFFIC CONTROL LAYOUT

(SCALE: NOT TO SCALE)

APPROVED BY:

CITY ENGINEER

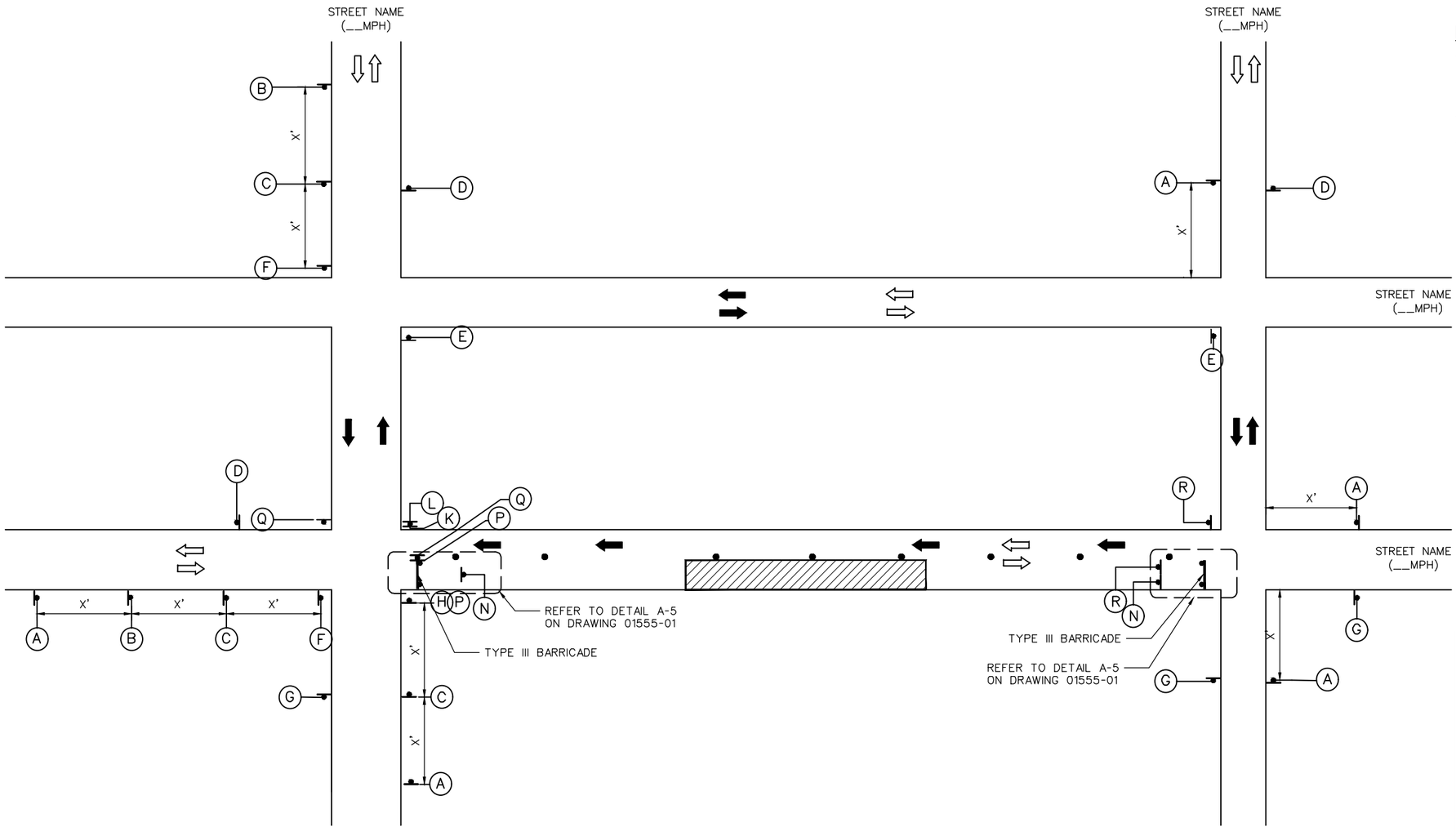
EFF DATE: NOVEMBER 2024 | DWG NO: 01555-03

*DISCLAIMER:*
*THE USE OF THIS STANDARD IS GOVERNED BY THE TEXAS ENGINEERING PRACTICE ACT. THE DESIGN REQUIREMENTS ON THIS STANDARD DO NOT PURPORT TO ADDRESS ALL OF THE SAFETY CONCERNS ASSOCIATED WITH THEIR USE. THE ENGINEER OF RECORD (EOR) IS TO REVIEW THESE DESIGN REQUIREMENTS AND BY AUTHORIZING THEIR USE, ACCEPTS RESPONSIBILITY FOR THEIR APPLICABILITY, ADEQUACY AND SAFETY. NO WARRANTY OF ANY KIND IS MADE BY THE CITY OF CLEAR LAKE SHORES FOR ANY PURPOSES WHATSOEVER. THE CITY OF CLEAR LAKE SHORES ASSUMES NO RESPONSIBILITY FOR INCORRECT RESULTS OR DAMAGES RESULTING FROM ITS USE.*

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| A | B | C | D | E | F | G | H | I | J |
| ROAD WORK AHEAD | ROAD CLOSED AHEAD | DETOUR AHEAD | END ROAD WORK | STREET NAME DETOUR → | STREET NAME DETOUR ← | END DETOUR | STREET NAME DETOUR ↑ | RIGHT LANE CLOSED AHEAD | LEFT LANE CLOSED AHEAD |
| CW20-1 | CW20-3 | CW20-2 | G20-2 | M4-9R | M4-9L | M4-8a | M4-9T | CW20-5(2) CW16-3 | CW20-5(1) CW16-3 |
| K | L | M | N | O | P | Q | R | | |
| ONE WAY ← | ONE WAY → | DO NOT ENTER | ROAD CLOSED | DETOUR | | | BEGIN ONE WAY | | |
| R6-2(L) | R6-2(R) | R5-1 | R11-2 | M4-10(L) | R3-1 | R3-2 | R6-6 | | |

## LEGEND:

- SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
- BARRICADE
- FLASHING ARROW PANEL
- AREA UNDER CONSTRUCTION
- EXISTING TRAVEL WAY
- TRAFFIC CONTROL PLAN DETOUR TRAVEL WAY




## NOTES:

1. A 10' MINIMUM LANE WIDTH FOR EMERGENCY SHALL BE MADE AVAILABLE AND MAINTAINED BY THE CONTRACTOR AT ALL TIMES.
2. FOR DIMENSIONS REFER TO SHEET 01555-01.
3. INSTALL FLASHERS ON DRUMS WHERE REQUIRED AND APPROVED BY CITY TRAFFIC ENGINEER.

CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

# TCP TYPICAL DETOUR ROUTING WITH ONE LANE CLOSURE (ONE BLOCK)

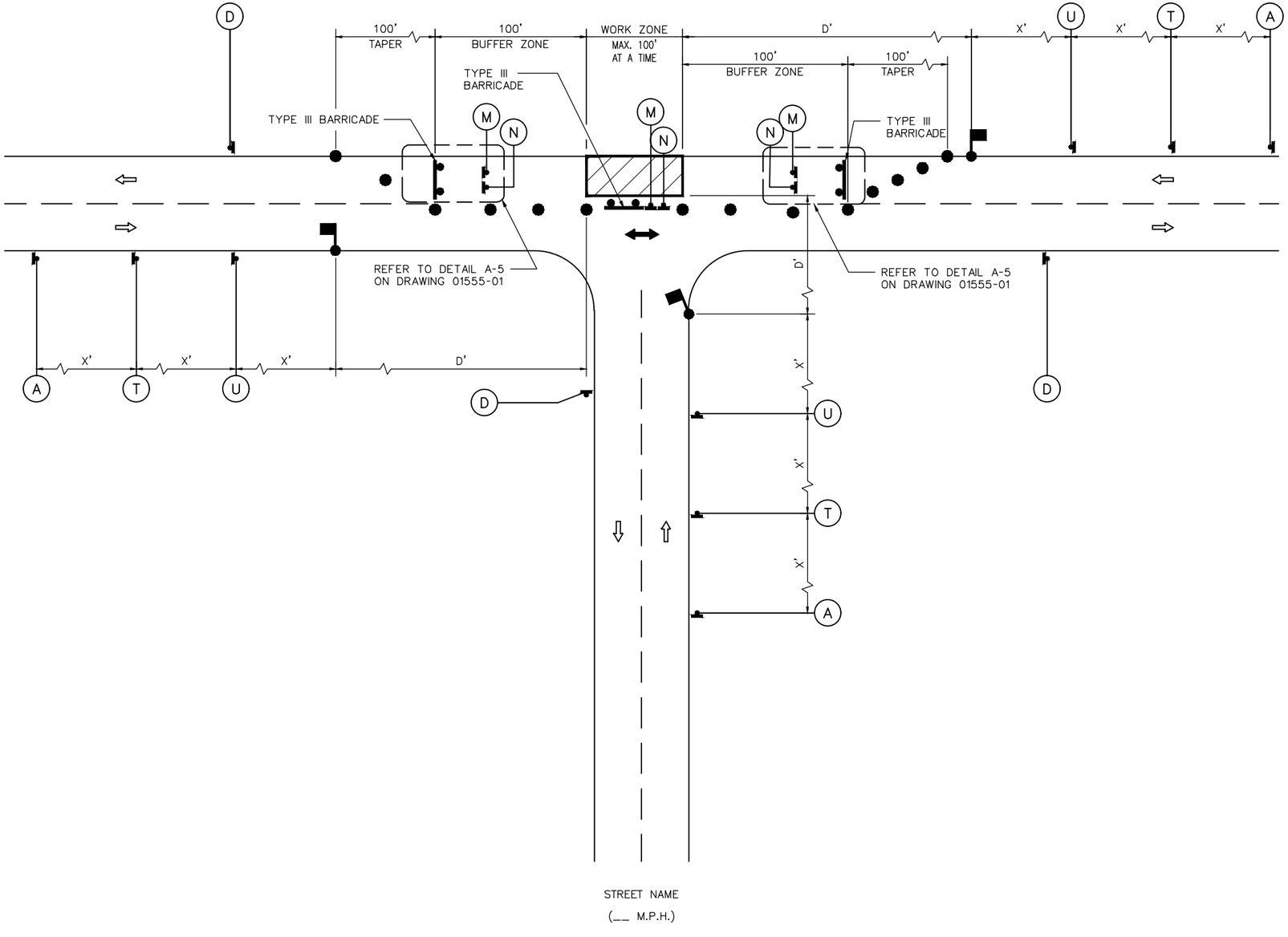
(SCALE: NOT TO SCALE)

APPROVED BY:

CITY ENGINEER

EFF DATE: NOVEMBER 2024 | DWG NO: 01555-04

| A | T | U | D | M | N |
|---|---|---|---|---|---|
| ROAD WORK AHEAD | ONE LANE ROAD AHEAD | | END ROAD WORK | DO NOT ENTER | ROAD CLOSED |
| CW20-1 | CW20-4 | CW20-7 | G20-2 | R5-1 | R11-2 |




## LEGEND:

- SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
- BARRICADE
- FLASHING ARROW PANEL
- AREA UNDER CONSTRUCTION
- EXISTING TRAVEL WAY
- TRAFFIC CONTROL PLAN DETOUR TRAVEL WAY

## NOTES:

1. MINOR WORK AND DAYTIME OPERATIONS ONLY.
2. REFER TO PROJECT SPECIFIC TRAFFIC CONTROL PLANS FOR MAJOR OPERATIONS AND OVERNIGHT LANE CLOSURES.
3. FOR DIMENSIONS REFER TO SHEET 01555-01.
4. INSTALL FLASHERS ON DRUMS WHERE REQUIRED AND APPROVED BY CITY TRAFFIC ENGINEER.
5. MAX. 100' WORK ZONE AT A TIME.

CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

# TCP TYPICAL CONSTRUCTION ZONE T-INTERSECTION PHASE 1 OF 3

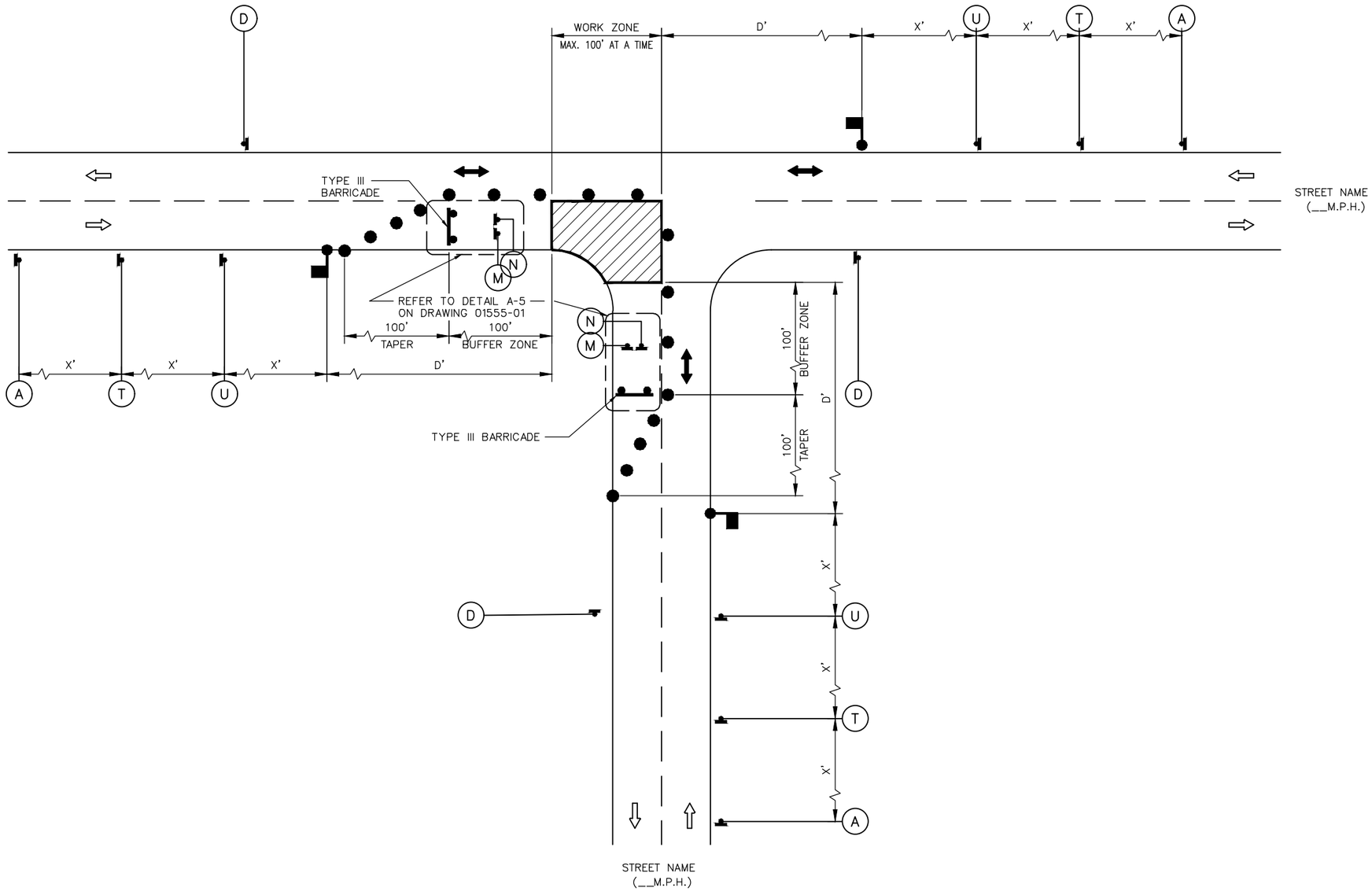
(SCALE: NOT TO SCALE)

APPROVED BY:

CITY ENGINEER

EFF DATE: NOVEMBER 2024 | DWG NO: 01555-05

| A | T | U | D | M | N |
|---|---|---|---|---|---|
| ROAD WORK AHEAD | ONE LANE ROAD AHEAD | | END ROAD WORK | DO NOT ENTER | ROAD CLOSED |
| CW20-1 | CW20-4 | CW20-7 | G20-2 | R5-1 | R11-2 |




## LEGEND:

- SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
- BARRICADE
- FLASHING ARROW PANEL
- AREA UNDER CONSTRUCTION
- EXISTING TRAVEL WAY
- TRAFFIC CONTROL PLAN DETOUR TRAVEL WAY

## NOTES:

1. MINOR WORK AND DAYTIME OPERATIONS ONLY.
2. REFER TO PROJECT SPECIFIC TRAFFIC CONTROL PLANS FOR MAJOR OPERATIONS AND OVERNIGHT LANE CLOSURES.
3. FOR DIMENSIONS REFER TO SHEET 01555-01.
4. INSTALL FLASHERS ON DRUMS WHERE REQUIRED AND APPROVED BY CITY TRAFFIC ENGINEER.
5. MAX. 100' WORK ZONE AT A TIME.

CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

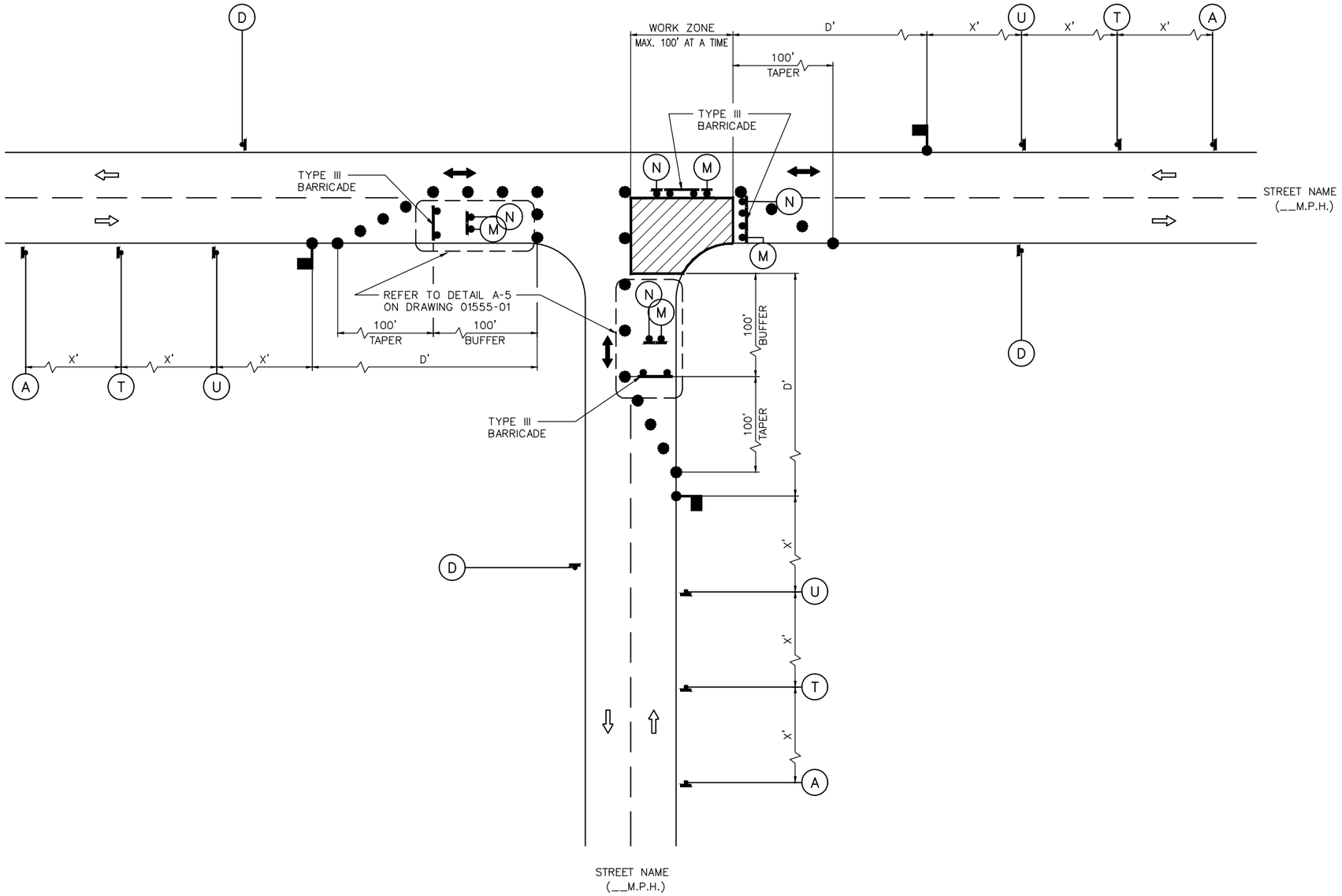
TCP TYPICAL CONSTRUCTION ZONE AT A T-INTERSECTION PHASE 2 OF 3
(SCALE: NOT TO SCALE)

APPROVED BY:

CITY ENGINEER

EFF DATE: NOVEMBER 2024 | DWG NO: 01555-06

| A | T | U | D | M | N |
|---|---|---|---|---|---|
| ROAD WORK AHEAD | ONE LANE ROAD AHEAD | | END ROAD WORK | DO NOT ENTER | ROAD CLOSED |
| CW20-1 | CW20-4 | CW20-7 | G20-2 | R5-1 | R11-2 |




## LEGEND:

- SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
- BARRICADE
- FLASHING ARROW PANEL
- AREA UNDER CONSTRUCTION
- EXISTING TRAVEL WAY
- TRAFFIC CONTROL PLAN DETOUR TRAVEL WAY

## NOTES:

1. MINOR WORK AND DAYTIME OPERATIONS ONLY.
2. REFER TO PROJECT SPECIFIC TRAFFIC CONTROL PLANS FOR MAJOR OPERATIONS AND OVERNIGHT LANE CLOSURES.
3. FOR DIMENSIONS REFER TO SHEET 01555-01.
4. INSTALL FLASHERS ON DRUMS WHERE REQUIRED AND APPROVED BY CITY TRAFFIC ENGINEER.
5. MAX. 100' WORK ZONE AT A TIME.

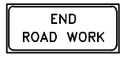
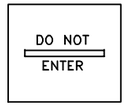
CITY OF
CLEAR LAKE SHORES
ROAD AND DRAINAGE STANDARDS

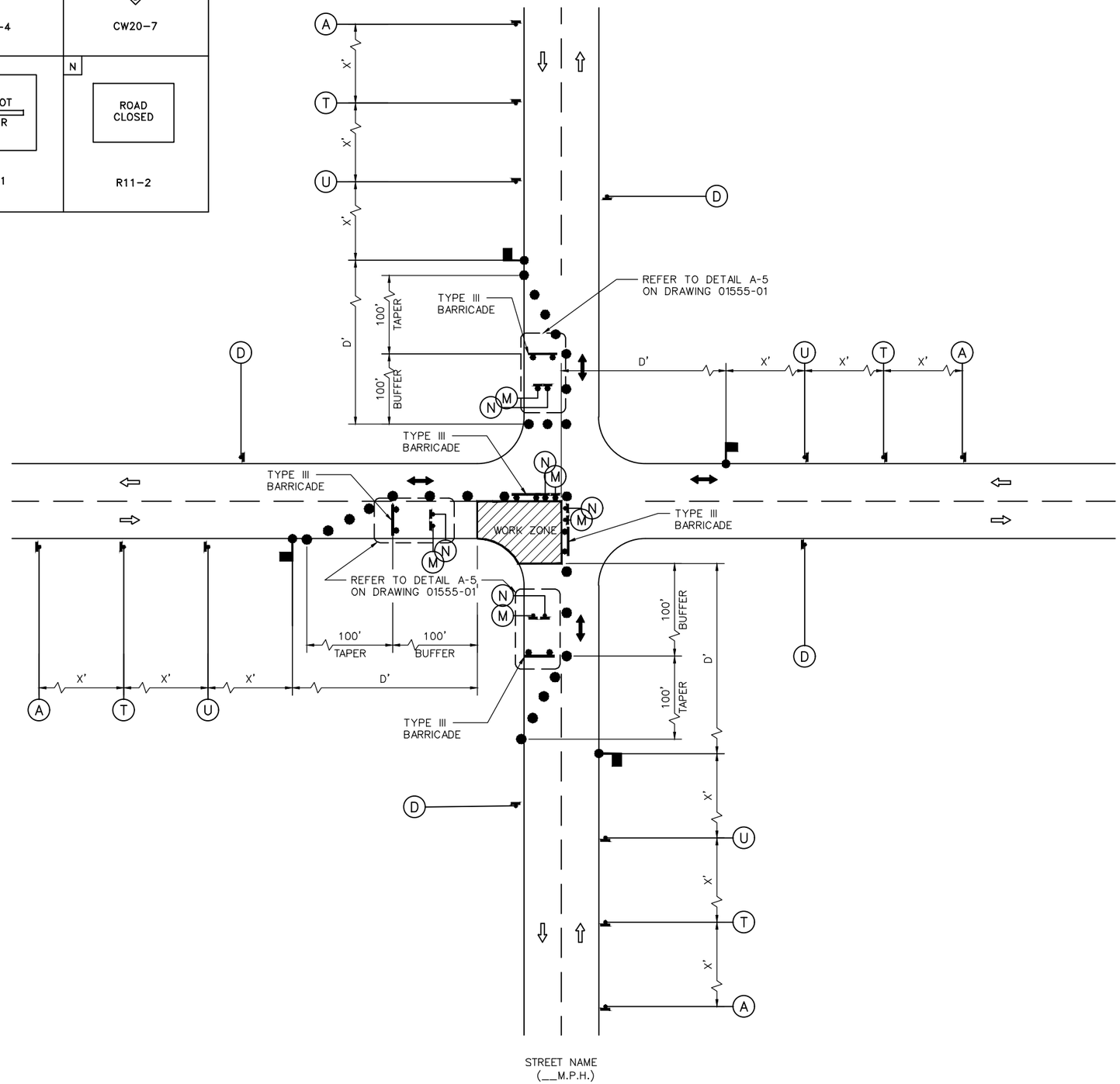
TCP TYPICAL CONSTRUCTION
ZONE AT A T-INTERSECTION
PHASE 3 OF 3
(SCALE: NOT TO SCALE)

APPROVED BY:

CITY ENGINEER

EFF DATE: NOVEMBER 2024 | DWG NO: 01555-07

| A | T | U |
|---|---|---|
|   CW20-1 |   CW20-4 |  CW20-7 |
| **D** | **M** | **N** |
|   G20-2 |   R5-1 |   R11-2 |




## LEGEND:

- SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
- BARRICADE
- FLASHING ARROW PANEL
- AREA UNDER CONSTRUCTION
- EXISTING TRAVEL WAY
- TRAFFIC CONTROL PLAN DETOUR TRAVEL WAY

## NOTES:

1. MINOR WORK AND DAYTIME OPERATIONS ONLY.
2. REFER TO PROJECT SPECIFIC TRAFFIC CONTROL PLANS FOR MAJOR OPERATIONS AND OVERNIGHT LANE CLOSURES.
3. FOR DIMENSIONS REFER TO SHEET 01555-01.
4. INSTALL FLASHERS ON DRUMS WHERE REQUIRED AND APPROVED BY CITY TRAFFIC ENGINEER.
5. MAX. 100' WORK ZONE AT A TIME.

CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

# TCP TYPICAL CONSTRUCTION ZONE AT A 4-WAY INTERSECTION (LOW VOLUME TRAFFIC) PHASE 1 OF 4

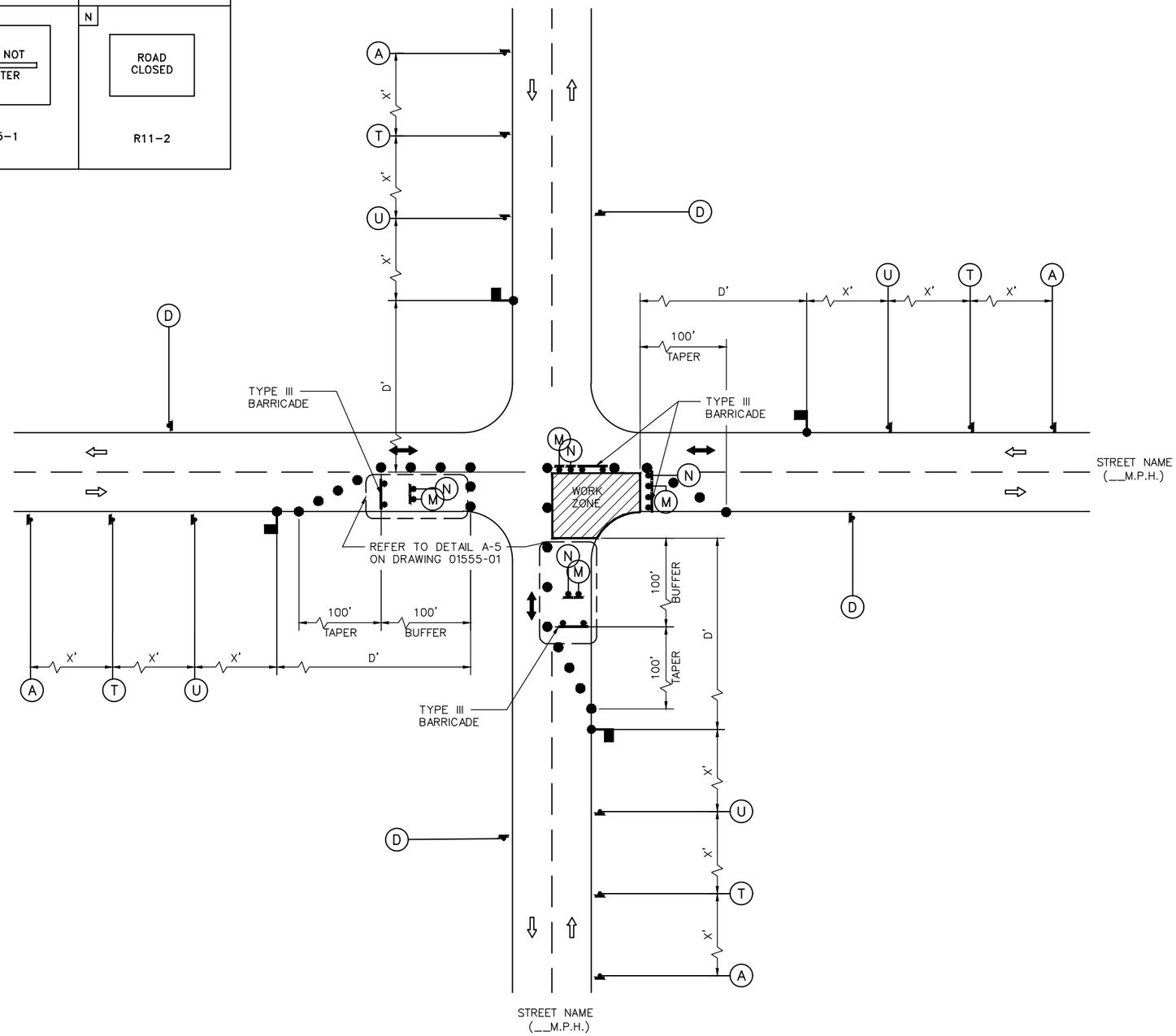
(SCALE: NOT TO SCALE)

APPROVED BY:

CITY ENGINEER

EFF DATE: NOVEMBER 2024 | DWG NO: 01555-08

| | | |
|---|---|---|
| A<br>ROAD WORK AHEAD<br>CW20-1 | T<br>ONE LANE ROAD AHEAD<br>CW20-4 | U<br>CW20-7 |
| D<br>END ROAD WORK<br>G20-2 | M<br>DO NOT ENTER<br>R5-1 | N<br>ROAD CLOSED<br>R11-2 |




## LEGEND:

- SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
- BARRICADE
- FLASHING ARROW PANEL
- AREA UNDER CONSTRUCTION
- EXISTING TRAVEL WAY
- TRAFFIC CONTROL PLAN DETOUR TRAVEL WAY

## NOTES:

1. MINOR WORK AND DAYTIME OPERATIONS ONLY.
2. REFER TO PROJECT SPECIFIC TRAFFIC CONTROL PLANS FOR MAJOR OPERATIONS AND OVERNIGHT LANE CLOSURES.
3. FOR DIMENSIONS REFER TO SHEET 01555-01.
4. INSTALL FLASHERS ON DRUMS WHERE REQUIRED AND APPROVED BY CITY TRAFFIC ENGINEER.
5. MAX. 100' WORK ZONE AT A TIME.

CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

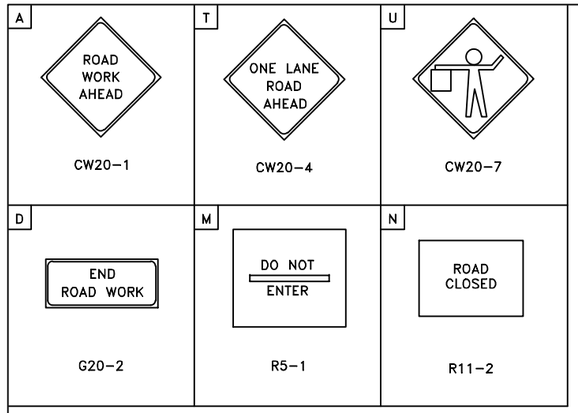
# TCP TYPICAL CONSTRUCTION ZONE AT A 4-WAY INTERSECTION (LOW VOLUME TRAFFIC) PHASE 2 OF 4

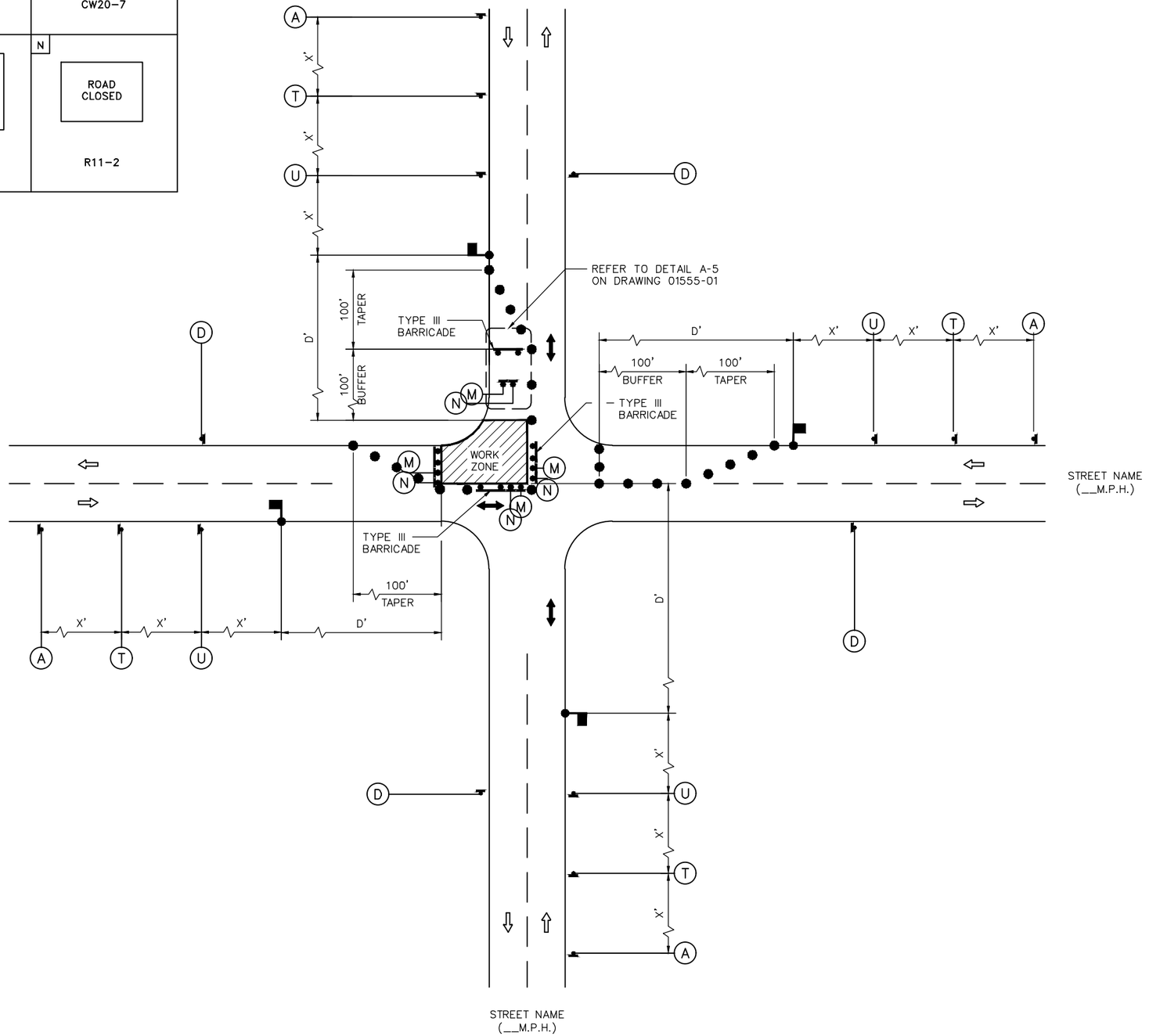
(SCALE: NOT TO SCALE)

APPROVED BY:

CITY ENGINEER

EFF DATE: NOVEMBER 2024 | DWG NO: 01555-09




## LEGEND:

- SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
- BARRICADE
- FLASHING ARROW PANEL
- AREA UNDER CONSTRUCTION
- EXISTING TRAVEL WAY
- TRAFFIC CONTROL PLAN DETOUR TRAVEL WAY

## NOTES:

1. MINOR WORK AND DAYTIME OPERATIONS ONLY.
2. REFER TO PROJECT SPECIFIC TRAFFIC CONTROL PLANS FOR MAJOR OPERATIONS AND OVERNIGHT LANE CLOSURES.
3. FOR DIMENSIONS REFER TO SHEET 01555-01.
4. INSTALL FLASHERS ON DRUMS WHERE REQUIRED AND APPROVED BY CITY TRAFFIC ENGINEER.
5. MAX. 100' WORK ZONE AT A TIME.

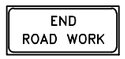
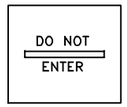
CITY OF
CLEAR LAKE SHORES
ROAD AND DRAINAGE STANDARDS

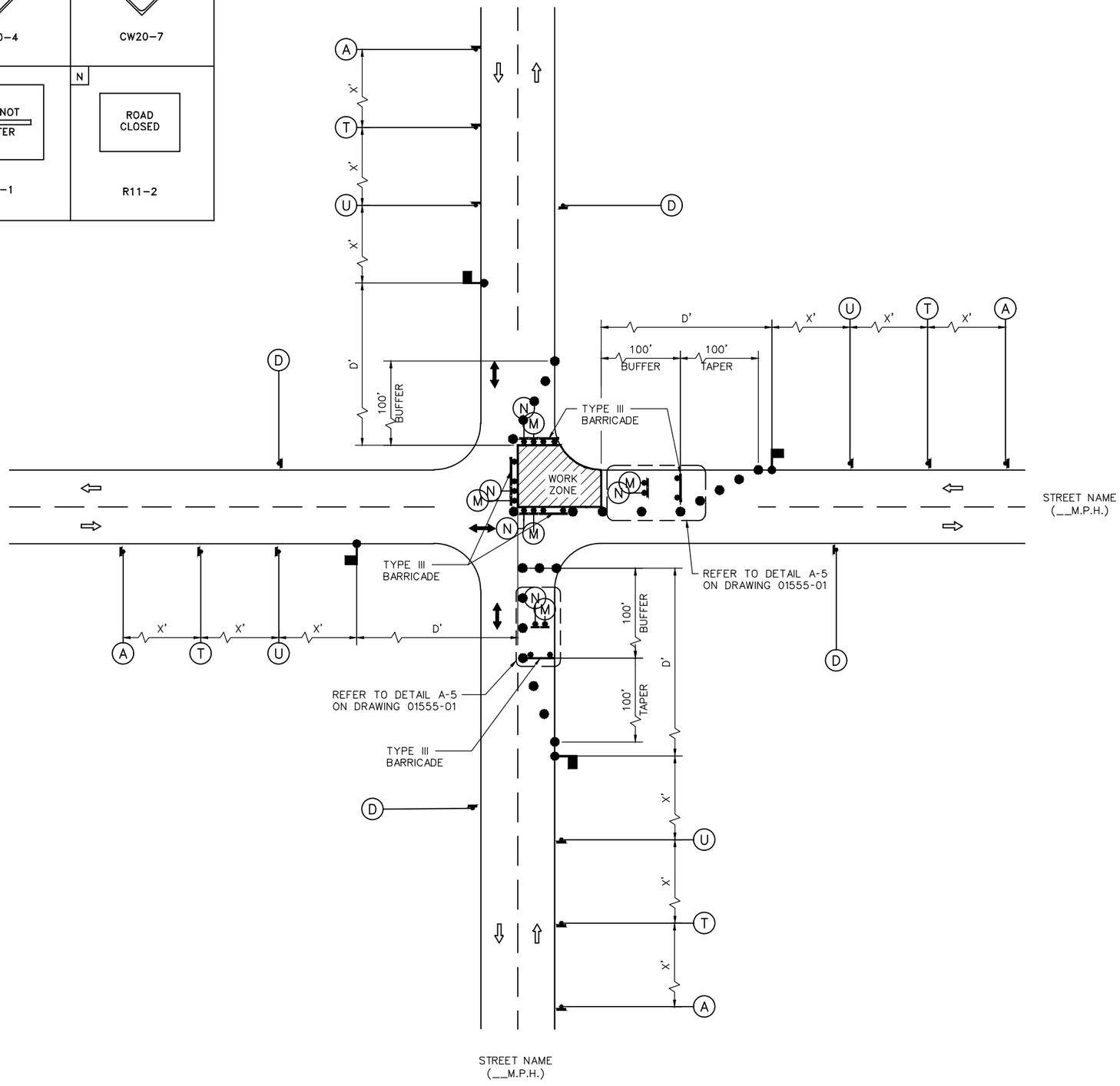
TCP TYPICAL CONSTRUCTION ZONE AT A 4-WAY INTERSECTION (LOW VOLUME TRAFFIC) PHASE 3 OF 4
(SCALE: NOT TO SCALE)

APPROVED BY:

CITY ENGINEER

EFF DATE: NOVEMBER 2024 | DWG NO: 01555-10

| A | T | U |
|---|---|---|
|   CW20-1 |   CW20-4 |  CW20-7 |
| **D** | **M** | **N** |
|   G20-2 |   R5-1 |   R11-2 |




## LEGEND:

- SIGN
- FLAGGER
- APPROVED CHANNELIZATION DEVICE
- BARRICADE
- FLASHING ARROW PANEL
- AREA UNDER CONSTRUCTION
- EXISTING TRAVEL WAY
- TRAFFIC CONTROL PLAN DETOUR TRAVEL WAY

## NOTES:

1. MINOR WORK AND DAYTIME OPERATIONS ONLY.
2. REFER TO PROJECT SPECIFIC TRAFFIC CONTROL PLANS FOR MAJOR OPERATIONS AND OVERNIGHT LANE CLOSURES.
3. FOR DIMENSIONS REFER TO SHEET 01555-01.
4. INSTALL FLASHERS ON DRUMS WHERE REQUIRED AND APPROVED BY CITY TRAFFIC ENGINEER.
5. MAX. 100' WORK ZONE AT A TIME.

CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

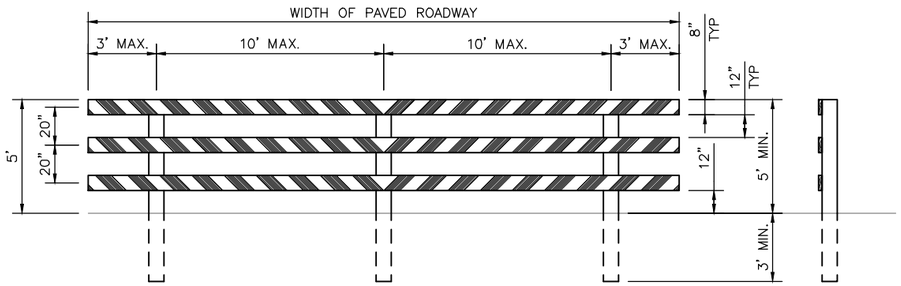
# TCP TYPICAL CONSTRUCTION ZONE AT A 4-WAY INTERSECTION (LOW VOLUME TRAFFIC) PHASE 4 OF 4

(SCALE: NOT TO SCALE)

APPROVED BY:

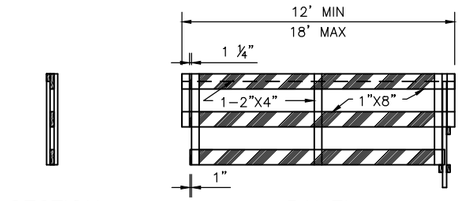
CITY ENGINEER

EFF DATE: NOVEMBER 2024 | DWG NO: 01555-11



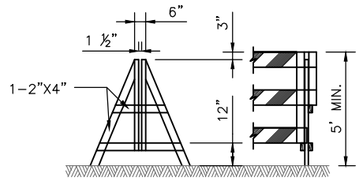

## TYPE III BARRICADE FOR END OF ROAD

FOR TYPE III BARRICADE FOR END OF ROAD, THE THREE (3) RAILS SHALL BE REFLECTIVE RED AND RELFLECTIVE WHITE STRIPES ON SIDE FACING TRAFFIC

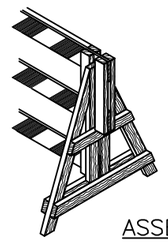



SECTION

PANEL

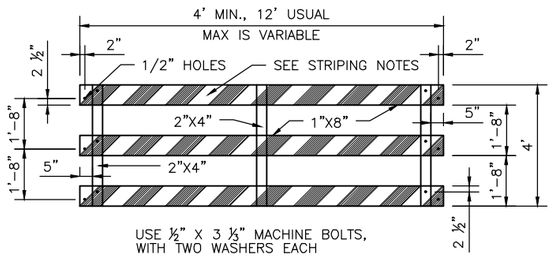



STAND

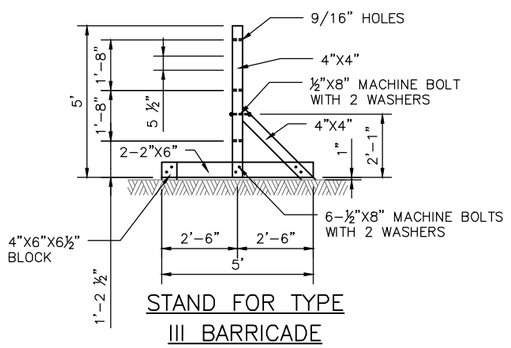


ASSEMBLY

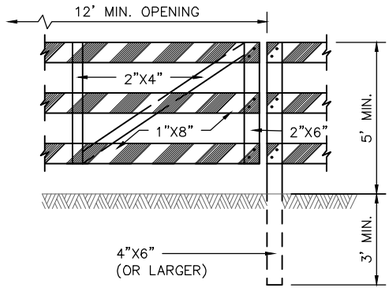
## DEMOUNTABLE TYPE III BARRICADE



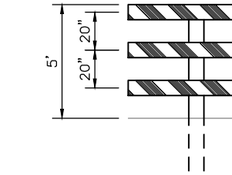

PANEL FOR TYPE III BARRICADE




STAND FOR TYPE III BARRICADE



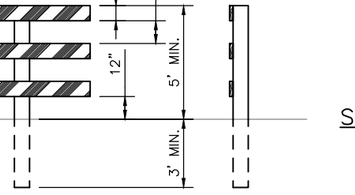

GATE FOR TYPE III BARRICADE



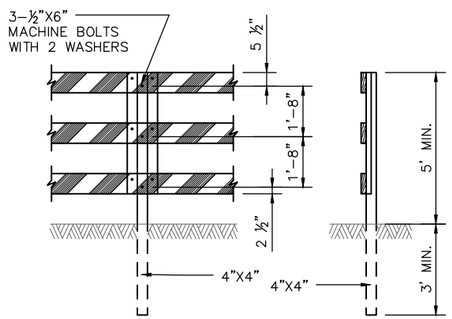

"A" FRAME



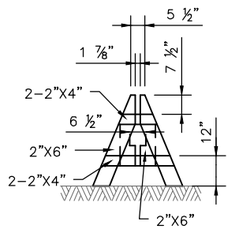

TYPE I



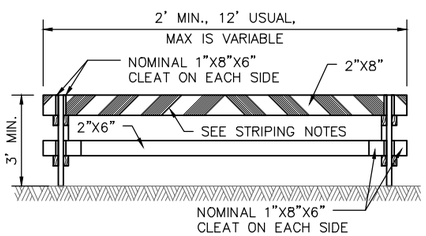

TYPE II



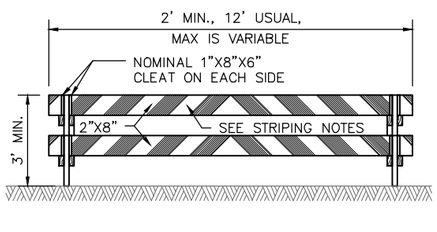

POST FOR TYPE III BARRICADE




DEMOUNTABLE



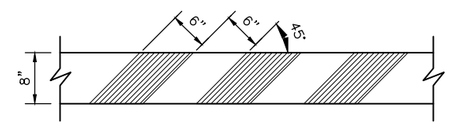

TYPE I




TYPE II

## BARRICADE NOTES:

1. THE MOST RECENT EDITION OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, AND IT'S REVISIONS, SHALL GOVERN THE CONSTRUCTION AND USE OF ALL ITEMS HEREIN DESCRIBED.
2. CHANNELIZATION DEVICES OTHER THAN BARRICADES SHOULD NORMALLY BE USED FOR CHANNELIZATION PURPOSES.
3. BARRICADES SHOULD NORMALLY BE PLACED PERPENDICULAR TO THE TRAFFIC FLOW. OTHER CHANNELIZING DEVICES, SUCH AS DRUMS, VERTICAL PANELS OR PORTABLE BARRIERS, SHOULD BE USED WHERE NEEDED TO SEPARATE TRAFFIC FROM THE WORK AREA. IN ALL CASES, THE BARRICADES SHOULD BE SO LOCATED AS TO MOST ADVANTAGEOUSLY WARN AND DIRECT TRAFFIC.
4. BARRICADES MAY BE DESIGNED AND CONSTRUCTED FROM WOOD OR ANY OTHER SUITABLE MATERIAL APPROVED BY THE TMUTCD. THE CONSTRUCTION DETAILS SHOWN HEREON ARE TYPICAL AND ARE SUGGESTED DETAILS FOR WOOD SUPPORT SYSTEMS FOR BARRICADES. THE DETAILS OF RAIL WIDTH AND STRIPING, NUMBER AND SPACING OF RAILS, MINIMUM LENGTH AND HEIGHT (ABOVE PAVEMENT) OF RAILS MUST BE ADHERED TO WHEN ALTERNATE DESIGNS ARE USED.
5. BARRICADES ARE TO BE CONSTRUCTED OF CLEAN SOUND MATERIAL. ALL SURFACES ABOVE GROUND, WHICH ARE NOT STRIPED, SHALL BE WHITE EXCEPT THE UNPAINTED GALVANIZED METAL OR ALUMINUM COMPONENTS MAY BE USED. COMPONENTS MADE OF LUMBER SHALL BE PAINTED WITH A MINIMUM OF TWO COATS OF AN APPROVED BRAND OF WHITE PAINT TO SECURE THOROUGH COVERAGE AND A UNIFORM WHITE COLOR.
6. THE REFLECTORIZED WHITE AND REFLECTORIZED ORANGE (REFLECTORIZED RED) STRIPES FOR BARRICADES, DRUMS AND VERTICAL PANELS SHALL BE CONSTRUCTED OF HIGH INTESITY SHEETING AND SHALL BE MAINTAINED TO MEET THE APPEARANCE, COLOR AND REFLECTIVITY REQUIREMENTS SET BY DOTT.
7. THE CONTRACTOR SHALL MAINTAIN EACH BARRICADE IN A CLEAN AND GOOD CONDITION.
8. BARRICADES SHALL BE REMOVED UPON COMPLETION OF THE WORK AND/OR THE ELIMINATION OF THE HAZARD ON ANY SECTION.




## STRIPING FOR BARRICADE

1. FOR ALL TYPES OF BARRICADES WITH RAILS LESS THAN 3'–0" LONG, STRIPES 4" WIDE SHALL BE USED. IDENTIFICATION MARKINGS MAY BE SHOWN ONLY ON BACK SIDE OF BARRICADE RAILS.
2. STRIPING SHOULD COVER THE FULL WIDTH OF THE RAIL. STRIPING OF RAILS, PANELS, ETC, SHOULD SLOPE DOWNWARD AT AN ANGLE OF 45° DEGREES IN DIRECTIONS TRAFFIC IS TO PASS.
3. WHERE A BARRICADE EXTENDS ENTIRELY ACROSS A ROADWAY, IT IS DESIRABLE THAT THE STRIPES SLOPE DOWNWARD IN THE DIRECTION TOWARD WHICH TRAFFIC MUST TURN IN DETOURING. WHEN BOTH RIGHT AND LEFT TURNS ARE PROVIDED FOR, THE CHEVRON STRIPING MAY SLOPE DOWNWARD IN BOTH DIRECTIONS FROM THE CENTER OF THE BARRICADE.

CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

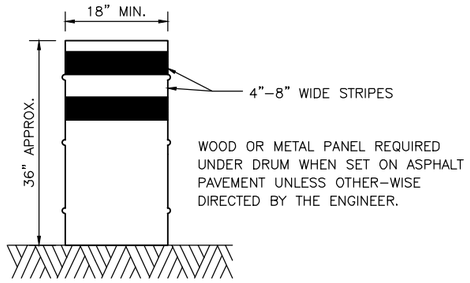
# BARRICADE DETAILS

(SCALE: NOT TO SCALE)

APPROVED BY:

CITY ENGINEER

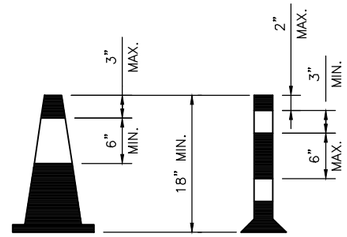
EFF DATE: NOVEMBER 2024 | DWG NO: 01555–12




## DRUMS

1. DRUMS, SET ON END, AND USED FOR TRAFFIC WARNING OR CHANNELIZATION SHALL BE APPROX 36" IN HEIGHT AND A MIN OF 18" IN DIAMETER. THE CONTRACTOR, AT HIS OPTION, MAY USE DRUMS MADE FROM STEEL BARRELS OR BLACK POLYETHYLENE PLASTIC DRUM LINERS WEIGHING APPROX EIGHT POUNDS EACH. THE MARKINGS ON DRUMS SHALL BE HORIZONTAL, CIRCUMFERENTIAL, REFLECTORIZED ORANGE AND REFLECTORIZED WHITE STRIPES, 4 TO 8 INCHES WIDE. THE FIRST REFLECTORIZED STRIPE SHOULD START WITHIN TWO (2) INCHES OF THE TOP OF THE DRUM. THERE SHALL BE AT LEAST TWO ORANGE AND TWO WHITE STRIPES ON EACH DRUM. IF THERE ARE NON–REFLECTORIZED SPACES BETWEEN THE HORIZONTAL ORANGE AND WHITE STRIPES, THEY SHALL BE NO MORE THAN 2 INCHES WIDE. METAL DRUMS SHALL BE PAINTED BLACK OR ORANGE BEFORE REFLECTORIZED STRIPES ARE ADDED. ALL DRUMS ON PROJECT WILL BE THE SAME COLOR. WHEN DRUMS ARE PLACED IN THE ROADWAY, APPROPIATE WARNING SIGNS SHOULD BE USED. DURING HOURS OF DARKNESS, A FLASHING WARNING LIGHT SHOULD BE PLACED ON DRUMS USED SINGLY AS A WARNING DEVICE. STEADY BURN ELECTRIC LIGHTS OR DELINEATORS SHOULD BE PLACED ON DRUMS USED IN SERIES FOR TRAFFIC CHANNELIZATION. DRUMS SHALL BE WEIGHTED WITH SAND TO THE EXTENT INDICATED IN THE PLANS.

2. CWI–8 CHEVRON SIGNS, CWI–6A ARROW SIGNS OR VP–I VERTICAL PANELS MOUNTED ABOVE DRUMS MAY BE USED AS SUPPLEMENTS TO DRUM DELINEATION.

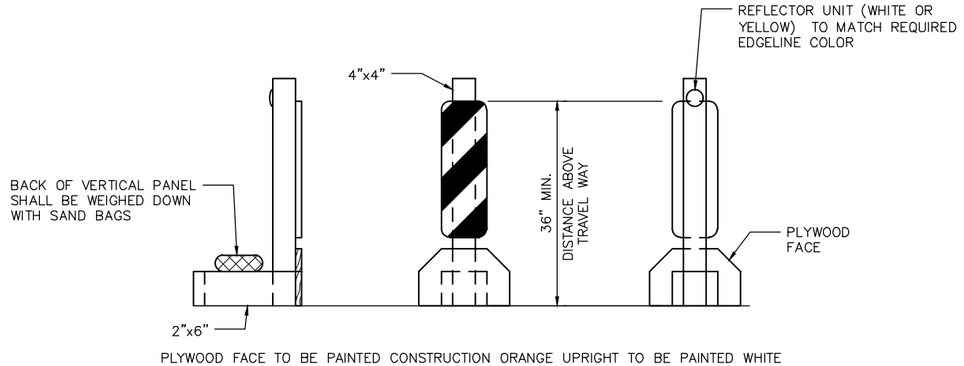



## CONES

1. TRAFFIC CONES AND TUBULAR MARKERS SHALL BE A MIN OF 18" INCHES IN HEIGHT WITH A BROADENED BASE AND MAY BE MADE OF VARIOUS MATERIALS TO WITHSTAND IMPACT WITHOUT DAMAGE TO THEMSELVES OR TO VEHICLES. LARGER SIZES SHOULD BE USED ON FREEWAYS AND OTHER ROADWAYS WHERE SPEED ARE RELATIVELY HIGH OR WHERE EVER MORE CONSPICUOUS GUIDANCE IS NEEDED. ORANGE SHALL BE THE PREDOMINANT COLOR ON CONES AND TUBULAR MARKERS. THEY SHOULD BE KEPT CLEAN AND BRIGHT FOR MAX TARGET VALUE. FOR NIGHT TIME USE THEY SHALL BE REFLECTORIZED OR EQUIPPED WITH LIGHTING DEVICES FOR MAX VISIBILITY. REFLECTORIZED MATERIAL SHALL HAVE A SMOOTH, SEALED OUTER SURFACE WHICH WILL DISPLAY THE SAME APPROX COLOR DAY AND NIGHT.

2. REFLECTORIZATION OF TUBULAR MARKERS SHALL BE A MIN OF TWO THREE–INCH BANDS PLACED A MAX OF 2" FROM THE TOP WITH A MAX OF 6" BETWEEN THE BANDS. REFLECTORIZATION OF CONES SHALL BE PROVIDED BY A MIN 6" BAND PLACED A MAX OF 3" FROM THE TOP.

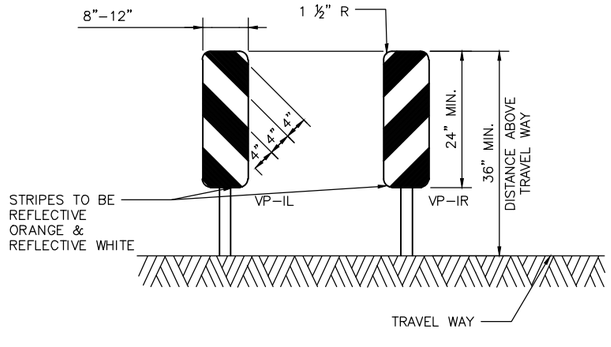
3. CONES OR TUBULAR MARKERS ARE GENERALLY ONLY SUITABLE FOR TEMPORARY USAGE (UP TO 8 HOURS) WITH OTHER CHANNELIZATION DEVICES SUCH AS VERTICAL PANELS OR BARRICADES PREFERRED FOR LONGER TERM USAGE. CARE SHOULD BE TAKEN TO INSURE THAT THEY REMAIN IN THEIR PROPER LOCATION AND IN AN UPRIGHT POSITION.




PLYWOOD FACE TO BE PAINTED CONSTRUCTION ORANGE UPRIGHT TO BE PAINTED WHITE

## TYPICAL PORTABLE VERTICAL PANEL OR DELINEATOR

OTHER SIMILAR SUPPORTS MAY BE USED WHEN APPROVED BY TMUTCD AND DIRECTED BY THE CITY OF CLEAR LAKE SHORES.




## VERTICAL PANELS (VP)

VERTICAL PANELS ARE NORMALLY USED AS CHANNELIZING DEVICES TO INDICATE TANGENT OR NEARLY TANGENT ROADWAY ALIGNMENT WHERE GOOD TARGET VALUE OF A DEVICE IS NEEDED IN DAYTIME AS WELL AS THE NIGHTTIME. IN ADDITION, VERTICAL PANELS SHOULD BE USED AT THE EDGE OF SHOULDER DROP–OFFS AND OTHER SUCH AREAS AS LANE TRANSITIONS WHERE POSITIVE DAY AND NIGHT DELINEATION MAY BE REQUIRED. VERTICAL PANELS SHOULD BE MOUNTED BACK TO BACK IF USED AT THE EDGE OF CUTS ADJACENT TO TWO–WAY TWO LANE ROADWAYS. STRIPES SHOULD ALWAYS SLOPE DOWNWARD TOWARD THE TRAVELED WAY.

CITY OF
# CLEAR LAKE SHORES
ROAD AND DRAINAGE STANDARDS

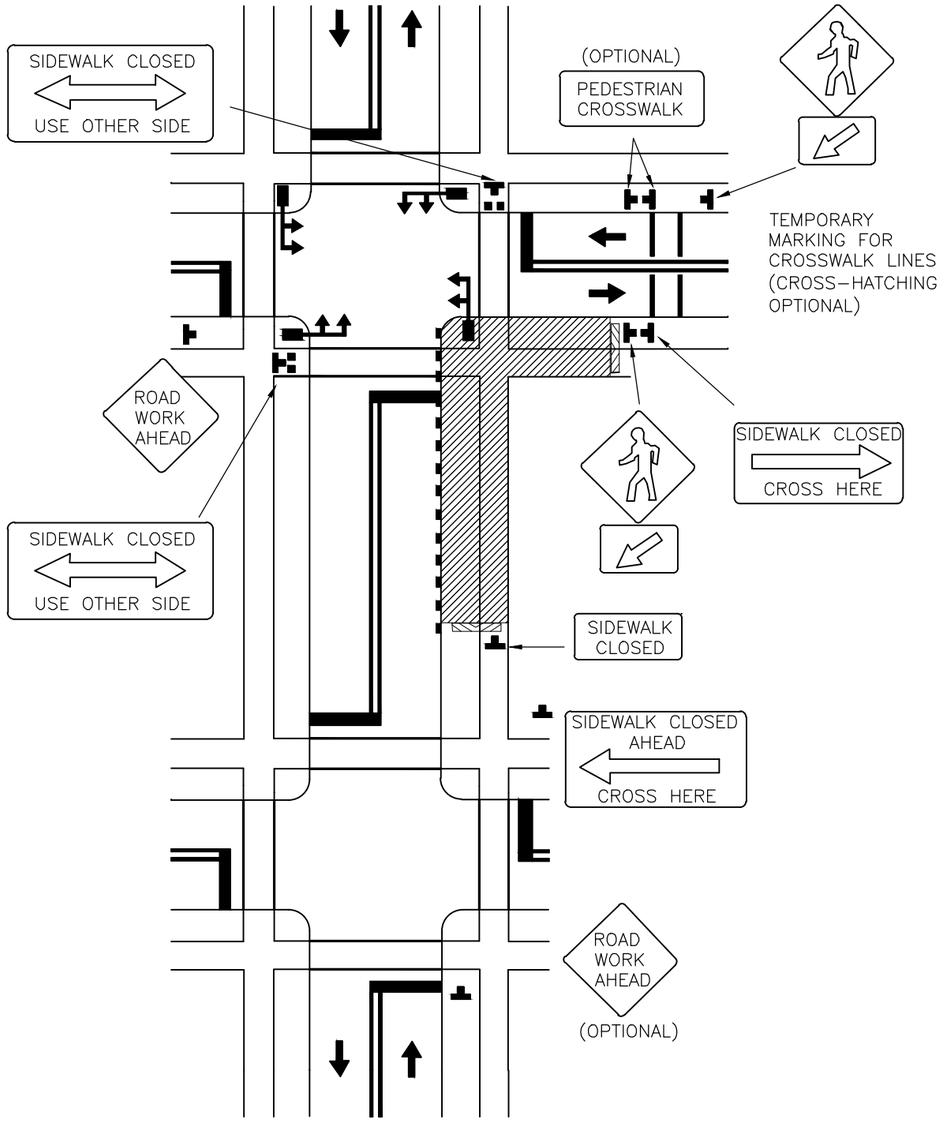
## CHANNELIZING DEVICES

(SCALE: NOT TO SCALE)

APPROVED BY:

CITY ENGINEER

EFF DATE: NOVEMBER 2024 | DWG NO: 01555–13




CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

## CROSSWALK CLOSURE AND PEDESTRIAN DETOURS

(SCALE: NOT TO SCALE)

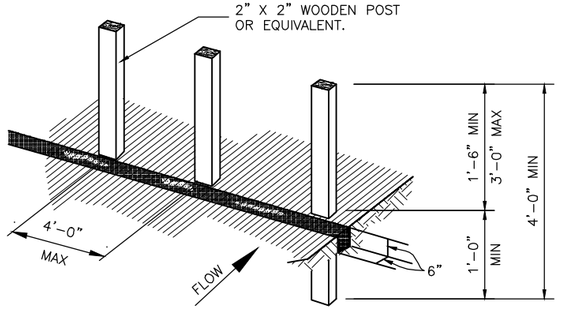
APPROVED BY:

CITY ENGINEER

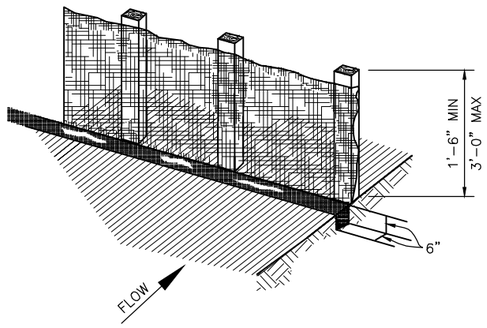
EFF DATE: NOVEMBER 2024 | DWG NO: 01555–14

## 01560–01

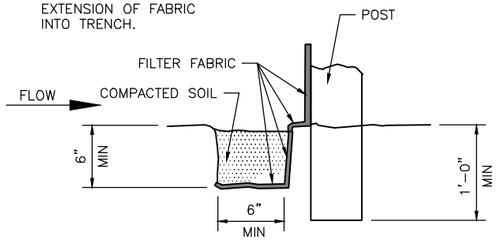
1. SET POST AT REQUIRED SPACING AND DEPTH. EXCAVATE A 6" X 6" TRENCH UPSLOPE ALONG THE LINE OF POSTS.




2. ATTACH FILTER FABRIC TO POSTS AND INSTALL IT INTO THE TRENCH. BACKFILL THE TRENCH AND COMPACT THE EXCAVATED SOIL.



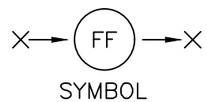

EXTENSION OF FABRIC INTO TRENCH.




### GENERAL NOTES:

1. SET POST AT 4–FEET MAXIMUM SPACING. IF FACTORY PREASSEMBLED FENCE WITH SUPPORT NETTING IS USED, SPACING OF POST MAY BE INCREASED TO 8–FEET MAXIMUM.
2. WHEN TWO SECTIONS OF FILTER FABRIC ADJOIN EACH OTHER, OVERLAP 6–INCHES AT THE POST, FOLD TOGETHER, AND ATTACH TO THE POSTS.
3. REMOVE SEDIMENT DEPOSITS WHEN SILT DEPTH REACHES ONE–THIRD OF THE HEIGHT OF THE FENCE.

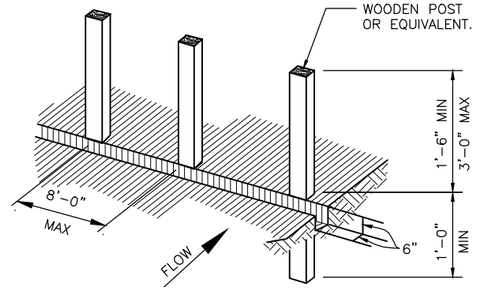
### FILTER FABRIC FENCE



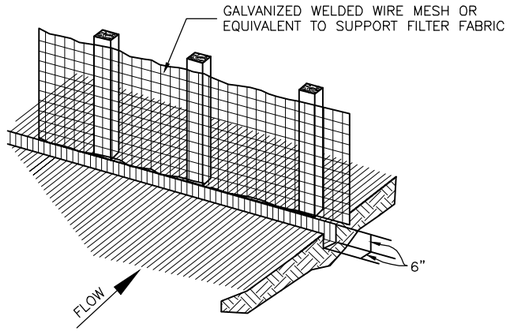

SYMBOL

## 01561–01

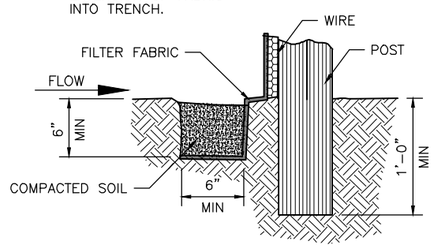
1. SET POST AT REQUIRED SPACING AND DEPTH. EXCAVATE A 6" X 6" TRENCH UPSLOPE ALONG THE LINE OF POSTS.



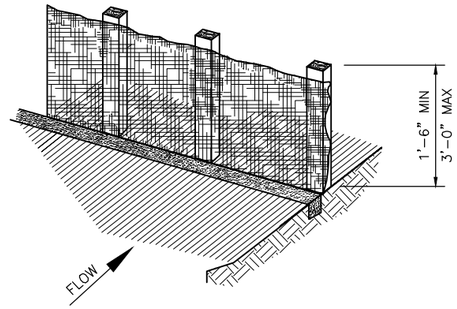

2. SECURE MESH FENCING TO POSTS.



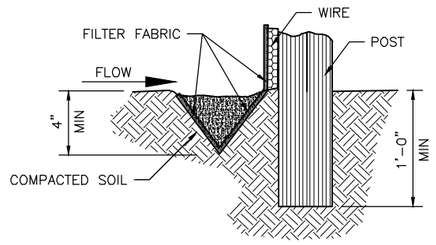

EXTENSION OF FABRIC INTO TRENCH.




3. ATTACH FILTER MATERIAL TO WIRE FENCE AND EXTEND IT INTO THE TRENCH. BACKFILL AND COMPACT THE EXCAVATED SOIL.



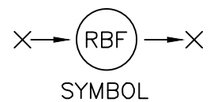

ALTERNATIVE V–TRENCH EXTENSION OF FABRIC INTO TRENCH.




### GENERAL NOTES:

1. SECURELY FASTEN MESH FENCING TO POSTS WITH STAPLES OR TIE WIRES.
2. SECURELY FASTEN FILTER FABRIC MESH FENCING.
3. WHEN TWO SECTIONS OF FILTER FABRIC ADJOIN EACH OTHER, OVERLAP 6–INCHES AT A POST, FOLD TOGETHER, AND ATTACH TO A POST.
4. REMOVE SEDIMENT DEPOSITS WHEN SILT REACHES ONE–THIRD OF THE HEIGHT OF THE FENCE IN DEPTH

### REINFORCED FILTER FABRIC FENCE




SYMBOL

CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

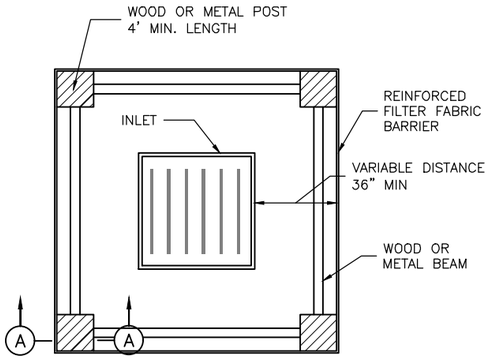
# FILTER FABRIC FENCE & REINFORCED FILTER FABRIC BARRIER

(SCALE: NOT TO SCALE)

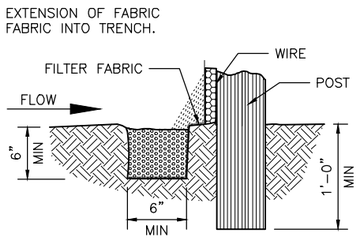
APPROVED BY:

CITY ENGINEER

EFF DATE: NOVEMBER 2024 | DWG NO: 01560 & 01561



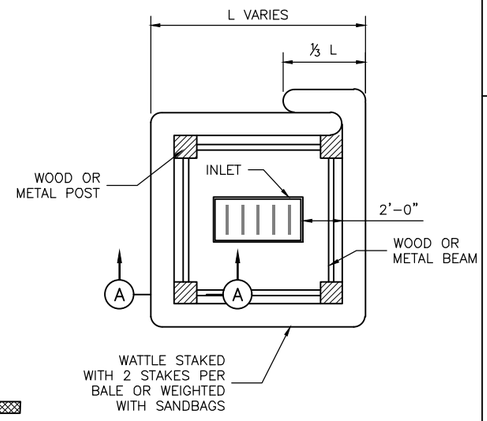

PLAN



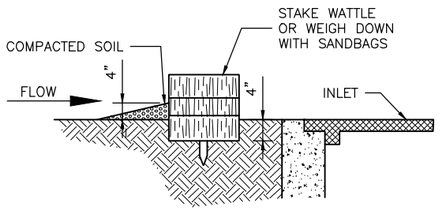

SECTION A–A

NOTES:

1. SEE REINFORCED FILTER FABRIC BARRIER DETAIL
2. MAXIMUM POST SPACING OF 4–FEET




PLAN



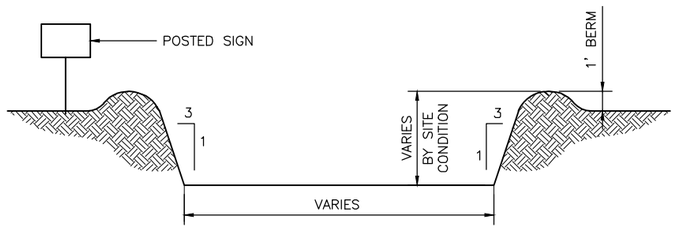

SECTION A–A

NOTES:

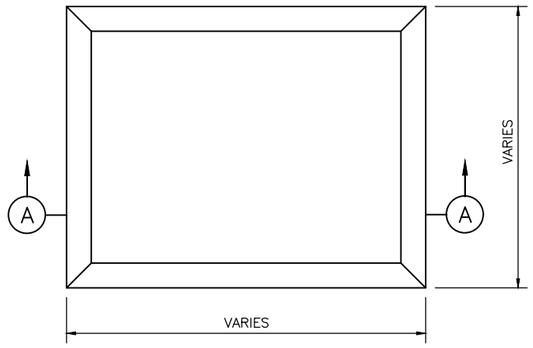
1. TYPICALLY STRAW BALES ARE NOT RECOMMENDED FOR INLET PROTECTION BARRIERS.

INLET PROTECTION BARRIERS
FOR STAGE I INLETS

IPB
SYMBOL




SECTION A–A



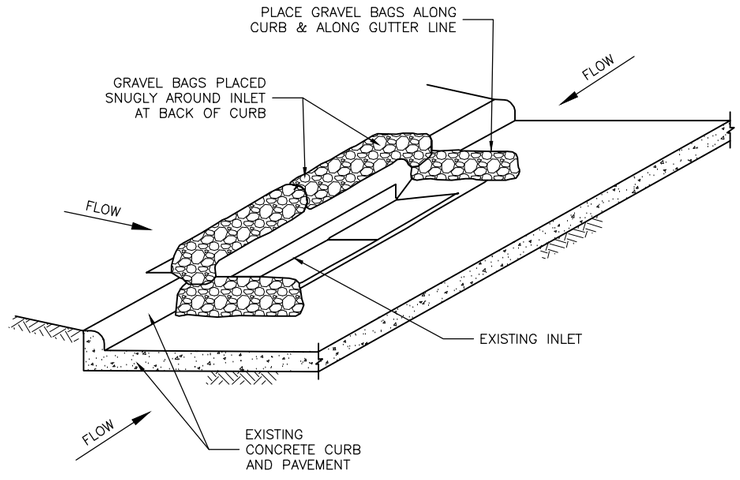

PLAN VIEW

GENERAL NOTES:

1. POST A SIGN READING "CONCRETE WASH OUT PIT" NEXT TO THE PIT.
2. VERBALLY INSTRUCT THE CONCRETE TRUCK DRIVERS WHERE THE PIT IS AND TO WASH OUT THEIR TRUCKS IN THE PIT AND NO WHERE ELSE.
3. UNPON THE CONCRETE SETTING UP (CURING, DRYING OUT), THE CONCRETE WASTE SHALL BE REMOVE FROM THE PROJECT SITE AND DISPOSED OF PROPERLY BY THE CONTRACTOR. AFTER REMOVAL OF THE CONCRETE WASTE, THE WASH OUT PIT SHALL BE FILLED WITH CLEAN FILL MATERIAL AND COMPACTED TO IN–SITU CONDITIONS, OR AS DIRECTED BY THE PROJECT SPECIFICATIONS.
4. CONCRETE WASH OUT PITS SHALL NOT BE LOCATED DIRECTLY ADJACENT TO, NOR AT ANY TIME DRAIN INTO THE STORM SEWER SYSTEM OR ANY OTHER SWALE, DITCH, OR WATERWAY.
5. CONSTRUCT ENTRY ROAD AND BOTTOM OF WASHOUT AREA TO SUPPORT EXPECTED LOADINGS FROM TRUCK EQUIPMENT.

CONCRETE TRUCK WASHOUT AREA

CTW
SYMBOL




INLET PROTECTION BARRIERS
FOR STAGE II INLETS

IPB–II
SYMBOL

GENERAL NOTES:

1. REMOVE SEDIMENT DEPOSIT WHEN THE SEDIMENT HAS ACCUMULATED TO ONE–THIRD THE HEIGHT OF THE BARRIER.
2. GRAVEL BAGS SHALL NOT BLOCK THROAT OF INLET UNLESS DIRECTED BY ENGINEER.

CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

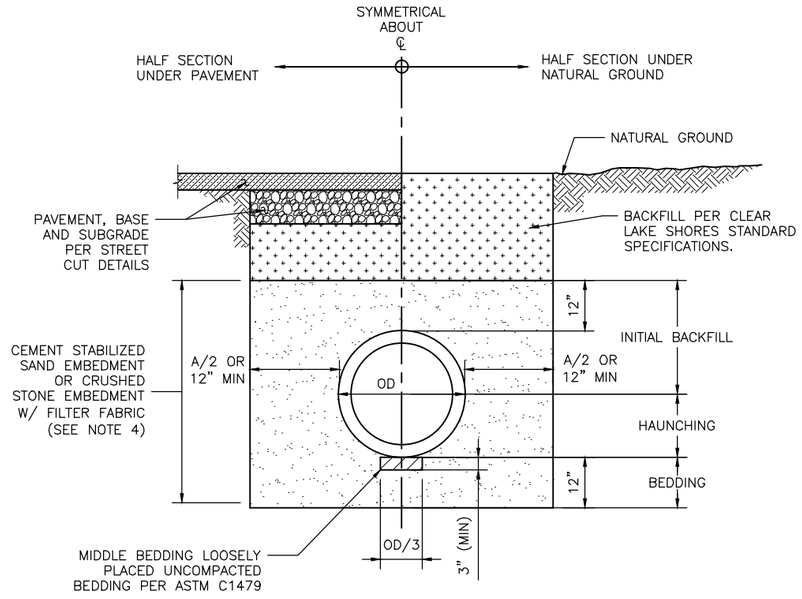
# SOURCE CONTROL FOR EROSION AND SEDIMENTATION

(SCALE: NOT TO SCALE)

APPROVED BY:

CITY ENGINEER

EFF DATE: NOVEMBER 2024 | DWG NO: 01566–01



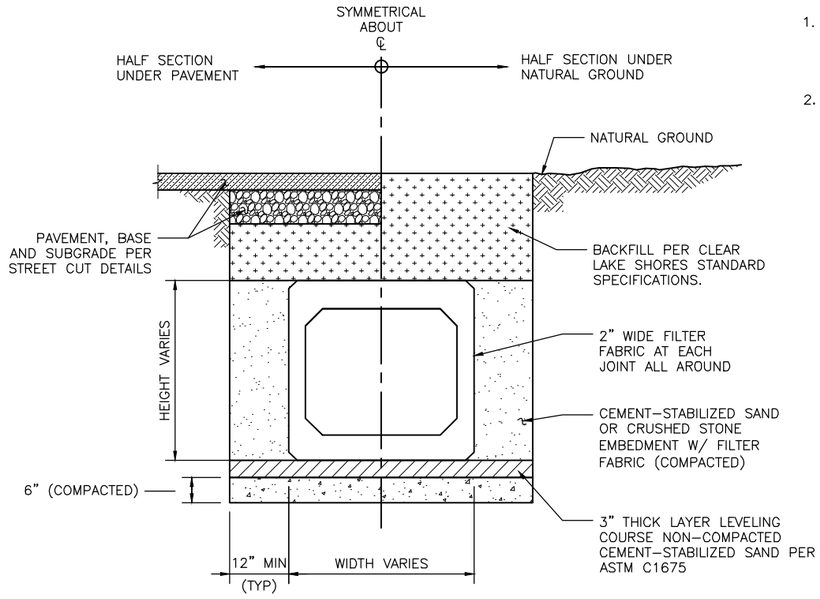

NOTES:

1. THIS DETAIL MAY BE USED ONLY FOR DRY STABLE TRENCH CONDITIONS PER CITY OF CLEAR LAKE SHORES STANDARD. SEE CITY OF CLEAR LAKE SHORES STANDARD SPECIFICATION FOR REQUIREMENTS IN OTHER CONDITIONS.
2. MIN TRENCH WIDTH SHALL BE PIPE OD PLUS AN ALLOWANCE "A" FOR THE NOMINAL PIPE SIZE:

| NOMINAL PIPE SIZE | "A" |
|---|---|
| LESS THAN 18 | 18" |
| 18" TO 30" | 24" |
| GREATER THAN 30" | 36" |

3. MAX. TRENCH WIDTH SHALL BE NOT GREATER THAN MIN. TRENCH PLUS 24–INCHES, UNLESS OTHERWISE NOTED.
4. ALTERNATIVE EMBEDMENT BACKFILL MATERIALS FOR FORCE MAINS MAY BE ALLOWED. SEE CLEAR LAKE SHORES STANDARD SPECIFICATIONS.

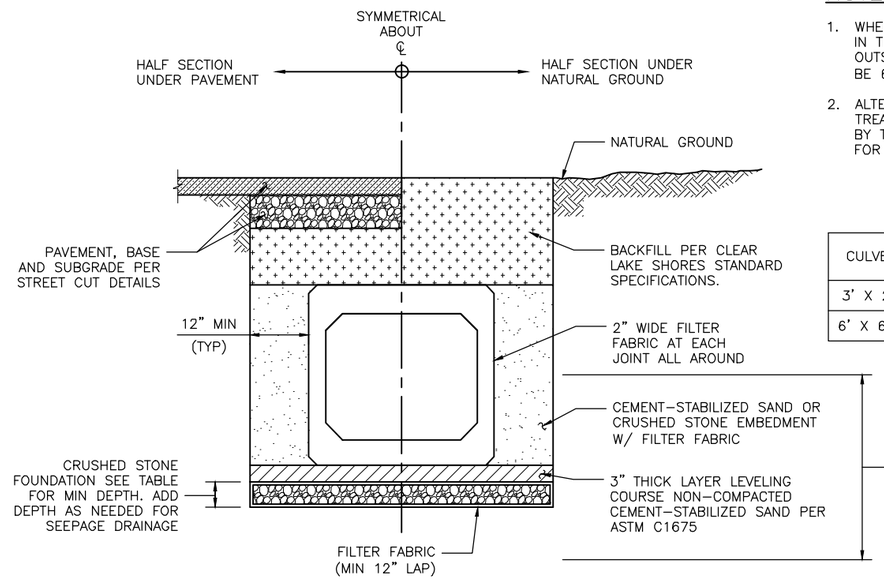
## STORM SEWER BEDDING AND BACKFILL FOR DRY STABLE TRENCH




NOTES:

1. WHERE MULTIPLE BOX SEWER ARE USED IN THE SAME TRENCH, MIN. OUTSIDE TO OUTSIDE BOX SEWER SEPARATION SHALL BE 6".
2. REFER TO STANDARD DETAIL 02980 FOR SUBGRADE AND PAVEMENT FOR STREET CUTS.

## PRECAST CONCRETE BOX STORM SEWER BEDDING AND BACKFILL FOR DRY STABLE TRENCH



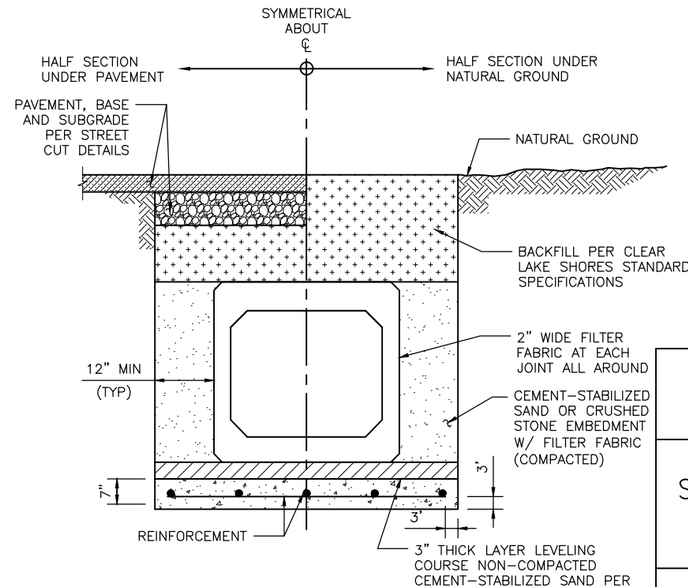

NOTES:

1. WHERE MULTIPLE BOX SEWER ARE USED IN THE SAME TRENCH, MIN. OUTSIDE TO OUTSIDE BOX SEWER SEPARATION SHALL BE 6".
2. ALTERNATIVE TRENCH BOTTOM TREATMENT MAY BE USED AS APPROVED BY THE CITY ENGINEER AND AS PAID FOR IN THE PROPOSAL.

TABLE

| CULVERT SIZE (FT) | FOUNDATION DEPTH (IN) |
|---|---|
| 3' X 2' TO 6' X 6' | 12 |
| 6' X 6' AND LARGER | 18 |

## PRECAST CONCRETE BOX STORM SEWER BEDDING AND BACKFILL FOR WET STABLE TRENCH




NOTES:

1. WHERE MULTIPLE BOX SEWER ARE USED IN THE SAME TRENCH, MIN. OUTSIDE TO OUTSIDE BOX SEWER SEPARATION SHALL BE 6".
2. REINFORCED CONCRETE SLAB PIPE BEDDING TO BE PLACED IN DRY TRENCH ONLY.
3. CONCRETE SLAB TO REACH MIN COMPRESSIVE STRENGTH OF 1000 PSI BASED ON MAX DESIGN BEFORE PIPE IS LAID.
4. PRECAST SEAL SLAB MAYBE USED AS APPROVED BY CITY ENGINEER.

## PRECAST CONCRETE BOX STORM SEWER BEDDING AND BACKFILL WITH SEAL SLAB

CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

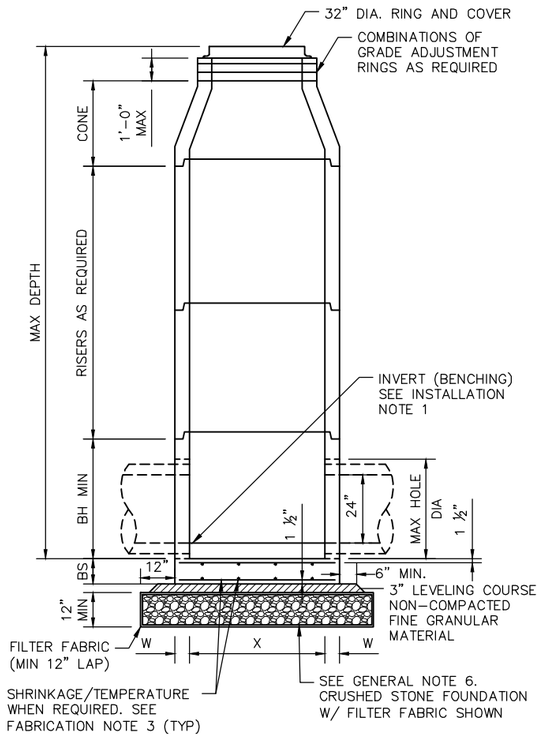
# STORM SEWER BEDDING AND BACKFILL

(SCALE: NOT TO SCALE)

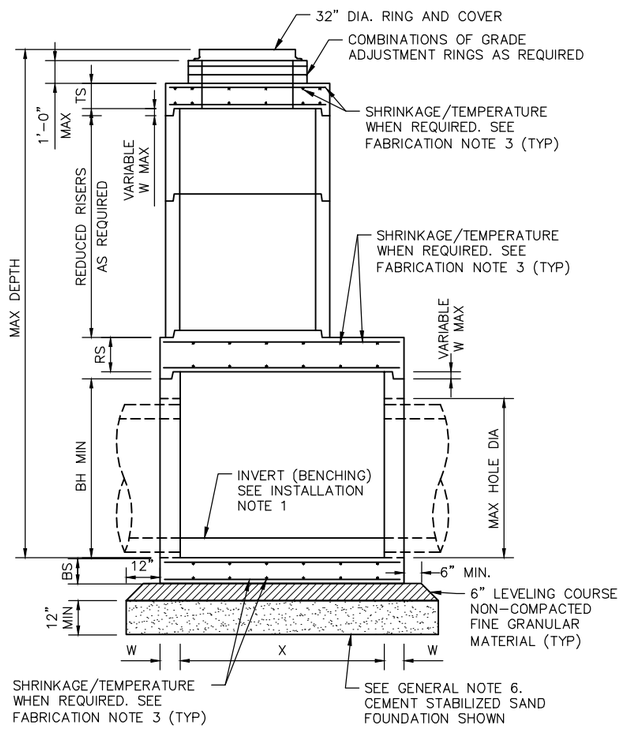
APPROVED BY:

CITY ENGINEER

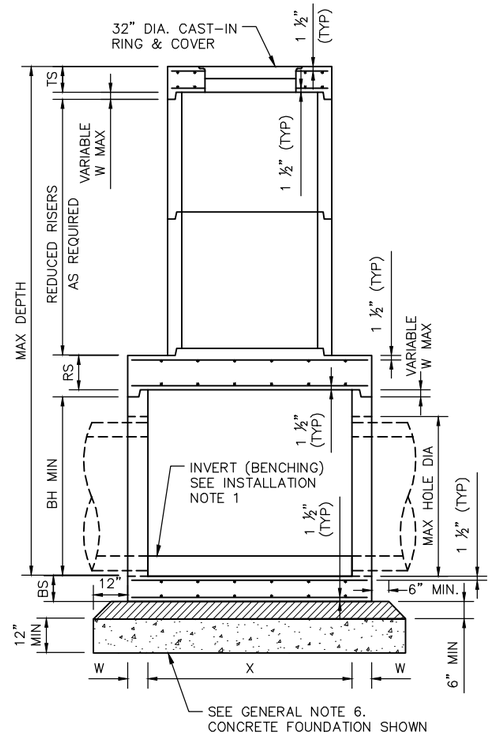
EFF DATE: NOVEMBER 2024 | DWG NO: 02318–01



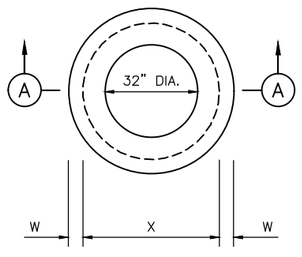

ELEVATION A–A
CONE TOP WITH SHIP LOOSE RING & COVER OPTION




ELEVATION B–B
CONE TOP WITH SHIP LOOSE RING & COVER OPTION

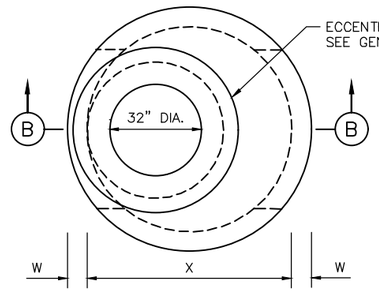



ELEVATION C–C
CONE TOP WITH SHIP LOOSE RING & COVER OPTION



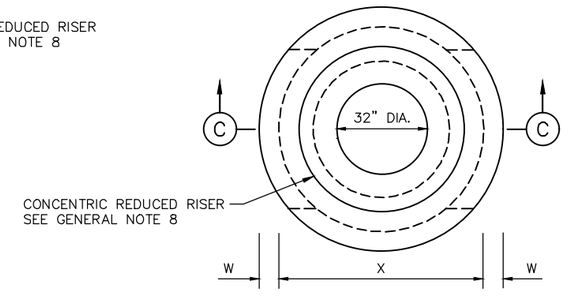

PLAN VIEW A
COVER NOT SHOWN

4–FT DIA MANHOLE




PLAN VIEW B
COVER NOT SHOWN

5–FT & 6–FT DIA MANHOLE
ECCENTRIC MANHOLE (PREFERRED CONFIGURATION)




PLAN VIEW C
COVER NOT SHOWN

5–FT & 6–FT DIA MANHOLE
CONCENTRIC MANHOLE (ALTERNATE CONFIGURATION)

## FABRICATION NOTES:

1. CONCRETE FOR MANHOLE: MINIMUM 4,000 PSI IN 28 DAYS.
2. PROVIDE GRADE 60 REINFORCED 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 IN²/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 SPIGOT 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.
8. THREE DIFFERENT OPTIONS FOR CAPPING THE MANHOLE RISER NEAR THE FINISHED GRADE ARE SHOWN. CONES CAN BE USED WHEN COVER IS SUFFICIENT TO ALLOW FOR PROPER PLACEMENT. FLAT LIDS ARE TO BE USED WHERE COVER IS LIMITED.

## INSTALLATION NOTES:

1. IF REQUIRED ELSEWHERE, INVERTS (BENCHING) TO BE PROVIDED BY CONTRACTOR. CONCRETE OR MORTAR USED FOR INVERT IS SUBSIDIARY TO THIS ITEM. REFER TO CITY OF CLEAR LAKE SHORES SPECIFICATION 02542 FOR INVERT (BENCHING) REQUIREMENTS.
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 ½ THE JOINT DEPTH, WHICHEVER IS GREATER.
3. DO NOT GROUT RUBBER GASKET JOINTS WITHOUT MANUFACTURER'S RECOMMENDATION.
4. INITIAL INSTALLATION OF GRADE ADJUSTMENT RINGS IS LIMITED TO 1'–0" MAX AS SHOWN.
5. GRADE ADJUSTMENT RINGS MAY BE INCREASED TO 1'–6" MAX WHEN FUTURE CONSTRUCTION AFFECTS FINAL GRADE OF STRUCTURE. MAKE ADJUSTMENTS GREATER THAN 1'–6" WITH ADDITIONAL RISERS. ADJUSTMENTS MAY BE MADE UP TO THE MAX DEPTH OF 25'–0". STRUCTURE MUST BE EVALUATED IF MAX DEPTH WILL BE EXCEEDED.

## GENERAL NOTES:

1. SEE TABLE 1 FOR MINIMUM DESIGN REQUIREMENTS. CONCENTRIC RISER WITH RESPECT TO BASE (ALTERNATIVE CONFIGURATION) FALLS OUTSIDE THE SCOPE OF REQUIREMENTS PROVIDED. ENGINEER OF RECORD ACCEPTS RESPONSIBILITY FOR SAFETY AND ADEQUACY OF MANHOLE IF THE ALTERNATIVE CONFIGURATION IS USED.
2. DESIGNED ACCORDING TO ASTM C478.
3. PAYMENT FOR PRECAST MANHOLE PER SECTION 02542.
4. PIPE OD + PLACEMENT TOLERANCE MUST BE EQUAL OR LESS THAN MAX HOLE DIA. FOR RIGID PIPE, PLACEMENT TOLERANCE IS 4" MAX, 2" MIN. FOR FLEXIBLE PIPE, CONSULT BOOT/SEAL MANUFACTURER'S SPECIFICATION FOR PLACEMENT TOLERANCE.
5. STORM WATER SEWER PIPE INTERNAL DIA SHALL NOT BE LESS THAN 24".
6. FOUNDATION/SUBGRADE TO BE DESIGNED BY ENGINEER AND MEET MINIMUM REQUIREMENTS ACCORDING TO SECTION 02542.
7. ALL STORM WATER MANHOLES ARE TO BE PRECAST CONCRETE, UNLESS OTHERWISE NOTED ELSEWHERE IN THE PLANS.
8. ECCENTRIC REDUCED RISER WITH RESPECT TO BASE IS THE PREFERRED MANHOLE CONFIGURATION. CONCENTRIC REDUCED RISER WITH RESPECT TO BASE MANHOLE CONFIGURATION IS AN ALTERNATIVE DESIGN THAT WILL BE ACCEPTED BASED ON THE NEEDS OF THE CITY OF CLEAR LAKE SHORES.
9. CONES MAY BE CONCENTRIC OR ECCENTRIC. REDUCTION CONES ARE ACCEPTABLE. REFER TO MANUFACTURER FOR CONE DIMENSIONS.
10. MANHOLE SIZE SHALL CONSIDER ENGINEERING ECONOMY. THIS DETAIL IS NOT APPLICABLE TO ROUND MANHOLES LARGER THAN 6–FOOT DIA.

TABLE 1

PRECAST ROUND MANHOLE (PRM) MINIMUM REQUIREMENTS FOR 24 IN TO 42 IN INTERNAL DIA STORM SEWER PIPES.

| | SIZE | BACK SLAB THICKNESS | BASE UNIT OR RISER THICKNESS | REDUCED RISER DIA | REDUCING SLAB THICKNESS | TOP SLAP THICKNESS | MAX DEPTH TO TOP OF BASE SLAB | MIN HEIGHT | MAX HOLE DIA |
|---|---|---|---|---|---|---|---|---|---|
| | X | BS | W | ID | RS | TS | MAX DEPTH | BH MIN | MAX HOLE DIA. |
| | FT | IN | IN | IN. | IN | IN | FT | IN | IN |
| PRM | 4 | 9 | 5 | – | – | 9 | 25 | 42 | 35 |
| | 5 | 9 | 6 | 48 | 9 | 9 | 25 | 42 | 42 |
| | 6 | 9 | 7 | 48/60* | 12 | 9 | 25 | 42 | 56 |

(*) 60–IN REDUCED RISER IS TO BE USED WHEN DEEMED NECESSARY TO SATISFY WALL PENETRATION SPACING REQUIREMENTS.

CITY OF
CLEAR LAKE SHORES
ROAD AND DRAINAGE STANDARDS

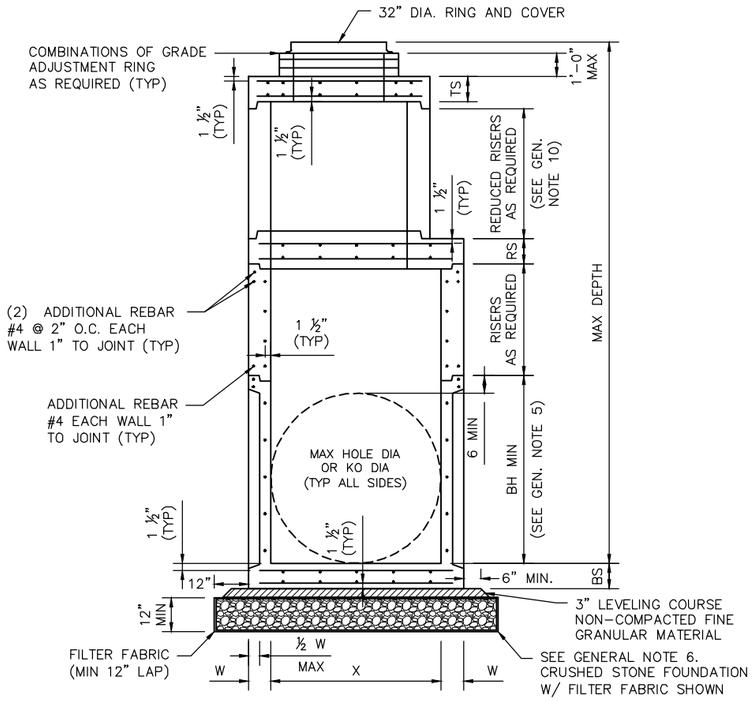
# STORM SEWER TYPE C PRECAST ROUND MANHOLE

(SCALE: NOT TO SCALE)

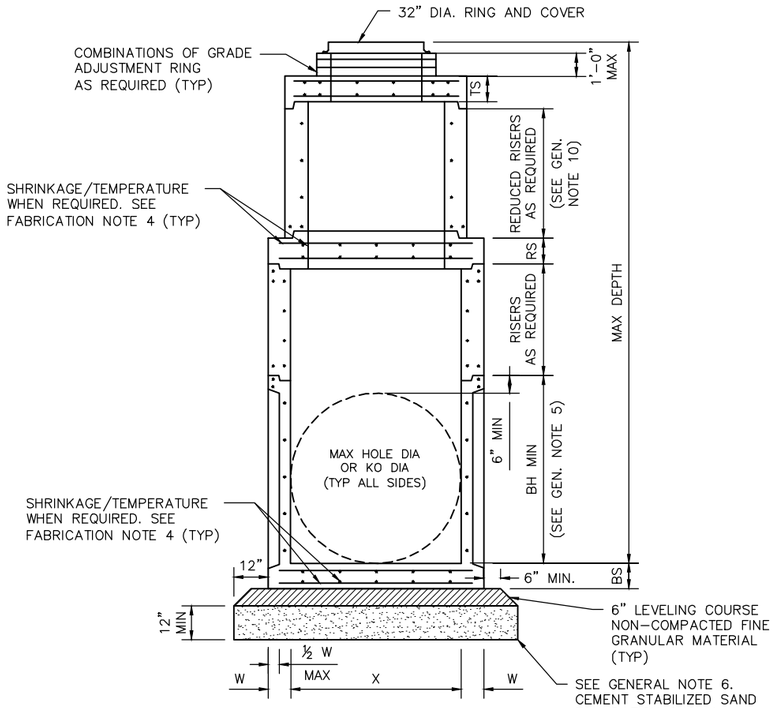
APPROVED BY:

CITY ENGINEER

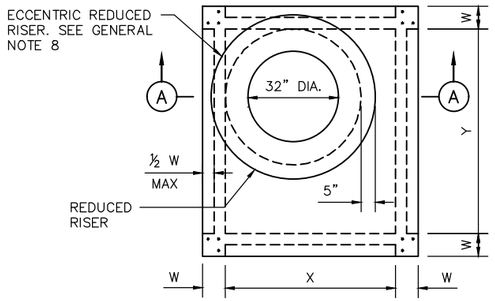
EFF DATE: NOVEMBER 2024 | DWG NO: 02542–01




ELEVATION A–A
CONE TOP WITH SHIP LOOSE RING & COVER OPTION

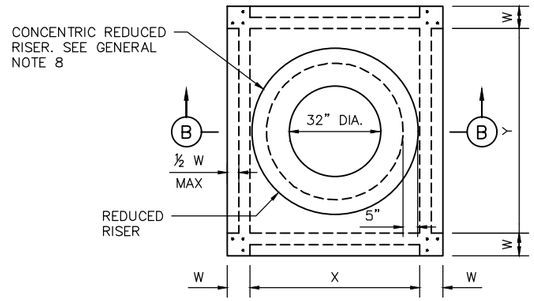



ELEVATION B–B
CONE TOP WITH SHIP LOOSE RING & COVER OPTION




PLAN VIEW A
COVER NOT SHOWN

ECCENTRIC MANHOLE
(PREFERRED CONFIGURATION)




PLAN VIEW B
COVER NOT SHOWN

CONCENTRIC MANHOLE
(ALTERNATE CONFIGURATION)

## FABRICATION NOTES:

1. CONCRETE FOR JUNCTION BOX: MINIMUM 4,000 PSI IN 28 DAYS.
2. PROVIDE GRADE 60 REINFORCED STEEL OR EQUIVALENT AREA OF WWR. PROVIDE CIRCUMFRENTIAL REINFORCING STEEL IN VERTICAL WALLS OF RISER AND CONE IN ACCORDANCE WITH ASTM C478.
3. PROVIDE TYPICAL MINIMUM CONCRETE CLEAR COVER OF 1 ½" TO REINFORCING STEEL AT INTERIOR OR EXTERIOR WALLS.
4. SLABS WITH A THICKNESS OF 8" OR GREATER REQUIRE SHRINKAGE AND TEMPERATURE REINFORCING STEEL. PROVIDE STEEL AREA = 0.11 IN²/FT EACH WAY.
5. MANUFACTURE BASE AND RISERS TO NEAREST 3" INCREMENT.
6. DESIGN TONGUE AND GROOVE JOINTS FOR FULL CLOSURE ON BOTH SHOULDERS. MINIMUM SPIGOT DEPTH IS ¾".
7. PROVIDE LIFTING DEVICES IN CONFORMANCE WITH MANUFACTURER'S RECOMMENDATIONS.
8. PROVIDE CAST IRON SOLID COVER, UNLESS NOTED OTHERWISE ELSEWHERE IN THE PLANS.
9. MAXIMUM SPACING OF REINFORCEMENT IS 8".
10. AT MANUFACTURERS OPTION, PROVIDE CAST OR CORED HOLES OR THIN WALL PANELS (KO) TO THE MAXIMUM DIA SHOWN FOR EACH. WHEN NO PENETRATION IS REQUIRED, IT IS ACCEPTABLE TO PROVIDE A WALL WITH NO SECTIONAL REDUCTION.
11. THREE DIFFERENT OPTIONS FOR CAPPING THE MANHOLE RISER NEAR THE FINISHED GRADE ARE SHOWN. CONES CAN BE USED WHEN COVER IS SUFFICIENT TO ALLOW FOR PROPER PLACEMENT. FLAT LIDS ARE TO BE USED WHERE COVER IS LIMITED.
12. BASES AND RISERS MAY HAVE CAST, CUT OR THIN WALL PANEL (KO) THAT ARE ROUND AND DO NOT EXTEND INTO THE FLOOR, INTO WALLS, OR WITHIN 6" OF THE JOINT ABOVE OR BELOW.

## INSTALLATION NOTES:

1. IF REQUIRED ELSEWHERE, INVERTS (BENCHING) TO BE PROVIDED BY CONTRACTOR. CONCRETE OR MORTAR USED FOR INVERT IS SUBSIDIARY TO THIS ITEM. REFER TO CITY OF CLEAR LAKE SHORES SPECIFICATION 02542 FOR INVERT (BENCHING) REQUIREMENTS.
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 ½ 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.
6. INITIAL INSTALLATION OF GRADE ADJUSTMENT RINGS IS LIMITED TO 1'–0" MAX AS SHOWN.
7. GRADE ADJUSTMENT RINGS MAY BE INCREASED TO 1'–6" MAX WHEN FUTURE CONSTRUCTION AFFECTS FINAL GRADE OF STRUCTURE. MAKE ADJUSTMENTS GREATER THAN 1'–6" WITH ADDITIONAL RISERS. ADJUSTMENTS MAY BE MADE UP TO THE MAX DEPTH OF 25'–0". STRUCTURE MUST BE EVALUATED IF MAX DEPTH WILL BE EXCEEDED.

## GENERAL NOTES:

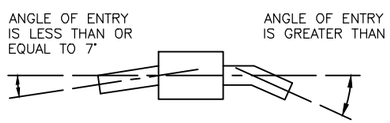
1. SEE TABLE 1 FOR MINIMUM DESIGN REQUIREMENTS. CONCENTRIC RISER WITH RESPECT TO BASE (ALTERNATIVE CONFIGURATION) FALLS OUTSIDE THE SCOPE OF REQUIREMENTS PROVIDED. ENGINEER OF RECORD ACCEPTS RESPONSIBILITY FOR SAFETY AND ADEQUACY OF MANHOLE IF THE ALTERNATIVE CONFIGURATION IS USED.
2. DESIGNED ACCORDING TO ASTM C478 AND/OR ASTM C913.
3. PAYMENT FOR PRECAST MANHOLE PER SECTION 02542 "CONCRETE MANHOLES AND ACCESSORIES".
4. PRECAST BASE CONSISTS OF BASE SLAB, BASE UNIT, RISERS (AS REQUIRED), REDUCING SLAB (AS REQUIRED), AND REDUCED RISERS (AS REQUIRED).
5. MIN HEIGHT SHOWN FOR STOCK BASE UNITS. USE STOCK BASE UNITS WHENEVER PRACTICAL. SMALLER HEIGHT BASE UNITS CAN BE USED IN SPECIAL INSTALLATION CIRCUMSTANCES. WHEN NOTED ELSEWHERE IN THE PLANS. ABSOLUTE MINIMUM HEIGHT OF BASE UNITS IS 2'–6".
6. FOUNDATION/SUBGRADE TO BE DESIGNED BY ENGINEER AND MEET MINIMUM REQUIREMENTS ACCORDING TO SECTION 02542.
7. ALL STORM WATER MANHOLES ARE TO BE PRECAST CONCRETE, UNLESS OTHERWISE NOTED ELSEWHERE IN THE PLANS.
8. ECCENTRIC REDUCED RISER WITH RESPECT TO BASE IS THE PREFERRED MANHOLE CONFIGURATION CONCENTRIC REDUCED RISER WITH RESPECT TO BASE MANHOLE CONFIGURATION IS AN ALTERNATIVE DESIGN THAT WILL BE ACCEPTED BASED ON THE NEEDS OF THE CITY OF CLEAR LAKE SHORES.
9. MANHOLE SIZE SHALL CONSIDER ENGINEERING ECONOMY. THIS DETAIL IS NOT APPLICABLE TO BOX MANHOLES LARGER THAN 8–FOOT. BY 8–FOOT.
10. REFER TO STORM SEWER TYPE C PRECAST ROUND MANHOLE DETAIL (02542–01) FOR REDUCED RISER DESIGN REQUIREMENTS.

## TABLE 1

PRECAST BOX MANHOLE (PBM) MINIMUM REQUIREMENTS FOR 24 IN TO 78 IN INTERNAL DIA STORM SEWER PIPES.

| | SIZE | BACK SLAB THICKNESS | BASE UNIT OR RISER THICKNESS | REDUCED RISER DIA | REDUCING SLAB THICKNESS | TOP SLAP THICKNESS | MAX DEPTH TO TOP OF BASE SLAB | MIN HEIGHT | MAX HOLE DIA (SEE FAB NOTE 11) | MAX KO DIA (SEE FAB NOTE 11) |
|---|---|---|---|---|---|---|---|---|---|---|
| | X & Y | BS | W | ID | RS | TS | MAX DEPTH | BH MIN | MAX HOLE DIA. | MAX KO DIA. |
| | FT | IN | IN | FT* | IN | IN | FT | FT | IN | IN |
| PBM | 3X3' | 6 | 6 | N/A | N/A | 9 | 25 | 3.5 | 36 | 36 |
| | 4X4' | 6 | 6 | N/A | N/A | 9 | 25 | 4.5 | 48 | 48 |
| | 3X5' | 6 | 6 | N/A | N/A | 9 | 25 | 3.5 | 36/60 | 36/60 |
| | 4X5' | 6 | 6 | 48 IN | 9 | 9 | 25 | 4.5 | 48/60 | 48/60 |
| | 5X5' | 6 | 6 | 48 IN | 9 | 9 | 25 | 5.5 | 60 | 60 |
| | 5X6' | 9 | 8 | 48 IN | 9 | 9 | 25 | 5.5 | 60/72 | 60/72 |
| | 6X6' | 9 | 8 | 48 IN | 9 | 9 | 25 | 6.5 | 72 | 72 |
| | 8X8' | 9 | 10 | 48 IN | 12 | 9 | 25 | 8.5 | 96 | 96 |

TABLE 1 NOTES:
1. (1) ROUND MANHOLES ARE PREFERRED FOR THESE SIZES
2. (*) UNLESS OTHERWISE INDICATED.
3. TABLE IS VALID FOR UP TO 25FT OF INSTALLATION DEPTH




PIPE CONNECTION DETAIL
CONNECT PIPES WITHIN 7° OF NORMAL TO PRECAST BASE WALL. IF NECESSARY, USE PIPE ELBOW OR CURVED APPROACH ALIGNMENT TO STAY WITHIN LIMIT.

CITY OF
CLEAR LAKE SHORES
ROAD AND DRAINAGE STANDARDS

# STORM SEWER PRECAST BOX MANHOLE

(SCALE: NOT TO SCALE)

APPROVED BY:

CITY ENGINEER

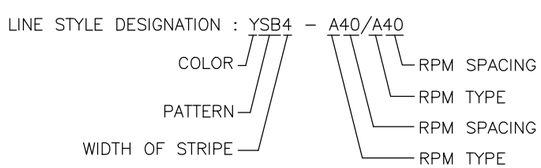
EFF DATE: NOVEMBER 2024 | DWG NO: 02542–02

## DESCRIPTION AND APPLICATION OF PAVEMENT MARKING LINES

| LINE SERIES | COLOR | DESCRIPTION | WIDTH (INCHES) | TYPICAL APPLICATIONS |
|---|---|---|---|---|
| WB | WHITE | BROKEN (10' STRIPE W/30' GAP) | 4" | LANE LINES BETWEEN TRAVEL LANES IN THE SAME DIRECTION WHERE CHANGING OF LANES IS PERMITTED. |
| WS | WHITE | SOLID | 4" | EDGE LINES TO DELINEATE THE RIGHT EDGE OF THE ROADWAY. |
| | | | 6" | LEFT EDGE OF BICYCLE LANE AND LANE LINES BETWEEN TRAVEL LANES IN THE SAME DIRECTION WHERE CHANGING OF LANES IS DISCOURAGED. |
| | | | 12" | PERPENDICULAR CROSSWALK LINES. |
| | | | 24" | STOP BARS AT INTERSECTIONS (SIGNALIZED AND UNSIGNALIZED). |
| | | | | HATCHING AT HIGH VISIBILITY CROSSWALKS. |
| | | | 12", 24" | DIAGONAL HATCHING USED IN GORES BETWEEN SAME DIRECTION OF TRAVEL LANES. |
| WG | WHITE | GUIDE (2' STRIPE W/6' GAP) | 6" | GUIDE LINES THROUGH INTERSECTIONS. |
| | | | | TAPER LINES FOR TURN LANES. |
| | | | | GUIDE LINES FOR BICYCLE LANES. |
| YS | YELLOW | SOLID | 4" | EDGE LINES TO DELINEATE THE LEFT EDGE OF A DIVIDED ROADWAY, A ONE-WAY ROAD, OR RAMP. |
| | | | 6" | BIDIRECTIONAL BICYCLE LANE PAVEMENT MARKING. |
| | | | 12", 24" | DIAGONAL HATCHING USED IN GORES BETWEEN OPPOSING DIRECTION OF TRAVEL LANES. |
| YDS | YELLOW | DOUBLE SOLID | 4" – (4") – 4" (GAP) | CENTERLINE THAT SEPARATES OPPOSING TRAVEL LANES AND DELINEATION OF MEDIAN ISLANDS. |
| YDB | YELLOW | DOUBLE BROKEN | 4" – (4") – 4" (GAP) | DEFINES THE EDGES OF CENTER REVERSIBLE LANES THAT ARE USED AS TWLTLS DURING INTERMITTENT PERIODS. |
| YB | YELLOW | BROKEN (10' STRIPE W/30' GAP) | 4" | SEPARATES TRAVEL LANES IN OPPOSITE DIRECTIONS WHERE PASSING IS PERMITTED IN BOTH DIRECTIONS OF TRAVEL. |
| YB (BIKE) | YELLOW | BROKEN (3' STRIPE W/9' GAP) | 4" | SEPARATES BICYCLE TRAVEL LANES IN OPPOSITE DIRECTIONS WHERE PASSING IS PERMITTED IN BOTH DIRECTIONS OF TRAVEL. |
| YSB | YELLOW | SOLID & BROKEN BROKEN (10' STRIPE W/30' GAP) | 4" – (4") – 4" (GAP) | SEPARATES TRAVEL LANES IN OPPOSITE DIRECTIONS WHERE PASSING IS PERMITTED IN ONE DIRECTION AND PROHIBITED IN THE OPPOSITE DIRECTION. |
| | | | | USED FOR EDGE OF TWO-WAY LEFT TURN LANES (TWLTL). |
| BICYCLE GREEN | GREEN | SOLID COLORED PAVEMENT | VARIES | PED/BIKE CROSSING |
| | | | | VEHICLE / BIKE/ CONFLICT AREA |
| YIELD LINE | WHITE | TRIANGLE | 16" x 24" | MID-BLOCK CROSSING. |

## DESCRIPTION AND APPLICATION OF REFLECTIVE RAISED PAVEMENT MARKERS (RPM)

| RRPM TYPES | COLOR | DESCRIPTION |
|---|---|---|
| C | CLEAR | APPROACH FACE THAT REFLECTS WHITE LIGHT, AND THE OTHER SIDE DOES NOT REFLECT. |
| R | CLEAR & RED | APPROACH FACE THAT REFLECTS WHITE LIGHT, AND THE OTHER SIDE REFLECTS RED LIGHT. |
| A | AMBER & AMBER | APPROACH FACE AND THE OTHER SIDE BOTH REFLECT AMBER LIGHT. |




## GENERAL PAVEMENT MARKING NOTES:

1. PRIOR TO START OF CONSTRUCTION, ALL EXISTING PAVEMENT MARKINGS WITHIN THE AREA OF CONSTRUCTION SHALL BE INVENTORIED AND DOCUMENTED JOINTLY BY THE CITY INSPECTOR AND THE CONTRACTOR. THIS DOCUMENT WILL BE JOINTLY SIGNED BY BOTH PARTIES REFLECTING ALL EXISTING PAVEMENT MARKINGS AND LANE CONFIGURATIONS WILL BE DUPLICATED AGAIN. THIS REVIEW CAN BE DONE IN CONJUNCTION WITH SIGN INVENTORY. THE CONTRACTOR IS HELD ACCOUNTABLE FOR EXISTING AND TEMPORARY CONSTRUCTION PAVEMENT MARKINGS THROUGHOUT THE PROJECT AND AT THE PROJECT'S COMPLETION.
2. ALL PAVEMENT MARKINGS SHALL CONFORM TO CITY OF CLEAR LAKE SHORES STANDARDS AND SPECIFICATIONS AND GENERAL GUIDELINES OF THE TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (TMUTCD).
3. THE PERMANENT PAVEMENT MARKINGS MAY BE MODIFIED AS DIRECTED BY THE CITY TRAFFIC ENGINEER.
4. THE DESIGN SPEED FOR THE ROAD IS: _____. THE POSTED SPEED LIMIT IS: _____.
5. ALL LANE DIMENSIONS ARE FROM CENTER OF LANE LINE, CENTER OF DOUBLE LANE LINE, FACE OF CURB, OR EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
6. THE PAVEMENT MARKING DRAWINGS ARE SCHEMATIC ONLY. THE CONTRACTOR SHALL FOLLOW ALL DIMENSIONS, DETAILS, AND STANDARDS WHEN INSTALLING PAVEMENT MARKINGS AND SYMBOLS.
7. THE FINAL LONGITUDINAL STRIPINGS SHALL BE 60 MIL (0.060") THICK HOT-SPRAYED THERMOPLASTIC PLACED OVER THE TEMPORARY STRIPING WITHIN 14 TO 30 CALENDAR DAYS AFTER COMPLETION OF THE FINAL PAVEMENT SURFACE, OR AS DIRECTED BY THE CITY TRAFFIC ENGINEER. ALL OTHER PAVEMENT MARKINGS SHALL BE APPLIED AT THE SAME TIME. TEMPORARY STRIPING SHALL BE WATER BASED PAINT.
8. ALL FINAL TRANSVERSE MARKINGS SHALL BE 90 MIL (0.090") HOT-SPRAYED THERMOPLASTIC. ALL PAVEMENT ARROWS AND LEGENDS SHALL ALSO BE 90 MIL (0.090") HOT-SPRAYED THERMOPLASTIC. PREFORMED THERMOPLASTIC APPLICATIONS MAY BE USED IF ONLY APPROVED BY THE CITY TRAFFIC ENGINEER.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LAYOUT AND INSTALLATION OF PAVEMENT MARKINGS OF FINAL SURFACE COURSE FOLLOWING CONTROL POINTS THAT HAVE BEEN SET NO MORE THAN 50 FEET APART ALONG THE LINES TO BE IMPLEMENTED. IN TANGENT SECTIONS OF A ROAD WHERE THE PAVEMENT MARKING PATTERN DOES NOT CHANGE, CONTROL POINTS CAN BE SET AT 200 FEET SPACING. THE LAYOUT AND INSPECTION OF ALL PAVEMENT MARKINGS SHALL BE APPROVED BY CITY OF HOUSTON REPRESENTATIVE PRIOR TO THE APPLICATION OF MATERIALS.
10. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE FINAL SURFACE COURSE IS PLACED SO THAT THE STRIPING IS OFFSET NO MORE THAN ONE FOOT CLEAR OF THE CONSTRUCTION JOINT, UNLESS OTHERWISE DIRECTED BY THE CITY TRAFFIC ENGINEER.
11. ALL RAISED PAVEMENT MARKERS (RPMS) SHALL BE INSTALLED SO THAT THE REFLECTIVE FACE OF EACH MARKER IS FACING THE DIRECTION OF TRAFFIC AND IS PERPENDICULAR TO THE DIRECTION OF TRAFFIC FLOW. TYPE C PAVEMENT MARKERS SHALL BE INSTALLED SO THAT THE CLEAR FACE OF EACH MARKER IS FACING THE APPROACHING TRAFFIC FLOW AND PERPENDICULAR TO THE DIRECTION OF TRAFFIC FLOW.
12. ALL REMOVAL OF EXISTING PAVEMENT MARKINGS SHALL BE ACCOMPLISHED IN ACCORDANCE TO CITY OF CLEAR LAKE SHORES STANDARD SPECIFICATION 02585. APPLYING OVER EXISTING PAVEMENT MARKINGS DOES NOT CONSTITUTE AS APPROVED OBLITERATION METHOD.
13. THE ENGINEER OF RECORD SHALL BE REQUIRED TO PRODUCE AS-BUILT OF PAVEMENT MARKING PLANS WITHIN 30 DAYS AFTER COMPLETION OF PAVEMENT MARKING IMPLEMENTATION.
14. BLUE RPMS MAY BE PLACED ADJACENT TO FIRE HYDRANTS WITH THE APPROVAL OF THE CITY TRAFFIC ENGINEER.
15. FOR ALL CONSTRUCTION, ALL PAVEMENT MARKINGS AND SIGNING SHALL BE INSTALLED AND SHALL BE PAID BY THE PROJECT OWNER/DEVELOPER.
16. FINAL INSPECTION AND ACCEPTANCE OF PAVEMENT MARKINGS SHALL BE PERFORMED BY TRANSPORTATION & DRAINAGE OPERATION REPRESENTATIVE.

CITY OF
CLEAR LAKE SHORES
ROAD AND DRAINAGE STANDARDS

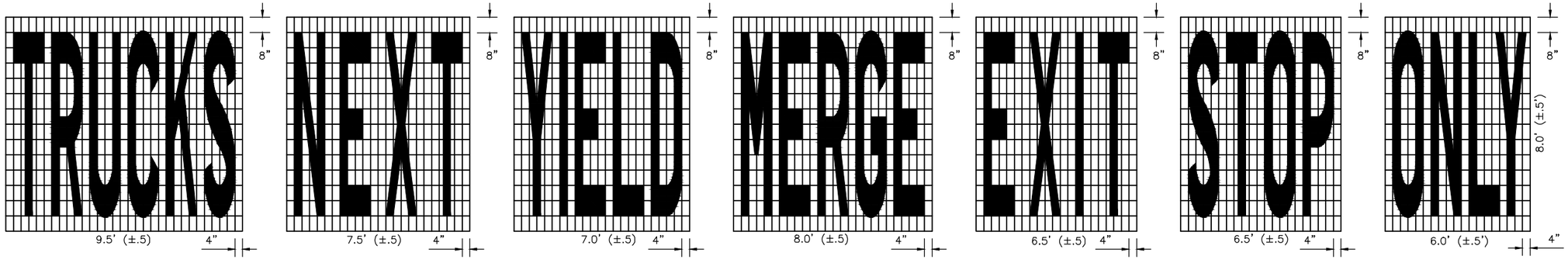
# PAVEMENT MARKING GENERAL NOTES AND LEGENDS

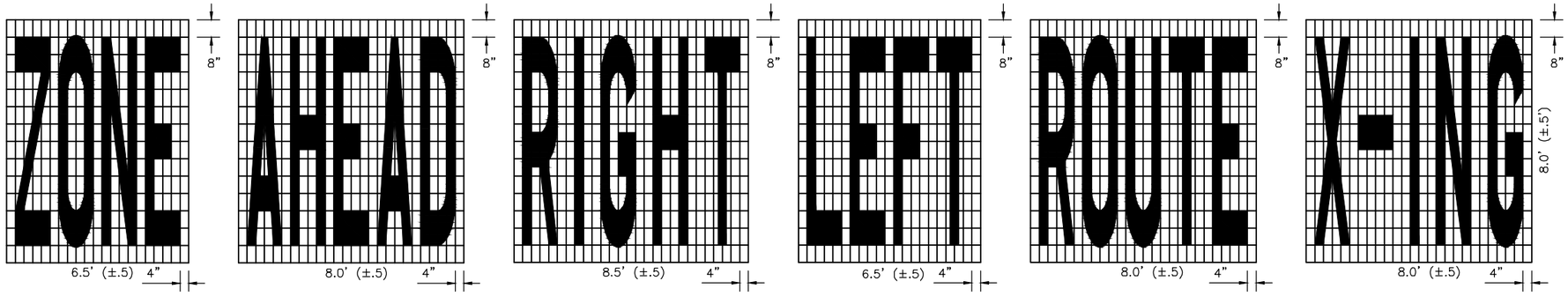
(SCALE: NOT TO SCALE)

APPROVED BY:

CITY ENGINEER

EFF DATE: NOVEMBER 2024 | DWG NO: 02585-01




CITY OF
CLEAR LAKE SHORES
ROAD AND DRAINAGE STANDARDS

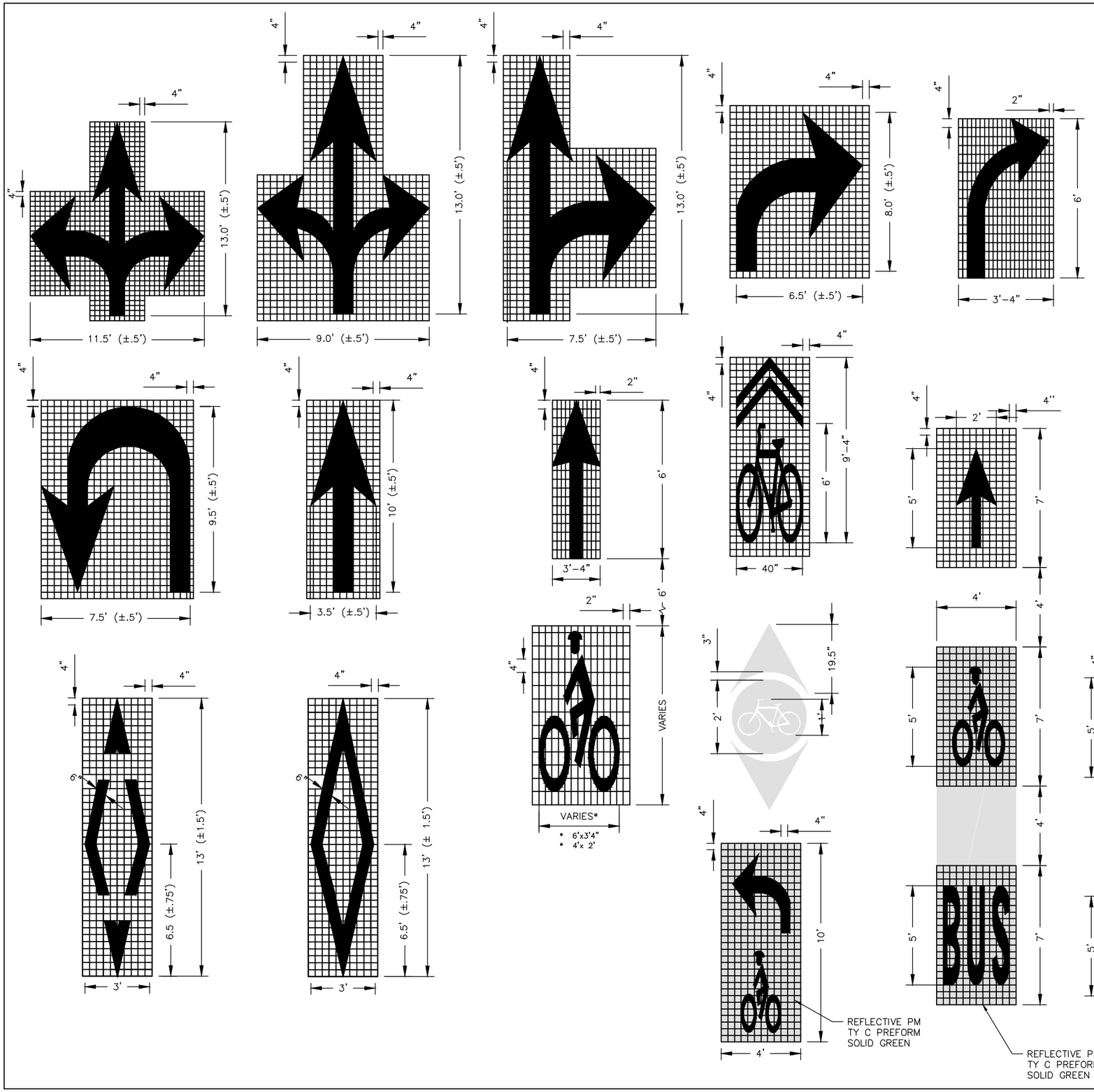
STANDARD PAVEMENT
MARKING – WORDS

(SCALE: NOT TO SCALE)

APPROVED BY:

CITY ENGINEER

EFF DATE: NOVEMBER 2024 | DWG NO: 02585-02




## NOTES FOR PAVEMENT MARKINGS "SYMBOLS" AND "ARROWS":

1. MINIMUM 8 FOOT WHITE MARKINGS SHALL BE USED, UNLESS OTHERWISE NOTED. IF MESSAGE CONSISTS OF MORE THAN ONE WORD, IT SHOULD BE PLACED WITH FIRST WORD NEAREST THE DRIVER.
2. THESE DETAILS ARE STANDARD SIZE FOR NORMAL INSTALLATION; SIZES MAY BE REDUCED APPROXIMATELY ONE–THIRD DEPENDING ON CONDITIONS. SPECIAL PERMISSION NEEDED BY CITY TRAFFIC ENGINEER FOR REDUCTION BELOW ONE–THIRD OF STANDARD SIZES.
3. THE LONGITUDINAL SPACE BETWEEN MARKINGS SHOULD BE 30 FEET, OR AS INDICATED ON THE PLANS.
4. MARKINGS CONSIDERED APPROPRIATE FOR USE WHEN WARRANTED INCLUDE THE FOLLOWING:

   A. REGULATOR
      STOP
      RIGHT (LEFT) TURN ONLY, SYMBOL ARROWS.

   B. WARNING
      STOP AHEAD
      SIGNAL AHEAD
      SCHOOL
      SCHOOL X–ING
      PED X–ING
      R X R (SEE SHEET 02760–08 DETAILS
      OTHER WORDS OR SYMBOLS MAY BE NECESSARY UNDER CERTAIN CONDITIONS. SPECIAL PERMISSION NEEDED BY CITY TRAFFIC ENGINEER FOR SPECIAL CONDITIONS.

5. UNCONTROLLED USE OF PAVEMENT MARKINGS CAN RESULT IN DRIVER CONFUSION. WORD AND SYMBOL MARKINGS SHOULD BE NO MORE THAN THREE LINES.
6. THE WORD "STOP" SHALL NOT BE USED ON THE PAVEMENT UNLESS ACCOMPANIED BY A STOP LINE AND STOP SIGN. THE WORD "STOP" SHALL NOT BE PLACED ON THE PAVEMENT IN ADVANCE TO A STOP LINE, UNLESS EVERY VEHICLE IS REQUIRED TO STOP AT ALL TIMES (ALL–WAY STOP).
7. PAVEMENT MARKINGS SHOULD GENERALLY BE NO MORE THAN ONE LANE IN WIDTH, WITH SCHOOL MESSAGES BEING THE EXCEPTION. FOR DETAILS OF SCHOOL AND SCHOOL CROSSING PAVEMENT MARKINGS, REFER TO PART VII OF THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".
8. SPACING BETWEEN STANDARD SIZE LETTERS SHOULD BE 4 INCHES (MIN). THE WIDTH OF NON–STANDARD SIZE LETTERS MAY VARY DEPENDING ON THE WIDTH OF THE TRAVEL LANES. APPROVAL BY CITY TRAFFIC ENGINEER. SPECIAL PERMISSION NEEDED FOR NON–STANDARD SIZE "LETTER" AND/OR "ARROWS".
9. LANE–USE ARROW MARKINGS MAY BE USED TO CONVEY EITHER GUIDANCE OR MANDATORY MESSAGES. SINGLE TURN ARROWS USED TO CONVEY A MANDATORY MOVEMENT MUST BE ACCOMPANIED STANDARD SIGNS AND THE PAVEMENT MARKING WORD "ONLY".
10. PAVEMENT MARKINGS ARE TO BE LOCATED AS SPECIFIED IN THE DESIGN PLANS.

CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

# STANDARD PAVEMENT MARKING – SYMBOLS

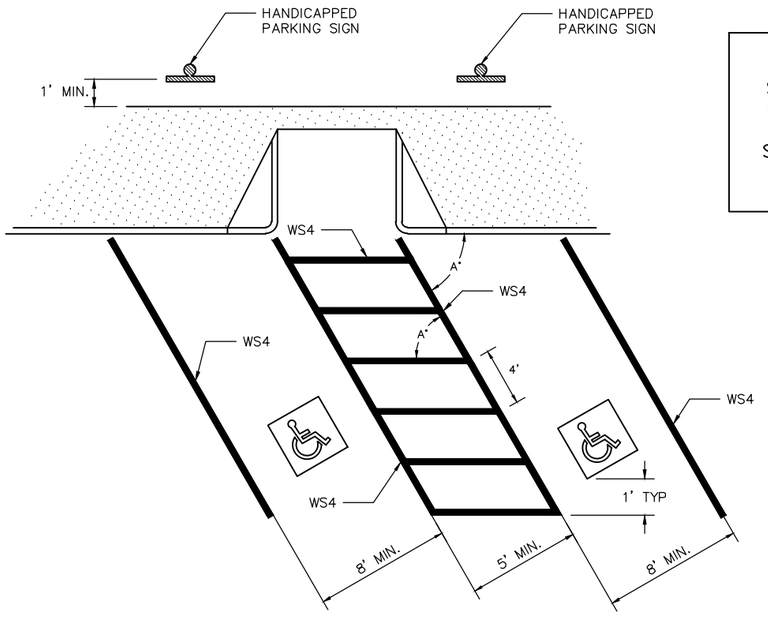
(SCALE: NOT TO SCALE)

APPROVED BY:

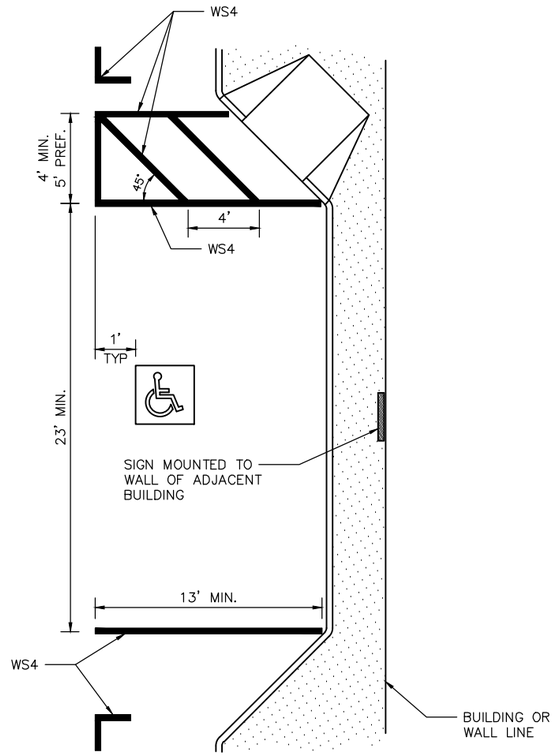
CITY ENGINEER

EFF DATE: NOVEMBER 2024 | DWG NO: 02585-03

# TYPICAL ACCESSIBLE PARKING SPACE DIMENSIONS



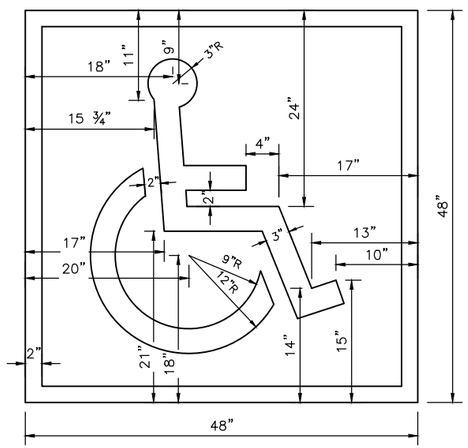

RAMP DETAILS ARE AS SHOWN ELSEWHERE IN THE PLANS. REFER TO CITY OF CLEAR LAKE SHORES STANDARDS ON WHEELCHAIR RAMP CRITERIA.




## NOTES:

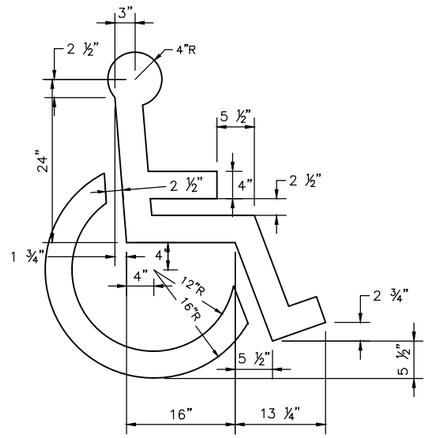
1. ALL PARKING SPACE LIMIT LINES SHALL BE 4", WS4.
2. AISLE MARKINGS SHOWN ARE EXAMPLES ONLY. OTHER METHODS TO INDICATE A NO PARKING AREA ARE ACCEPTABLE. AISLE MARKINGS SHALL BE WHITE.
3. DIMENSIONS OF LIMIT LINES, AISLE MARKINGS, AND SYMBOL (WITH OR WITHOUT BACKGROUND) MAY VARY ± 10%.
4. PAVEMENT MARKING SYMBOLS (WITH BACKGROUND):
   A) ARE REQUIRED UNLESS STATED ELSEWHERE IN THE PLANS,
   B) SHOULD BE PLACED TOWARD THE FAR END OF THE PARKING SPACES SO AS TO BE VISIBLE TO MOTORISTS IN THE TRAVEL LANE,
   C) MAY BE PAINTED OR PREFABRICATED MATERIAL, AND
   D) SHALL BE 30"x 30" MINIMUM.
5. WITH APPROVAL OF THE CITY TRAFFIC ENGINEER, PREFABRICATED PAVEMENT MARKING SYMBOLS WITH BACKGROUND OF OTHER DIMENSIONS EXCEEDING THE 30"x 30" MINIMUM MAY BE USED. ALTERNATIVE DESIGNS SHALL INCLUDE A PROPORTION SIZED SYMBOL OF ACCESSIBILITY, AND SHALL CONFORM TO THE ILLUSTRATED COLORS FOR BACKGROUND, SYMBOL AND BORDER.
6. ALL SLOPE IN AND AROUND EXPECTED WHEELCHAIR PATH SHALL NOT EXCEED ADA REQUIREMENTS FOR WHEELCHAIR RAMPS.
7. NOTE THAT ANGLED PARKING ON PUBLIC ROADWAYS REQUIRE CITY COUNCIL APPROVAL BEFORE IMPLEMENTATION.

## HANDICAPPED PAVEMENT MARKING SYMBOLS



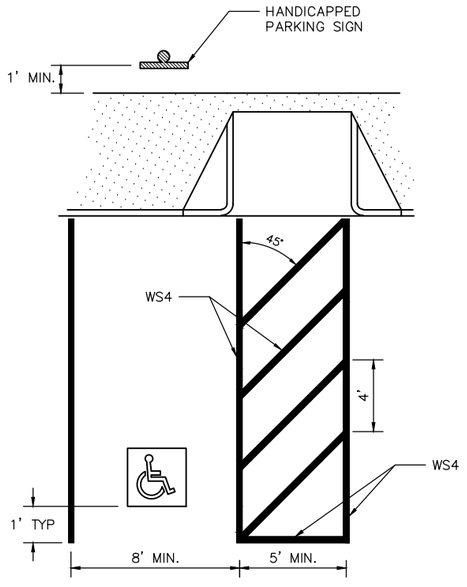

WITH BACKGROUND

SYMBOL & BORDER: WHITE
BACKGROUND: BLUE




SYMBOL ONLY

SYMBOL: BLUE OR WHITE




CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

PAVEMENT MARKINGS FOR ACCESSIBLE PARKING

(SCALE: NOT TO SCALE)

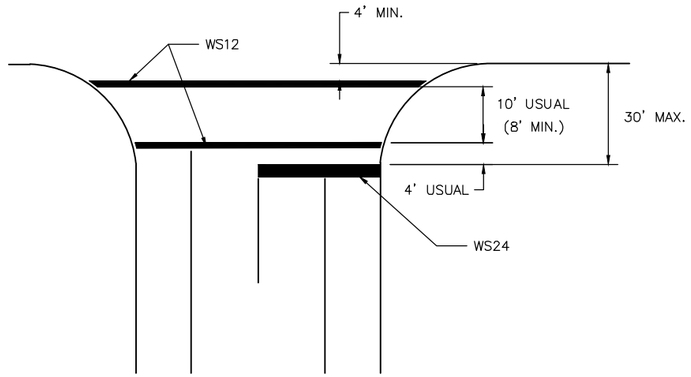
APPROVED BY:

CITY ENGINEER

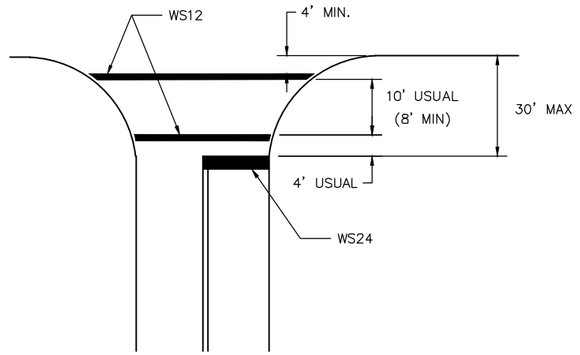
EFF DATE: NOVEMBER 2024 | DWG NO: 02585-04

## NOTES:

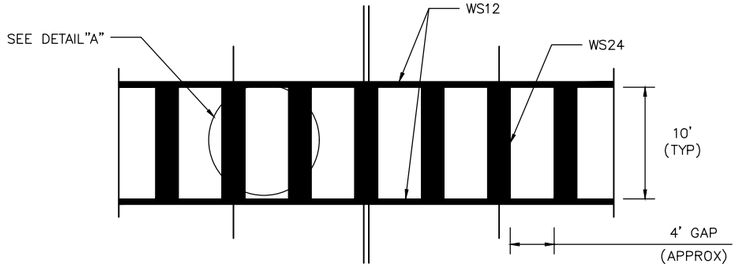
1. CROSSWALKS AND STOP LINES SHALL BE WHITE.
2. "D" IS EQUAL TO ONE HALF THE WIDTH OF TRAVEL LANE.




TWO LANES WITH SHOULDERS



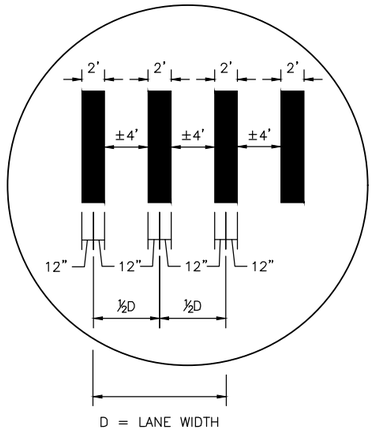

TWO LANES




TYPICALLY USED AT SIGNALIZED AND NON-SIGNALIZED CROSSINGS ON COLLECTOR AND ARTERIAL ROADWAYS AND AT LOCATIONS REQUIRING EXTRA EMPHASIS.

HIGH VISIBILITY CROSSWALK DETAIL

DETAIL "A"




CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

# TYPICAL CROSSWALK DETAILS

(SCALE: NOT TO SCALE)

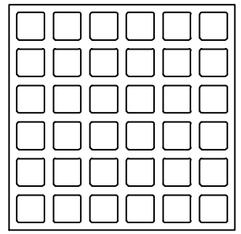
APPROVED BY:

CITY ENGINEER

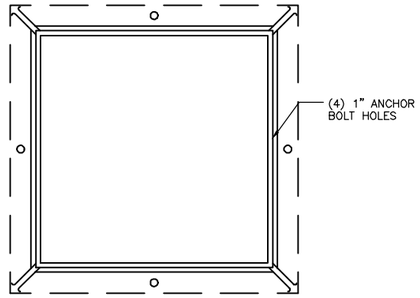
EFF DATE: NOVEMBER 2024 | DWG NO: 02585-05

## NOTES:

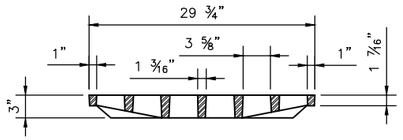
1. APPROXIMATE WEIGHT.
   GRATE – 190 LBS (66KGS)
   FRAME – 235 LBS (107KGS)
   UNIT – 425 LBS (193KGS)
2. MATERIALS – GRAY IRON ASTM A48 CL35B
3. CASTING TO MEET M306 PROOF LOAD SPECIFICATION
4. EJIW V–4880 ASY OR APPROVED EQUAL



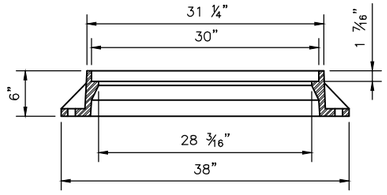
GRATE PLAN VIEW




FRAME PLAN VIEW

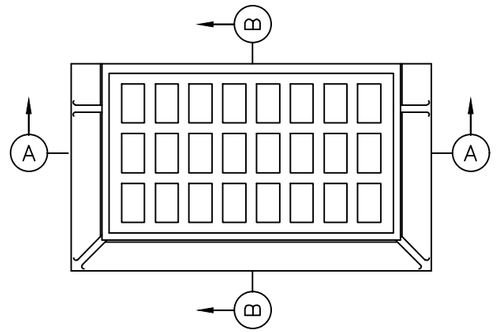


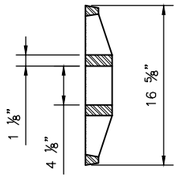

GRATE SECTION



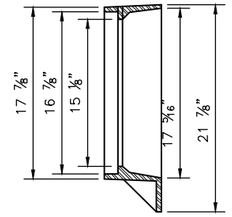

FRAME SECTION

## STORM SEWER TYPE "A" INLET GRATE AND FRAME

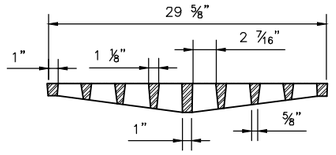


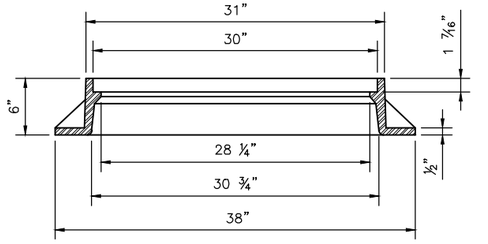

GRATE SECTION B–B




FRAME SECTION B–B

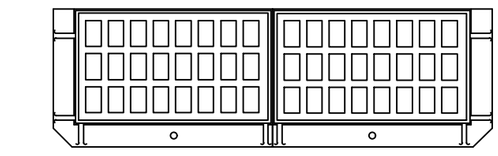


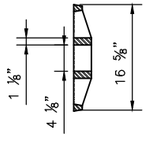

GRATE SECTION A–A



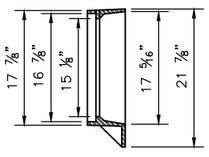

FRAME SECTION A–A

## STORM SEWER TYPE "B" INLET GRATE AND FRAME

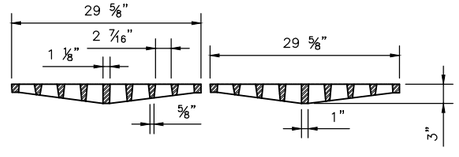




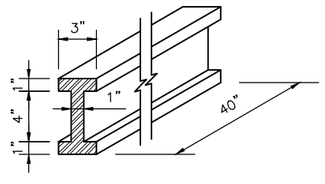

GRATE SECTION



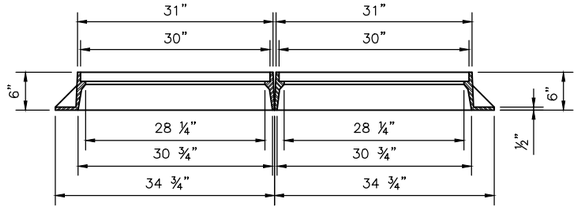

FRAME SECTION




GRATE SECTION




I–BEAM SECTION




FRAME SECTION

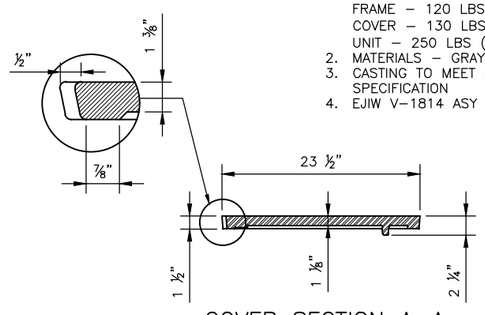
NOTES:

1. APPROXIMATE WEIGHT.
   GRATE – 115 LBS (52KGS)
   FRAME – 120 LBS (55KGS)
   I BEAM – 107 LBS (49KGS)
   UNIT – 577 LBS (262KGS)
2. MATERIALS – GRAY IRON ASTM A48 CL35B
3. CASTING TO MEET M306 PROOF LOAD SPECIFICATION
4. EJIW V–4243 ASY OR APPROVED EQUAL

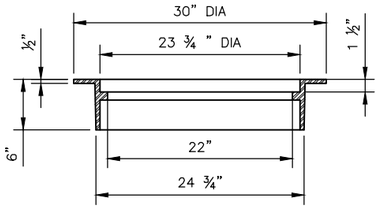
## STORM SEWER TYPE "B–B" INLET GRATE AND FRAME

NOTES:

1. APPROXIMATE WEIGHT.
   FRAME – 120 LBS (55KGS)
   COVER – 130 LBS (59KGS)
   UNIT – 250 LBS (114KGS)
2. MATERIALS – GRAY IRON ASTM A48 CL35B
3. CASTING TO MEET M306 PROOF LOAD SPECIFICATION
4. EJIW V–1814 ASY OR APPROVED EQUAL

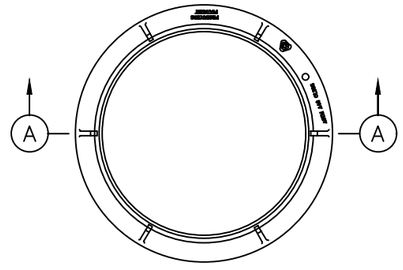



COVER SECTION A–A




FRAME SECTION A–A

## STORM SEWER TYPE "C" INLET FRAME AND COVER




PLAN VIEW
FRAME AND COVER

CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

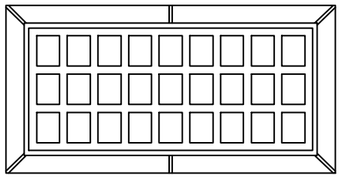
# FRAMES, GRATES, RINGS AND COVERS

(SCALE: NOT TO SCALE)

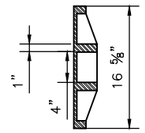
APPROVED BY:

CITY ENGINEER

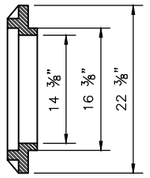
EFF DATE: NOVEMBER 2024 | DWG NO: 02603–01



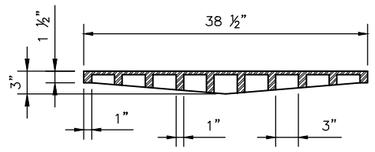
PLAN VIEW
FRAME AND COVER



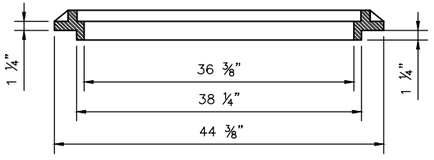

GRATE SECTION




FRAME SECTION

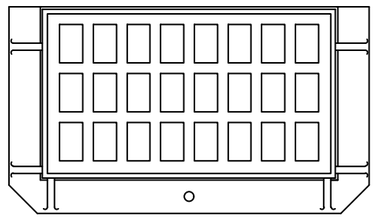


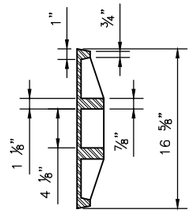

GRATE SECTION



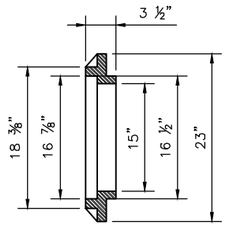

FRAME SECTION

STORM SEWER TYPE "D" INLET GRATE AND FRAME

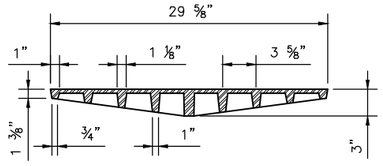




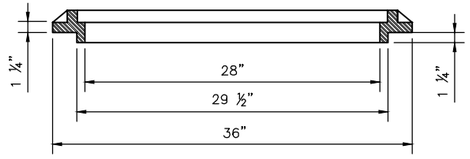

GRATE SECTION




FRAME SECTION

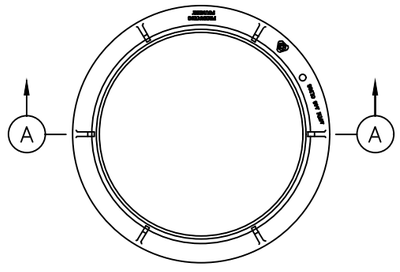



GRATE SECTION




FRAME SECTION

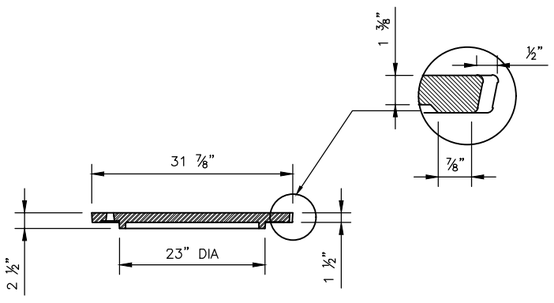
STORM SEWER TYPE "D–1" INLET GRATE AND FRAME



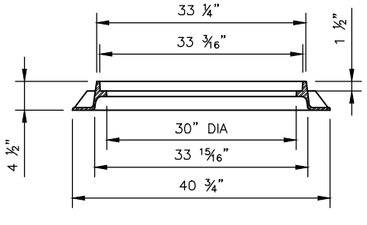

PLAN VIEW
FRAME AND COVER

NOTES:

1. APPROXIMATE WEIGHT.
   FRAME – 170 LBS (77KGS)
   COVER – 270 LBS (123KGS)
   UNIT – 440 LBS (200KGS)
2. MATERIALS – GRAY IRON ASTM A48 CL35B
3. CASTING TO MEET M306 PROOF LOAD SPECIFICATION
4. EJIW V–1420 ASY OR APPROVED EQUAL

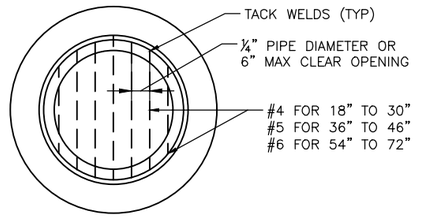



COVER SECTION A–A




FRAME SECTION A–A

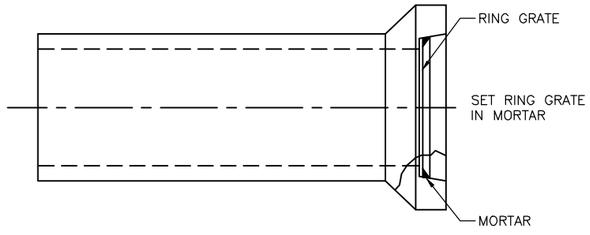
STORM SEWER MANHOLE FRAME AND COVER




END VIEW

NOTES:

1. GALVANIZED GRATE AFTER FABRICATION
2. MATERIALS – REINFORCED STEEL ASTM A615
3. WELDS CONNECTING THE BARS SHALL CONFORM TO AWS D12.1




SIDE VIEW

STORM SEWER RING GRATE FOR OPEN END
OF 18" TO 72" RCP STUBS TO DITCH

CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

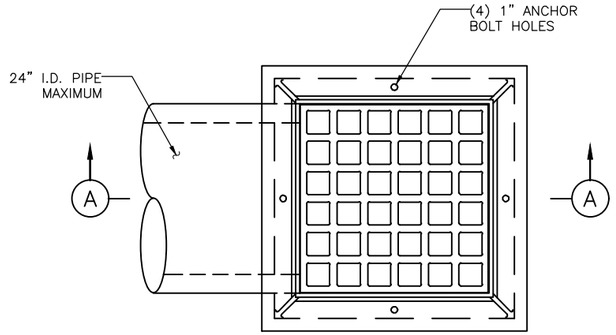
FRAMES, GRATES, RINGS
AND COVERS

(SCALE: NOT TO SCALE)

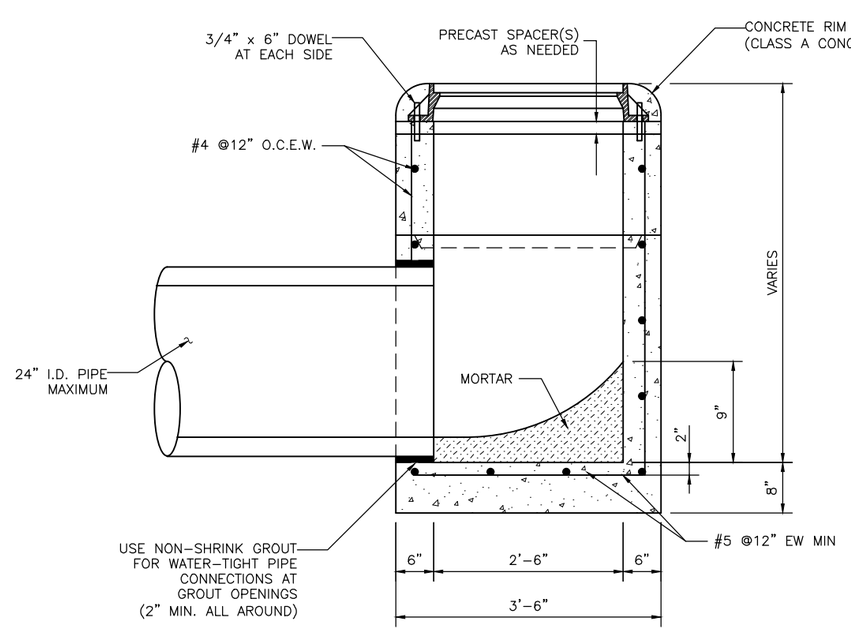
APPROVED BY:

CITY ENGINEER

EFF DATE: NOVEMBER 2024 | DWG NO: 02603–02




PLAN VIEW




SECTION A–A

## NOTES:

1. CONSTRUCTION AND MATERIALS IN ACCORDANCE WITH CITY OF CLEAR LAKE SHORES STANDARD SPECIFICATION 02631.
2. CONCRETE FOR INLET: MINIMUM 4,000 PSI IN 28 DAYS.
3. PRECAST INLET DESIGN SHALL MEET OR EXCEED ASTM C913 REQUIREMENTS.
4. 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 DRAWING, SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF TEXAS.
5. SHOP DRAWINGS SHALL BE REQUIRED FOR PRECAST CONSTRUCTION OF INLET.
6. KNOCK–OUTS ARE NOT PERMISSIBLE FOR PRECAST CONSTRUCTION OF INLET.

CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

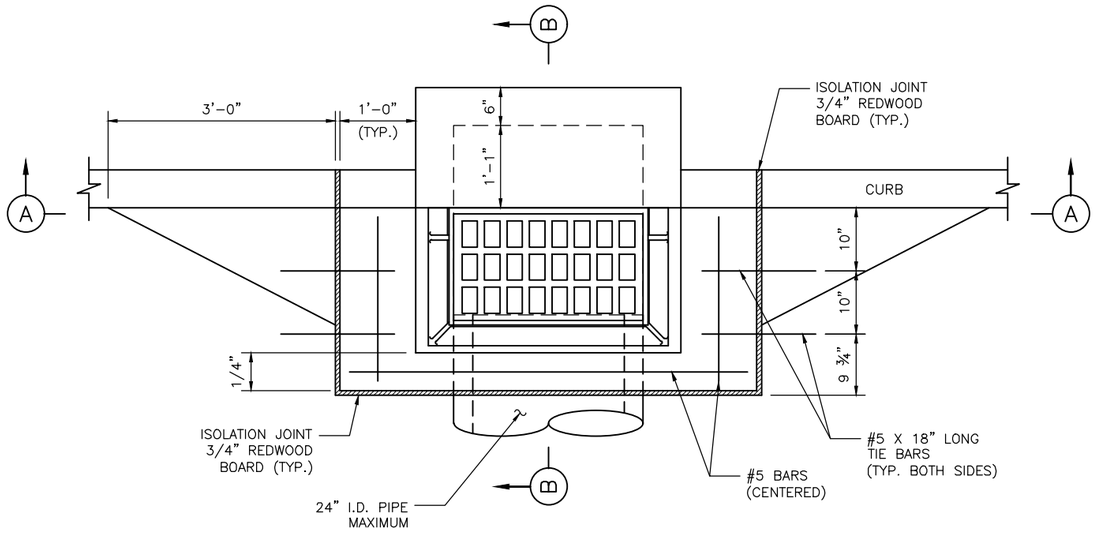
# STORM SEWER TYPE A INLET

(SCALE: NOT TO SCALE)

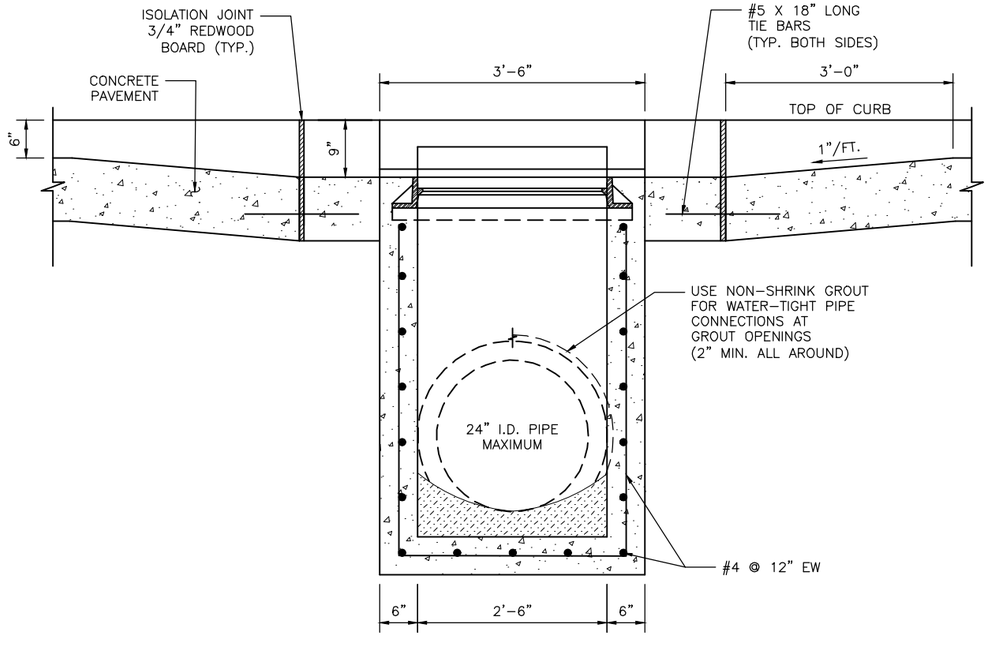
APPROVED BY:

CITY ENGINEER

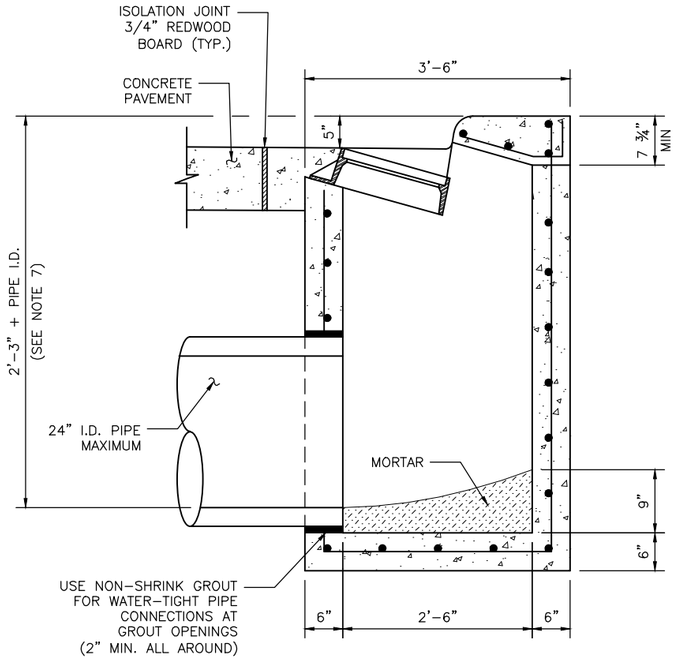
EFF DATE: NOVEMBER 2024 | DWG NO: 02631–01




PLAN VIEW




SECTION A–A




SECTION B–B

## NOTES:

1. CONSTRUCTION AND MATERIALS IN ACCORDANCE WITH CITY OF CLEAR LAKE SHORES STANDARD SPECIFICATION 02631.
2. CONCRETE FOR INLET: MINIMUM 4,000 PSI IN 28 DAYS.
3. PRECAST INLET DESIGN SHALL MEET OR EXCEED ASTM C913 REQUIREMENTS.
4. 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 DRAWING, SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF TEXAS.
5. SHOP DRAWINGS SHALL BE REQUIRED FOR PRECAST CONSTRUCTION OF INLET.
6. KNOCK–OUTS ARE NOT PERMISSIBLE FOR PRECAST CONSTRUCTION OF INLET.
7. 2'–3" + PIPE I.D. OR AS SPECIFIED BY THE ENGINEER OF RECORD.

CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

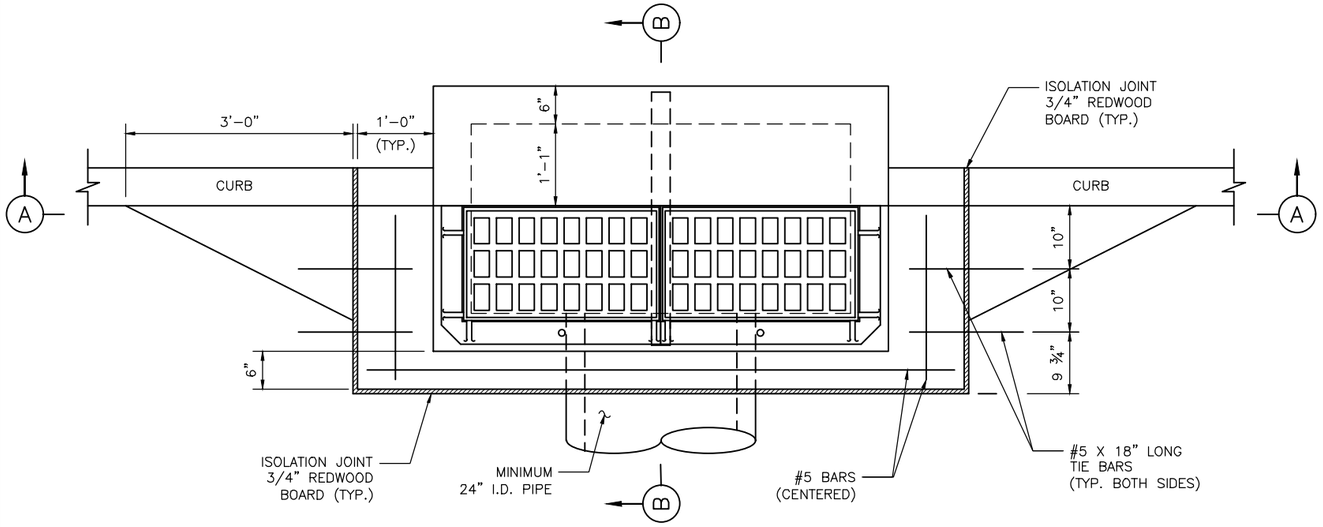
# STORM SEWER TYPE B INLET

(SCALE: NOT TO SCALE)

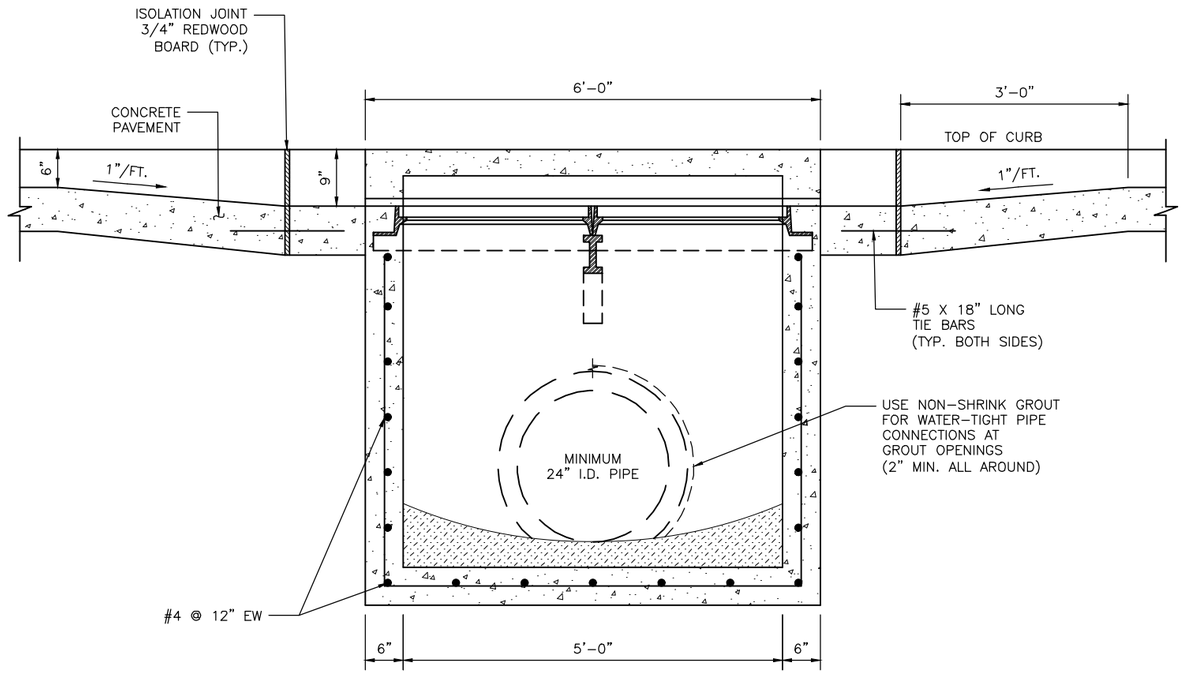
APPROVED BY:

CITY ENGINEER

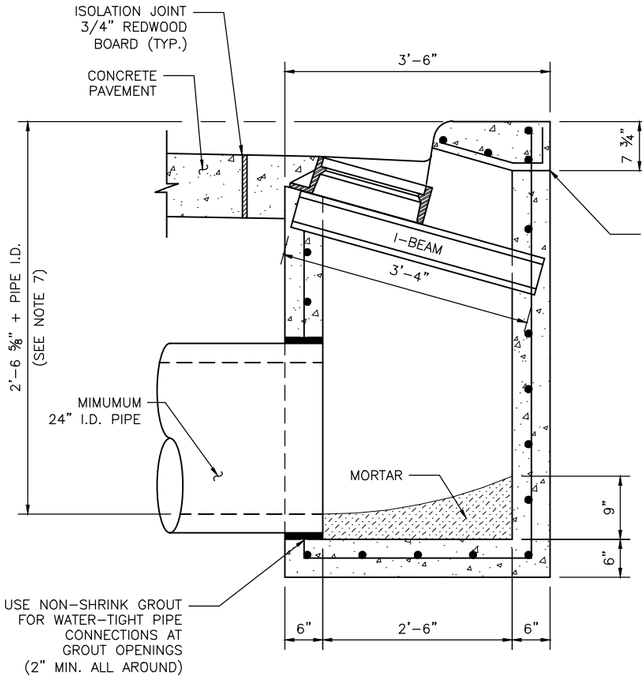
EFF DATE: NOVEMBER 2024 | DWG NO: 02631–02



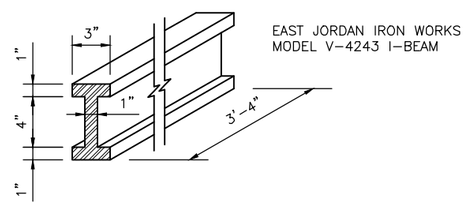

PLAN VIEW




SECTION A–A




SECTION B–B




I–BEAM SECTION

## NOTES:

1. CONSTRUCTION AND MATERIALS IN ACCORDANCE WITH CITY OF CLEAR LAKE SHORES STANDARD SPECIFICATION 02631.
2. CONCRETE FOR INLET: MINIMUM 4,000 PSI IN 28 DAYS.
3. PRECAST INLET DESIGN SHALL MEET OR EXCEED ASTM C913 REQUIREMENTS.
4. 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 DRAWING, SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF TEXAS.
5. SHOP DRAWINGS SHALL BE REQUIRED FOR PRECAST CONSTRUCTION OF INLET.
6. KNOCK–OUTS ARE NOT PERMISSIBLE FOR PRECAST CONSTRUCTION OF INLET.
7. 2'–6 ⅝" + PIPE I.D. OR AS SPECIFIED BY THE ENGINEER OF RECORD.

CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

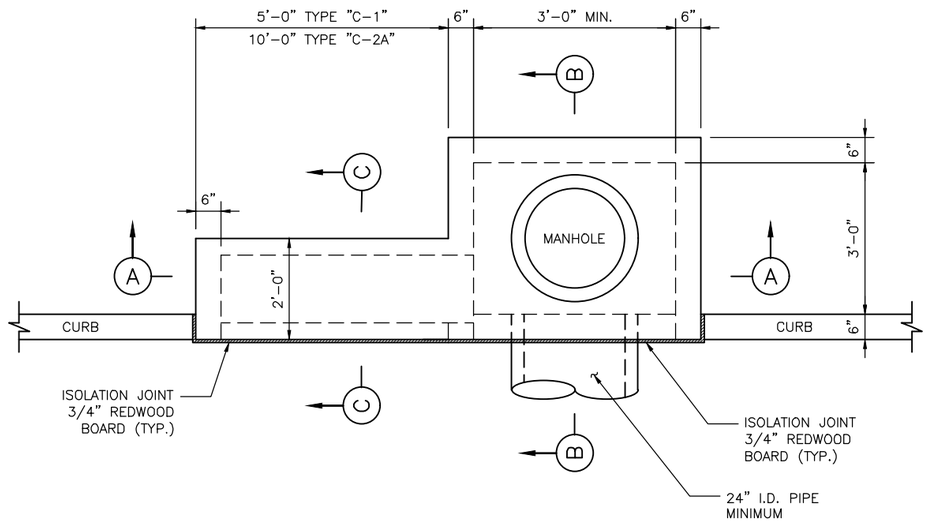
# STORM SEWER TYPE B–B INLET

(SCALE: NOT TO SCALE)

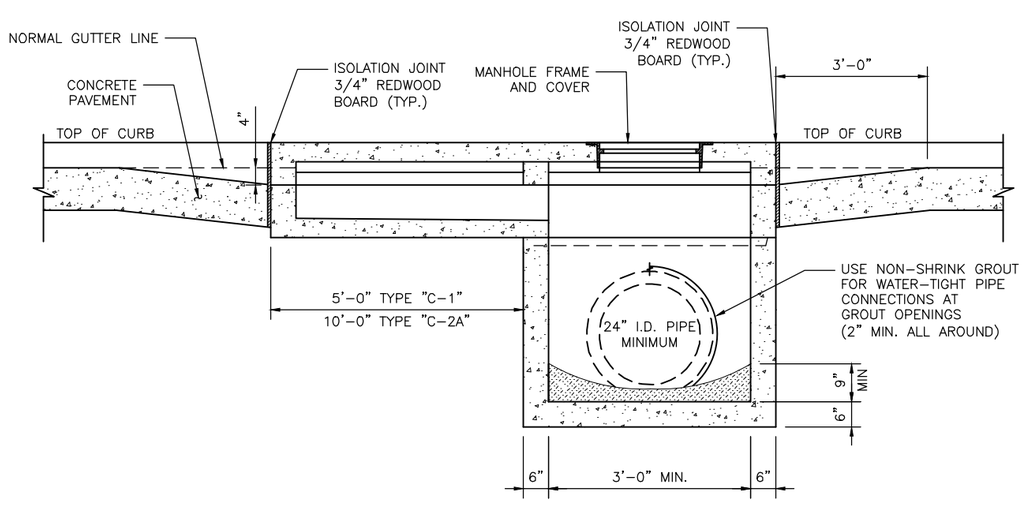
APPROVED BY:

CITY ENGINEER

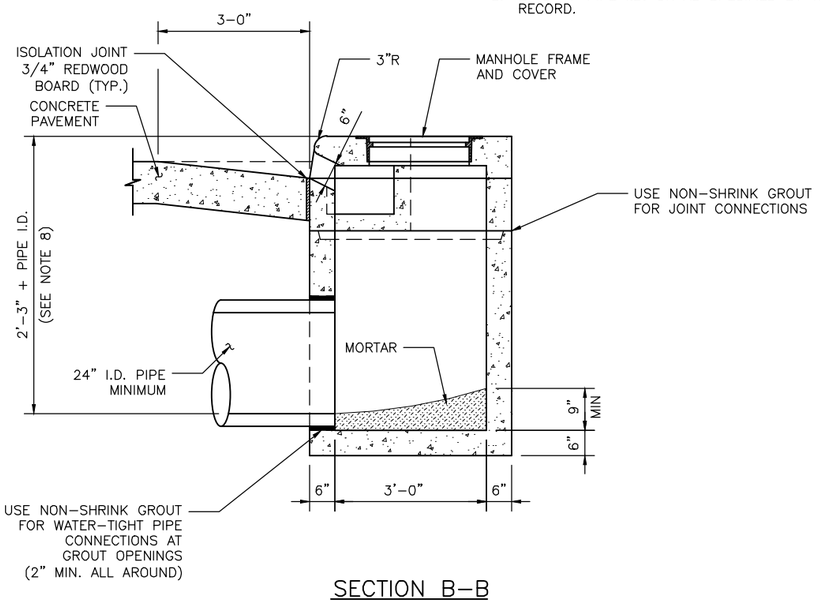
EFF DATE: NOVEMBER 2024 | DWG NO: 02631–03



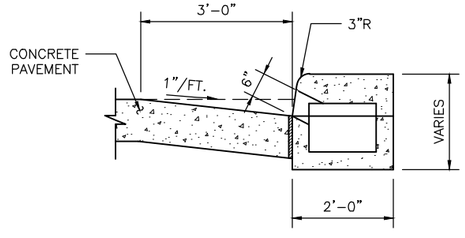

PLAN VIEW




SECTION A–A INLET




SECTION B–B




SECTION C–C

## NOTES:

1. CONSTRUCTION AND MATERIALS IN ACCORDANCE WITH CITY OF CLEAR LAKE SHORES STANDARD SPECIFICATION 02631.
2. CONCRETE FOR INLET: MINIMUM 4,000 PSI IN 28 DAYS.
3. PRECAST INLET DESIGN SHALL MEET OR EXCEED ASTM C913 REQUIREMENTS.
4. 6–IN WALLS TO BE BUILT WITH REINFORCED CONCRETE.
5. 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 DRAWING, SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF TEXAS.
6. SHOP DRAWINGS SHALL BE REQUIRED FOR PRECAST CONSTRUCTION OF INLET.
7. KNOCK–OUTS ARE NOT PERMISSIBLE FOR PRECAST CONSTRUCTION OF INLET.
8. 2'–3" + PIPE I.D. OR AS SPECIFIED BY THE ENGINEER OF RECORD.

## INLET NOTES:

TYPE "C": INLET ONLY – NO EXTENSION
TYPE "C–1": INLET WITH ONE EXTENSION (5'–0" LONG)
TYPE "C–2": INLET WITH ONE EXTENSION (5'–0" LONG) ON EACH SIDE
TYPE "C–2A": INLET WITH ONE DOUBLE EXTENSION (10'–0" LONG) ON ONE SIDE
* FOR TYPE "C–2A" INLETS, PROVIDE A CENTER 6"x6" COLUMN IN THE CURB LINE BETWEEN ALL EXTENSIONS.

CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

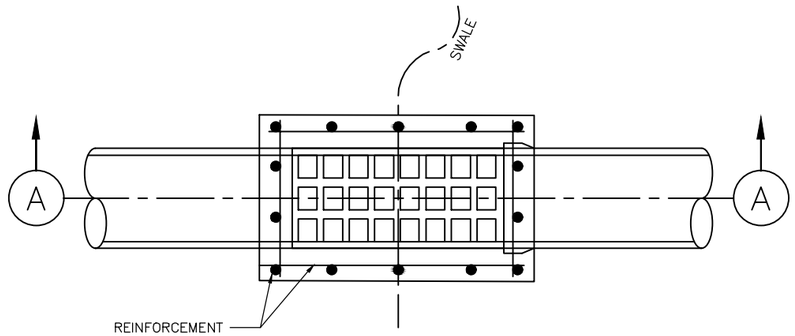
# STORM SEWER TYPE C INLET

(SCALE: NOT TO SCALE)

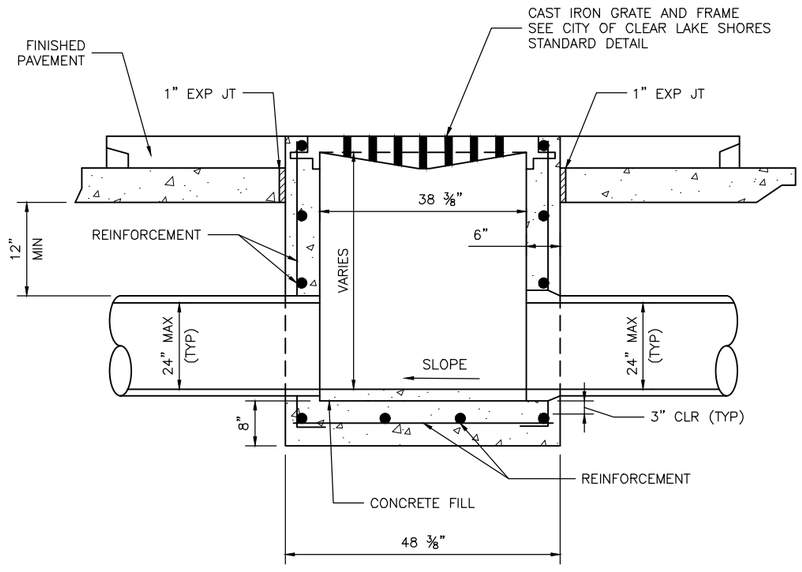
APPROVED BY:

CITY ENGINEER

EFF DATE: NOVEMBER 2024 | DWG NO: 02631–04

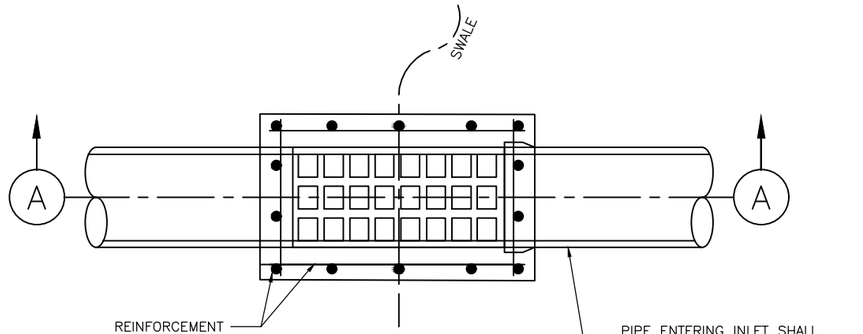



PLAN

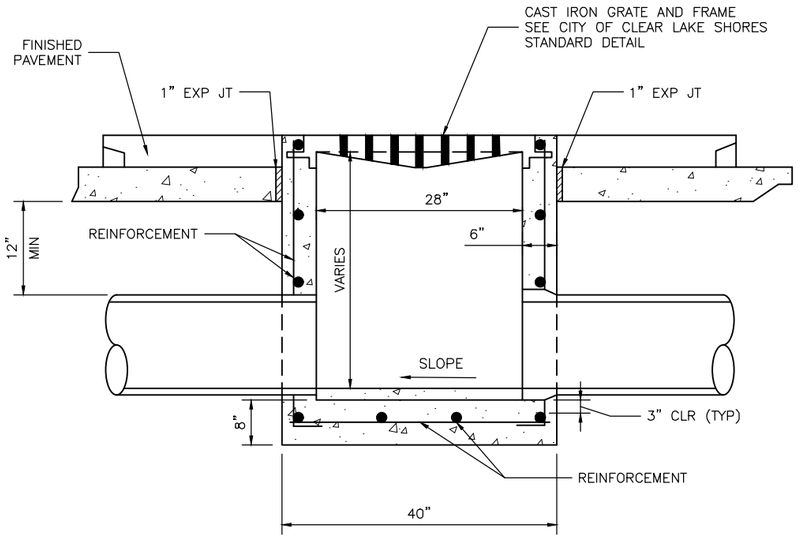



SECTION A–A

STORM SEWER TYPE "D" INLET




PLAN




SECTION A–A

STORM SEWER TYPE "D–1" INLET

CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

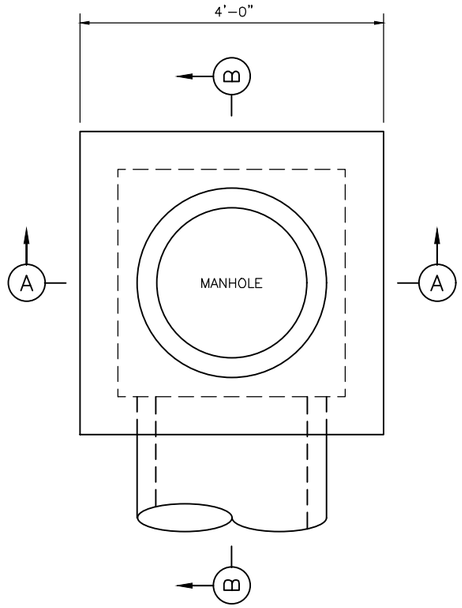
STORM SEWER TYPE D INLET

(SCALE: NOT TO SCALE)

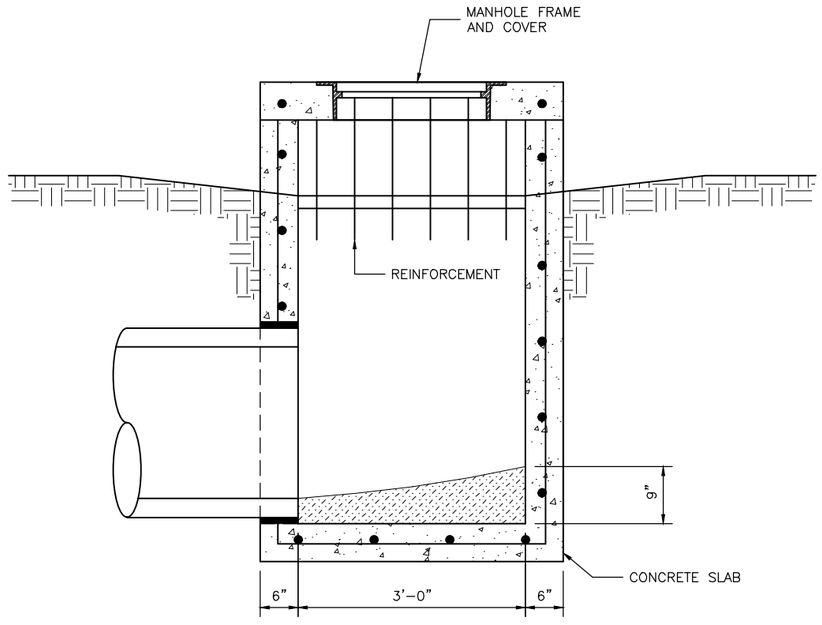
APPROVED BY:

CITY ENGINEER

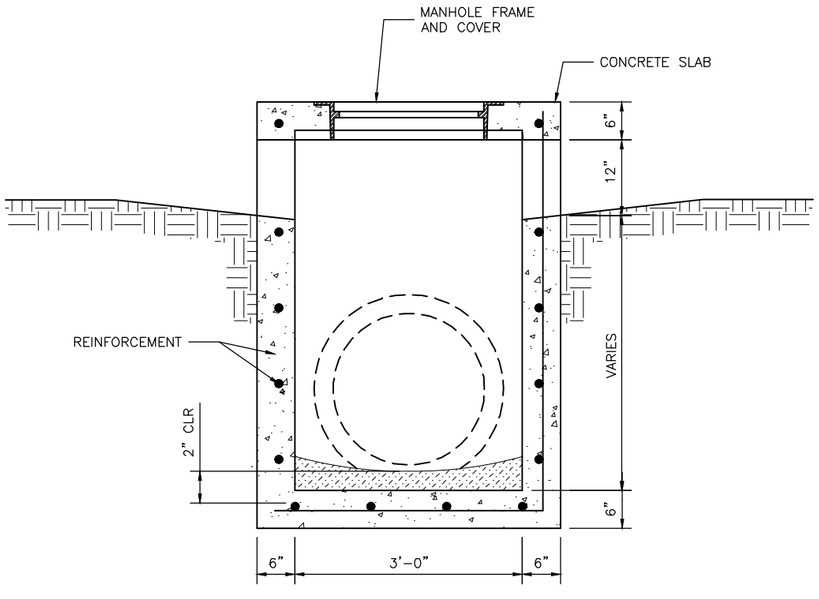
EFF DATE: NOVEMBER 2024 | DWG NO: 02631–05




PLAN VIEW




SECTION B–B




SECTION A–A INLET

## NOTES:

1. CONSTRUCTION AND MATERIALS IN ACCORDANCE WITH CITY OF CLEAR LAKE SHORES STANDARD SPECIFICATION 02631.
2. CONCRETE FOR INLET: MINIMUM 4,000 PSI IN 28 DAYS.
3. PRECAST INLET DESIGN SHALL MEET OR EXCEED ASTM C913 REQUIREMENTS.
4. TYPE "E" INLET TOP CAN BE CONSTRUCTED ON A STANDARD "C" MANHOLE
5. SEE STANDARD "C" MANHOLE DETAILS FOR MAXIMUM PIPE I.D. AND REQUIRED CLEARANCES

CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

# STORM SEWER TYPE E INLET

(SCALE: NOT TO SCALE)

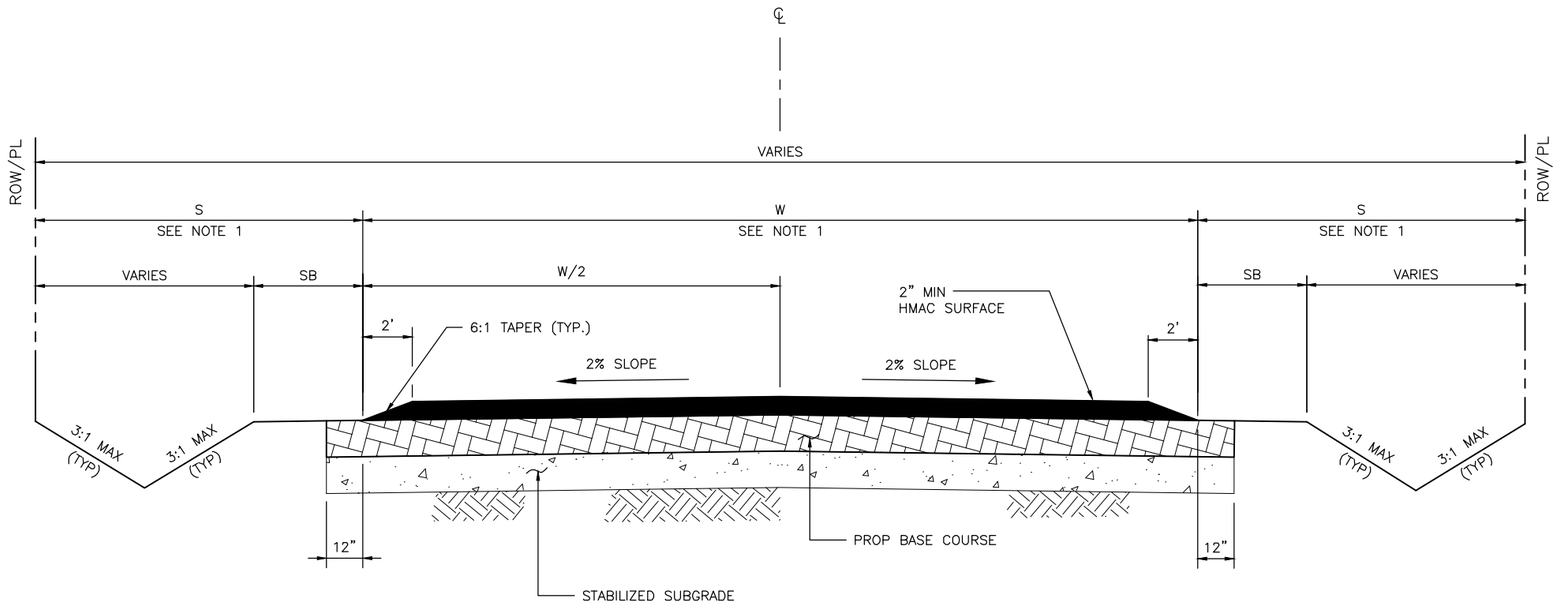
APPROVED BY:

CITY ENGINEER

EFF DATE: NOVEMBER 2024 | DWG NO: 02631-06

## NOTES:

1. REFER TO CONTRACT DRAWINGS FOR WAY WIDTH (W), "S" DIMENSION (S), AND SAFETY BUFFER (SB) WIDTHS.
2. BASE COURSE SHALL BE:
   ALTERNATES:
   A) 6" (MIN) HOT MIX ASPHALTIC CONCRETE.
   B) 8" (MIN) CRUSHED CONCRETE OR LIMESTONE.
3. STABILIZED SUBGRADE TO BE SPECIFIED PER PROJECT SPECIFIC GEOTECHNICAL REPORT.




HMAC PAVEMENT – DITCH SECTION

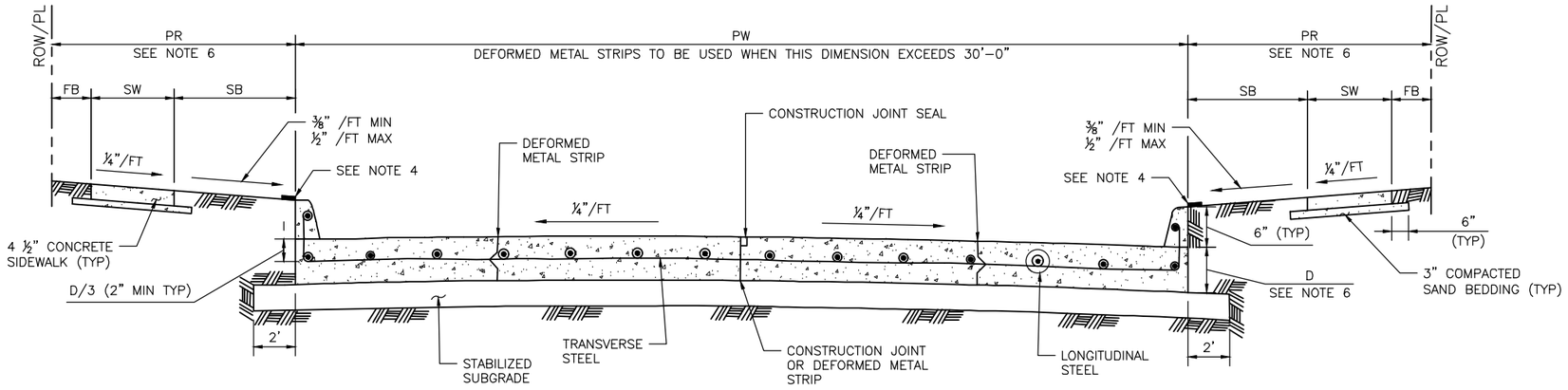
CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

HOT MIX ASPHALTIC
CONCRETE PAVEMENT ROAD
TYPICAL CROSS SECTION
(SCALE: NOT TO SCALE)

APPROVED BY:

CITY ENGINEER

EFF DATE: NOVEMBER 2024 | DWG NO: 02741-01




TYPICAL SINGLE ROADWAY SECTION FOR CONCRETE PAVEMENT WITH CURBS

## NOTES:

1. THE MAXIMUM WIDTH BETWEEN LONGITUDINAL JOINTS SHALL NOT EXCEED 15'–0".
2. ALL EARTHEN AREAS ARE TO BE HYDROMULCHED UNLESS SHOWN OTHERWISE ON DRAWINGS.
3. CONTRACTOR MAY SAW CUT IN LIEU OF DEFORMED METAL STRIP.
4. USE STRIP OF SOD GRASS TO PREVENT EROSION UNTIL STAND OF GRASS IS ESTABLISHED.
5. AN EQUAL OR LARGER AREA OF WELDED REINFORCEMENT BAR CONFORMING TO ASTM A497, MAY BE SUBSTITUTED FOR REBARS LISTED IN TABLE 1.
6. REFER TO CONTRACT DRAWINGS FOR PAVEMENT WIDTH (PW), PEDESTRIAN REALM (PR), SIDEWALK (SW), FRONTAGE BUFFER (FB), AND SAFETY BUFFER (SB) WIDTHS.
7. PAVEMENT THICKNESS SHALL BE 6–IN OR LOCAL ONLY. ALL OTHERS TO BE BASED ON GEOTECHNICAL RECOMMENDATIONS.
8. STABILIZED SUBGRADE TO BE SPECIFIED PER PROJECT SPECIFIC GEOTECHNICAL REPORT.

## TABLE 1

| PAVEMENT THICKNESS 'D' (IN) | PAVEMENT WIDTH 'PW' (FT) | LONGITUDINAL STEEL | | | | | | | | | TRAVERSE STEEL | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | #4 BARS | | | #5 BARS | | | #6 BARS | | | #4 BARS | #5 BARS | #6 BARS |
| | | NUMBER OF BARS | SPACING (IN) | END BAR SPACING (IN) | NUMBER OF BARS | SPACING (IN) | END BAR SPACING (IN) | NUMBER OF BARS | SPACING (IN) | END BAR SPACING (IN) | SPACING (IN) | SPACING (IN) | SPACING (IN) |
| 6 | 28 | 17 | 20.50 | 4.00 | – | – | – | – | – | – | 36 | – | – |
| 7 | 25 | 17 | 18.25 | 4.00 | – | – | – | – | – | – | 36 | – | – |
| 7 | 35 | 24 | 18.00 | 3.00 | – | – | – | – | – | – | 36 | – | – |
| 7 | 36 | 25 | 17.75 | 3.00 | – | – | – | – | – | – | 36 | – | – |
| 7 | 37 | 25 | 18.25 | 3.00 | – | – | – | – | – | – | 36 | – | – |
| 8 | 25 | 20 | 15.50 | 2.75 | 13 | 24.50 | 3.0 | – | – | – | 36 | 36 | – |
| 8 | 34 | 27 | 15.50 | 2.50 | 17 | 25.00 | 4.0 | – | – | – | 36 | 36 | – |
| 8 | 35 | 27 | 16.00 | 2.00 | 18 | 24.25 | 4.0 | – | – | – | 36 | 36 | – |
| 8 | 36 | 28 | 15.75 | 3.25 | 18 | 25.00 | 3.0 | – | – | – | 30 | 36 | – |
| 9 | 25 | 22 | 14.00 | 3.00 | 14 | 22.50 | 4.0 | – | – | – | 36 | 36 | – |
| 9 | 34 | 31 | 13.50 | 2.00 | 19 | 22.25 | 3.5 | – | – | – | 30 | 36 | – |
| 9 | 35 | 31 | 13.75 | 3.75 | 20 | 21.75 | 3.5 | – | – | – | 30 | 36 | – |
| 9 | 36 | 32 | 13.75 | 3.00 | 21 | 21.25 | 3.5 | – | – | – | 30 | 36 | – |
| 10 | 25 | 24 | 12.75 | 3.50 | 17 | 18.25 | 4.0 | – | – | – | 36 | 36 | 36 |
| 10 | 34 | 33 | 12.50 | 4.00 | 21 | 20.00 | 4.0 | – | – | – | 30 | 36 | 36 |
| 10 | 35 | 34 | 12.50 | 3.75 | 23 | 18.75 | 4.0 | – | – | – | 30 | 36 | 36 |
| 10 | 36 | 35 | 12.50 | 3.50 | 24 | 18.50 | 3.0 | – | – | – | 30 | 36 | 36 |
| 11 | 25 | 27 | 11.25 | 3.00 | 17 | 18.25 | 4.0 | 12 | 26.75 | 3 | 36 | 36 | 36 |
| 11 | 34 | 36 | 11.50 | 2.75 | 24 | 17.50 | 2.5 | 17 | 25.00 | 4 | 24 | 36 | 36 |
| 11 | 35 | 37 | 11.50 | 3.00 | 24 | 18.00 | 3.0 | 17 | 25.75 | 4 | 24 | 36 | 36 |
| 11 | 36 | 40 | 11.00 | 2.00 | 25 | 17.75 | 3.0 | 17 | 26.50 | 4 | 24 | 36 | 36 |
| 12 | 25 | – | – | – | 19 | 16.25 | 4.0 | 13 | 24.50 | 3 | 36 | 36 | 36 |
| 12 | 34 | – | – | – | 26 | 16.00 | 4.0 | 18 | 23.50 | 4 | 24 | 36 | 36 |
| 12 | 35 | – | – | – | 26 | 16.50 | 4.0 | 19 | 23.00 | 3 | 24 | 36 | 36 |
| 12 | 36 | – | – | – | 27 | 16.25 | 4.5 | 20 | 22.25 | 4.5 | 24 | 36 | 36 |

REINFORCING STEEL BAR SIZES AND SPACINGS FOR VARIOUS PAVEMENT THICKNESSES (D) WITH: MAXIMUM TRANSVERSE CONTROL JOINT SPACING = 20'–0"
MAXIMUM EXPANSION JOINT SPACING = 80'–0"
fc' = 4,000 PSI/28 DAYS AND FY = 60,000 PSI

MINIMUM LAP LENGTH (L):
A. # 4 BARS ; L = 22 INCHES
B. # 5 BARS ; L = 27 INCHES
C. # 6 BARS ; L = 32 INCHES

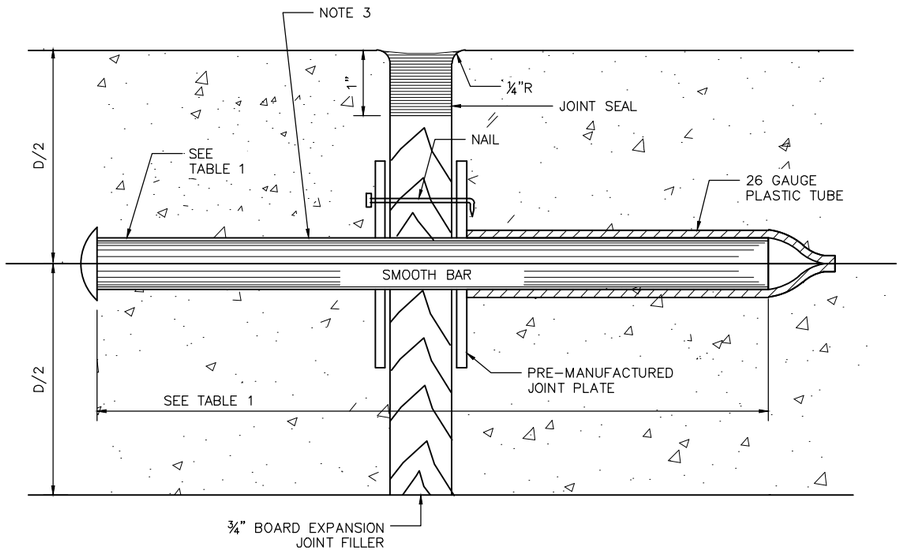
CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

CONCRETE PAVEMENT ROAD
TYPICAL CROSS SECTION &
PAVEMENT DETAILS
(SCALE: NOT TO SCALE)

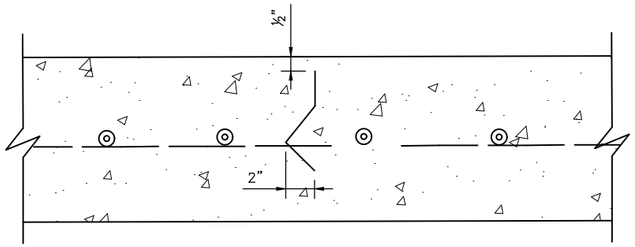
APPROVED BY:

CITY ENGINEER

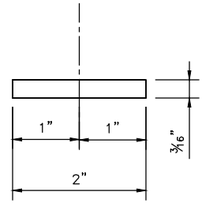
EFF DATE: NOVEMBER 2024 | DWG NO: 02751–01



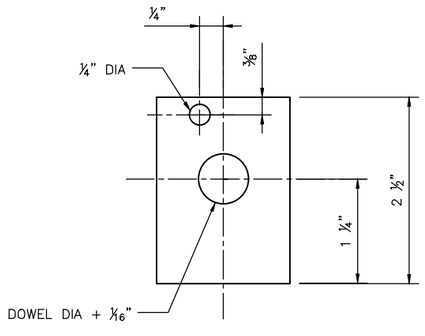

SECTION
DEFORMED METAL STRIP



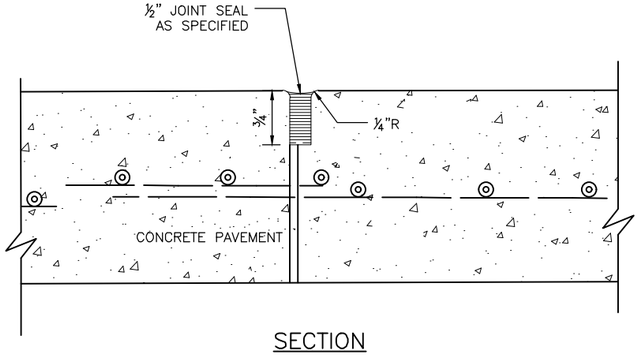

SECTION
DOWEL TYPE EXPANSION JOINT




PLAN VIEW
JOINT PLATE




ELEVATION VIEW
JOINT PLATE




SECTION
CONSTRUCTION JOINT SEAL

TABLE 1

| PAVEMENT THICKNESS (IN) | DOWEL SIZES AND SPACINGS | | |
|---|---|---|---|
| | DIAMETER (IN) | LENGTH (IN) | SPACING (IN) |
| 6 | 3/4 | 18 | 12 |
| 7 | 1 | 18 | 12 |
| 8 | 1 | 18 | 12 |
| 9 | 1 1/4 | 18 | 12 |
| 10 | 1 1/4 | 18 | 12 |
| 11 | 1 1/4 | 18 | 12 |
| 12 | 1 1/4 | 18 | 12 |

NOTES:

1. STEEL TO MEET ASTM STANDARD SPECIFICATIONS FOR CONCRETE REINFORCING BARS. UNITS TO BE SPACED 12" CENTER ON CENTER.
2. EXPANSION JOINT TO BE PLACED AT THE END OF EACH CURB RADIUS.
3. CENTER DOWEL HORIZONTALLY ON JOINT.
4. CENTER DOWEL VERTICALLY IN CONCRETE BASE. EXTEND THICKENED CONCRETE AS NEEDED TO MAINTAIN 3" MIN COVER.
5. CITY OF CLEAR LAKE SHORES APPROVED PRODUCTS MAY BE USED AS JOINT PLATE ALTERNATIVE.

CITY OF
CLEAR LAKE SHORES
ROAD AND DRAINAGE STANDARDS

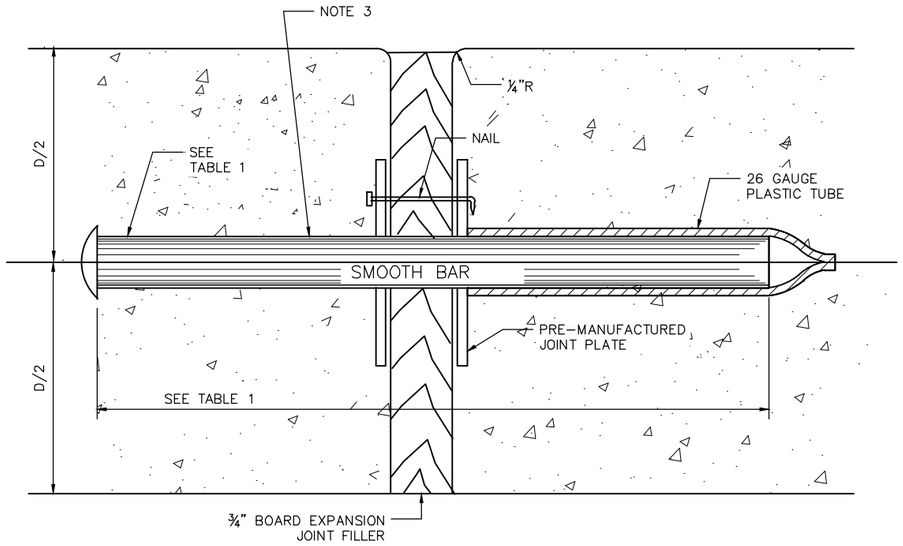
# PAVEMENT EXPANSION AND CONSTRUCTION JOINT DETAILS

(SCALE: NOT TO SCALE)

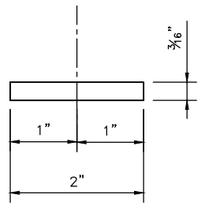
APPROVED BY:

CITY ENGINEER

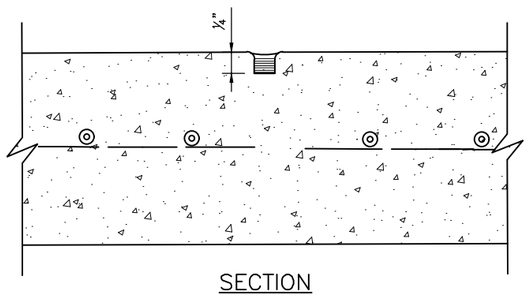
EFF DATE: NOVEMBER 2024 | DWG NO: 02751-02



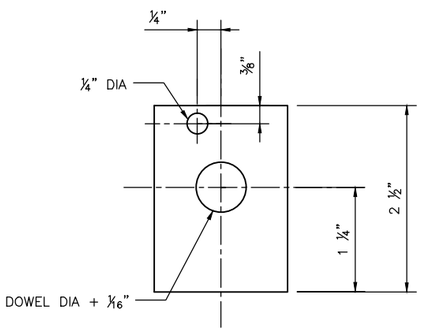

SECTION
DOWEL TYPE EXPANSION JOINT



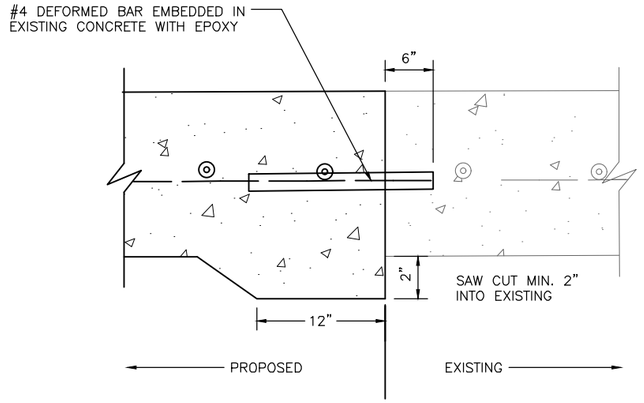

PLAN VIEW
JOINT PLATE



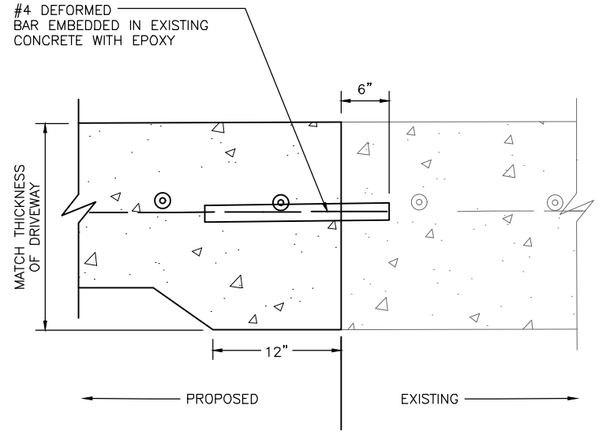

SECTION
CONTROL JOINT




ELEVATION VIEW
JOINT PLATE




SECTION
SIDEWALK TO EXISTING SIDEWALK




SECTION
SIDEWALK TO EXISTING DRIVEWAY

TABLE 1

| PAVEMENT THICKNESS (IN) | DOWEL SIZES AND SPACINGS | | |
|---|---|---|---|
| | DIAMETER (IN) | LENGTH (IN) | SPACING (IN) |
| 4 1/2 | 1/2 | 18 | 12 |
| 5 | 1/2 | 18 | 12 |
| 6 | 3/4 | 18 | 12 |
| 7 | 1 | 18 | 12 |

NOTES:

1. STEEL TO MEET ASTM STANDARD SPECIFICATIONS FOR CONCRETE REINFORCING BARS.
2. EXPANSION JOINT TO BE PLACED AT THE END OF EACH CURB RADIUS AND SPACED AT A MAXIMUM DISTANCE OF 3 FEET MAXIMUM SPACING FOR CONTROL JOINTS SHALL BE 5 FEET.
3. CENTER DOWEL HORIZONTALLY ON JOINT.
4. CENTER DOWEL VERTICALLY IN CONCRETE AS NEEDED TO MAINTAIN A 2" MIN COVER.

CITY OF
CLEAR LAKE SHORES
ROAD AND DRAINAGE STANDARDS

SIDEWALK EXPANSION AND CONSTRUCTION JOINT DETAILS

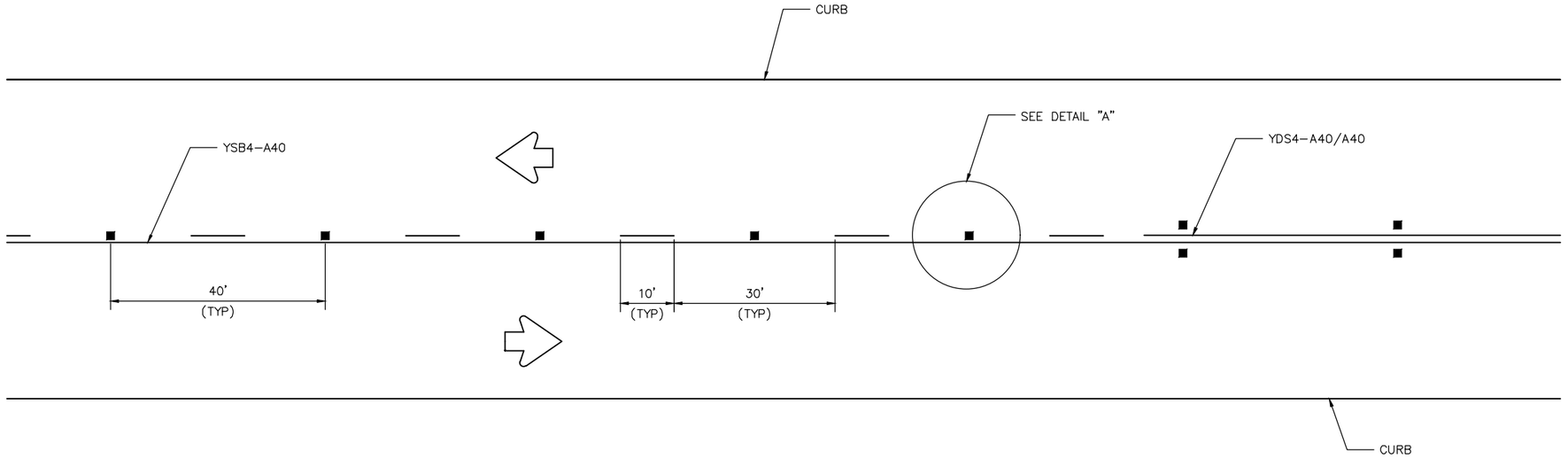
(SCALE: NOT TO SCALE)

APPROVED BY:

CITY ENGINEER

EFF DATE: NOVEMBER 2024 | DWG NO: 02751-03

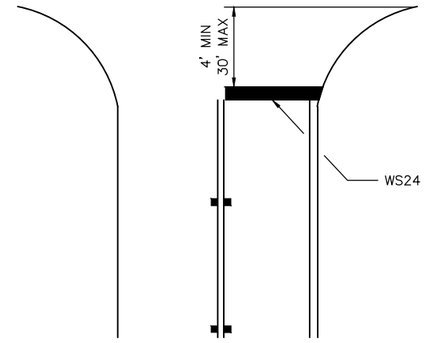
## CENTERLINE & FOR ALL TWO LANE STREETS WITH PASSING ZONE



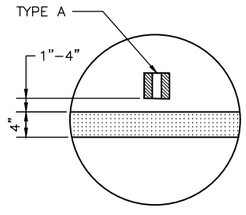

## GENERAL NOTES:

1. EDGELINE ADJACENT TO CURB AND GUTTER IS NOT REQUIRED IN ALL CASES, HOWEVER SHALL BE PLACED AS DIRECTED BY CITY TRAFFIC ENGINEER.
2. THE TRAVELED WAY INCLUDES ONLY THAT PORTION OF THE ROADWAY USED FOR VEHICULAR TRAVEL AND NOT THE PARKING LANES, SIDEWALKS, BERMS AND SHOULDERS. THE TRAVELED WAYS SHALL BE MEASURED FROM THE INSIDE OF EDGELINE TO INSIDE OF EDGELINE OF A TWO LANE ROADWAY.
3. ALL RAISED PAVEMENT MARKERS PLACED IN BROKEN LINES SHALL BE PLACED IN LINE WITH AND MIDWAY BETWEEN THE STRIPES.
4. ON CONCRETE PAVEMENTS THE RAISED PAVEMENT MARKERS SHOULD BE PLACED TO ONE SIDE OF THE LONGITUDINAL JOINTS.
5. ALL PAVEMENT MARKING MATERIAL SHALL MEET THE REQUIRED MATERIAL SPECIFICATIONS AS SPECIFIED BY THE CITY OF CLEAR LAKE SHORES STANDARD SPECIFICATIONS.

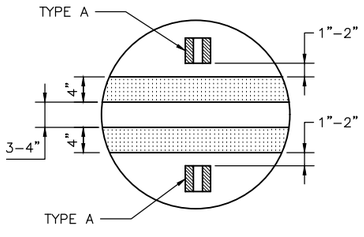
## GUIDE FOR PLACEMENT OF STOP LINES & CENTERLINE



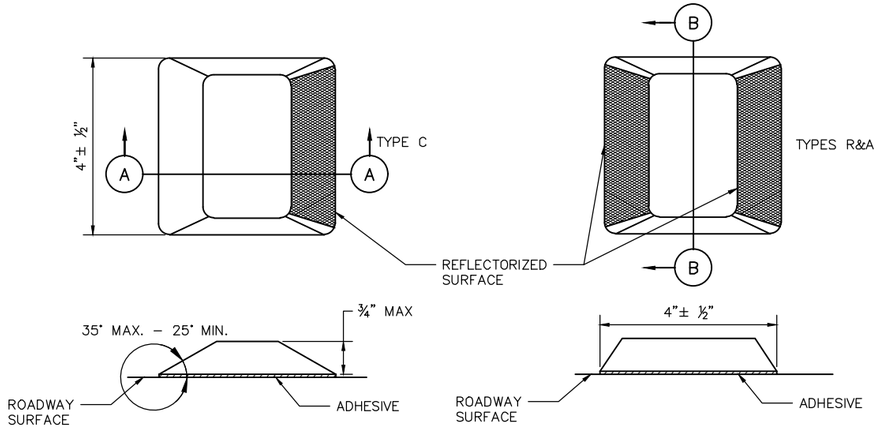

## DETAIL "A"




## DETAIL "B"




## REFLECTIVE RAISED PAVEMENT MARKERS




SECTION A

SECTION B

CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

PAVEMENT MARKINGS WITH REFLECTIVE RAISED PAVEMENT MARKERS FOR POSITION GUIDANCE
(SCALE: NOT TO SCALE)

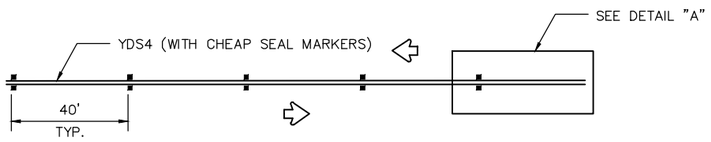
APPROVED BY:

CITY ENGINEER

EFF DATE: NOVEMBER 2024 | DWG NO: 02762–01

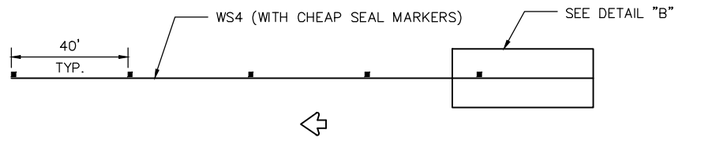
## TEMPORARY PAVEMENT MARKINGS PLACEMENT DETAILS

### DOUBLE YELLOW LINE

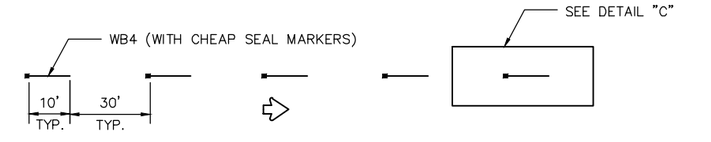



### SOLID LINES

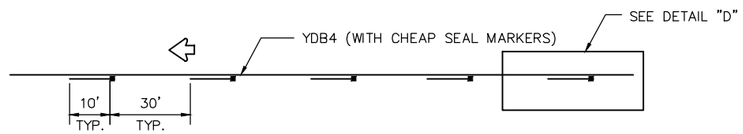
EDGE LINE OR SINGLE NO–PASSING LINE



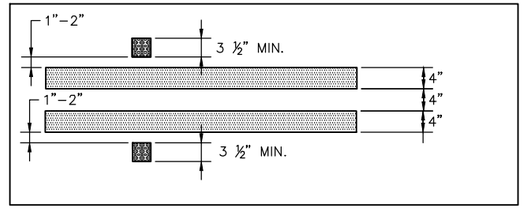

### BROKEN LINE



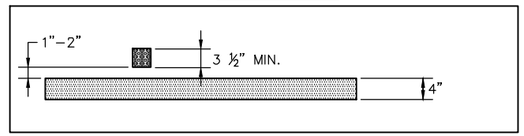

### YELLOW DOUBLE BROKEN LINE



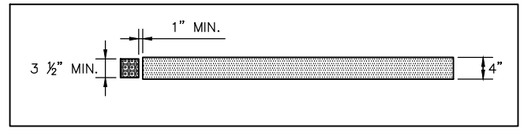

### DETAIL "A"



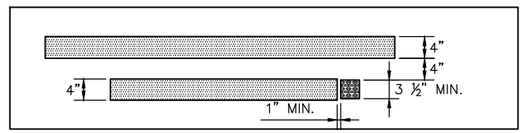

### DETAIL "B"




### DETAIL "C"



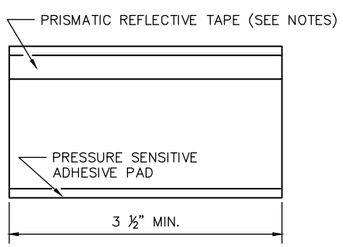

### DETAIL "D"



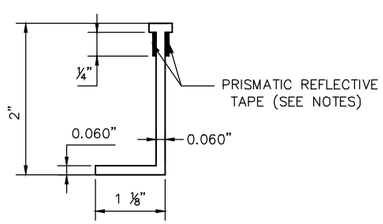

## NOTES:

1. YELLOW MARKERS SHALL HAVE YELLOW BODIES AND YELLOW REFLECTIVE TAPE.
2. WHITE MARKERS SHALL HAVE WHITE BODIES AND WHITE REFLECTIVE TAPE.
3. ONE–WAY OR TWO–WAY REFLECTIVE SHALL BE USED AS NECESSARY FOR APPLICATION.
4. THE CLEAR PLASTIC COVER MAY VARY FROM ONE MANUFACTURER TO ANOTHER IF DEEMED NECESSARY BY SPECIFIC PROJECT.
5. ALL TEMPORARY PAVEMENT MARKERS SHALL BE PLACED WITH REFLECTIVE SIDE FACING ONCOMING TRAFFIC.
6. ALL TEMPORARY STRIPING SHALL BE WATER BASED PAINT.

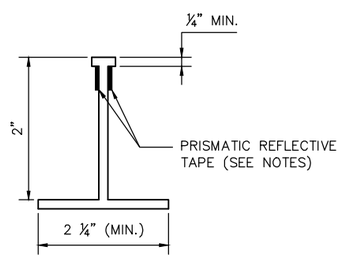
## TEMPORARY CHIP SEAL MARKER DETAIL




TEMPORARY PAVEMENT MARKER
FRONT VIEW




"L" DESIGN
RIGHT VIEW




"T" DESIGN
RIGHT VIEW

CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

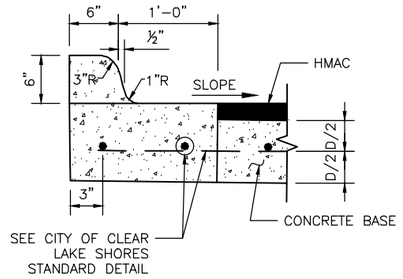
REFLECTIVE CHIP SEAL MARKER
USE FOR TEMPORARY MARKINGS

(SCALE: NOT TO SCALE)

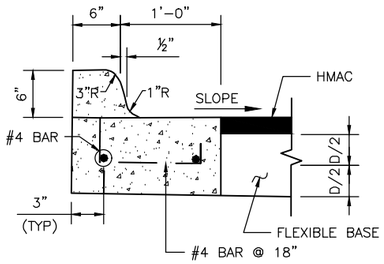
APPROVED BY:

CITY ENGINEER

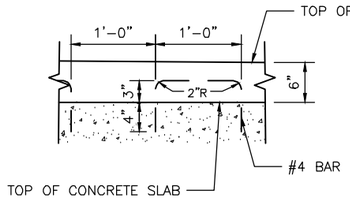
EFF DATE: NOVEMBER 2024 | DWG NO: 02762–02



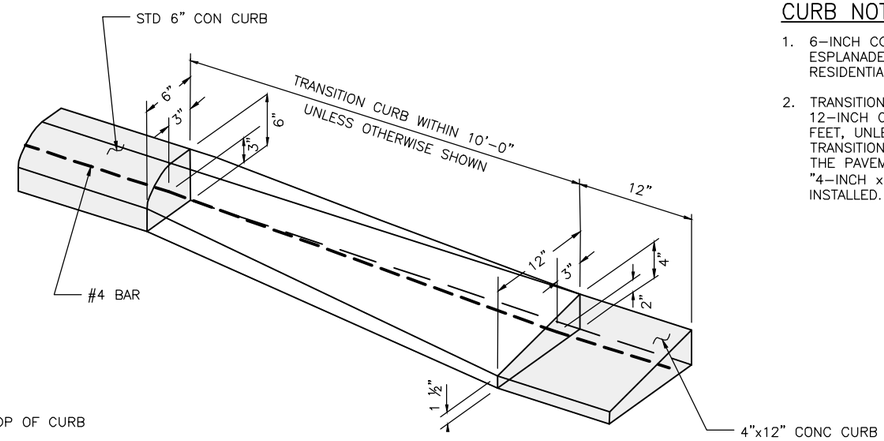

## ESPLANADE CURB CONNECTED TO CONCRETE BASE




## ESPLANADE CURB CONNECTED TO FLEXIBLE BASE



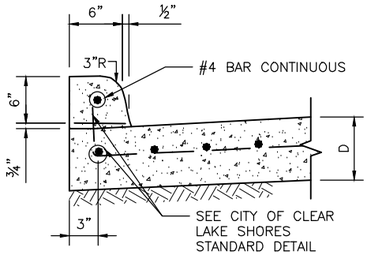

## ALTERNATE CONCRETE CURB REINFORCEMENT




## CURB TRANSITION
(SEE NOTES)

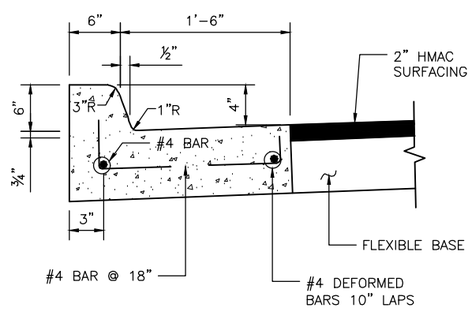
## 4"x12" MONOLITHIC AND TRANSITION CURB NOTES:

1. 6-INCH CONCRETE CURB TO BE CONSTRUCTED ON ALL ESPLANADES, ISLANDS, NON-RESIDENTIAL STREETS, AND RESIDENTIAL STREETS.
2. TRANSITIONS FROM 6-INCH CONCRETE CURB TO 4-INCH x 12-INCH CONCRETE CURB TO BE ACCOMPLISHED WITHIN 10 FEET, UNLESS OTHERWISE SHOWN. IF THIS 10-FEET TRANSITION CURB IS NOT POURED MONOLITHICALLY WITH THE PAVEMENT, THEN REINFORCING STEEL AS SHOWN IN "4-INCH x 12-INCH TRANSITION CURB" IS TO BE INSTALLED.

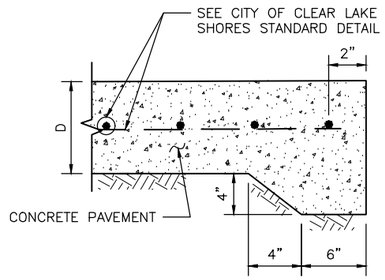



## CONCRETE CURB

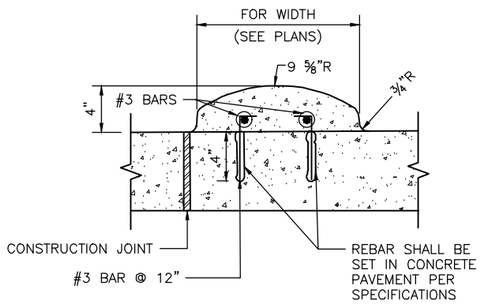
WHEN CONCRETE CURB IS TO BE PLACED EXISTING CONCRETE USE BASE #4 BAR @ 18x10" LONG, DOWELED AND SET IN EPOXY GROUT. SET #4 DOWEL BARS, 25" LONG AT 12" C-C WHEN PAVEMENT SECTION POURED.



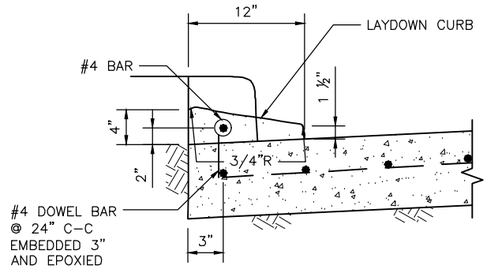

## MONOLITHIC CURB AND GUTTER



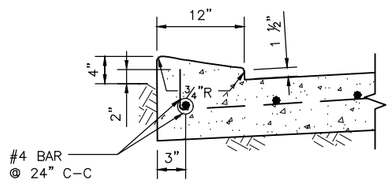

## STANDARD CONCRETE PAVING HEADER




## MOUNTABLE CURB




## 4-INCH x 12-INCH TRANSITION CURB
(SEE NOTES)




## 4-INCH x 12-INCH MONOLITHIC CURB
(SEE NOTES)

CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

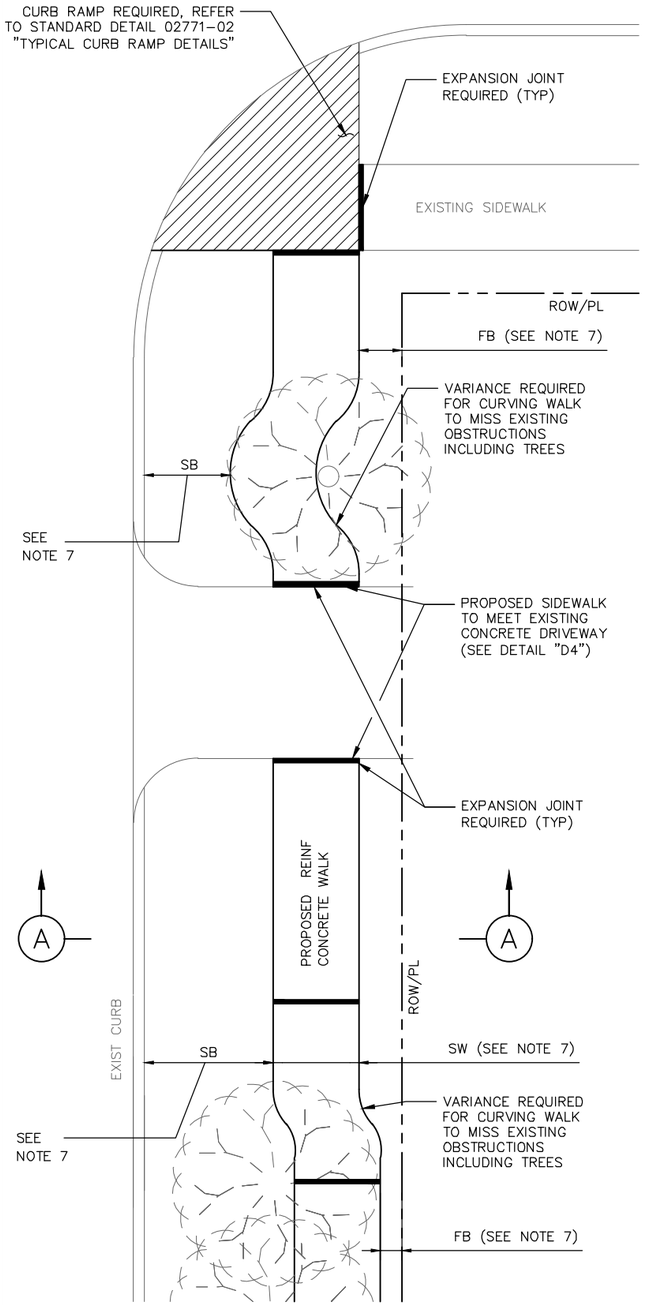
# CURB, CURB AND GUTTER AND HEADERS DETAILS

(SCALE: NOT TO SCALE)

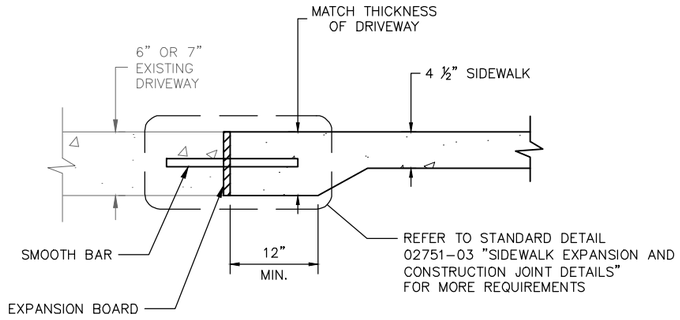
APPROVED BY:

CITY ENGINEER

EFF DATE: NOVEMBER 2024 | DWG NO: 02770-01




PLAN VIEW

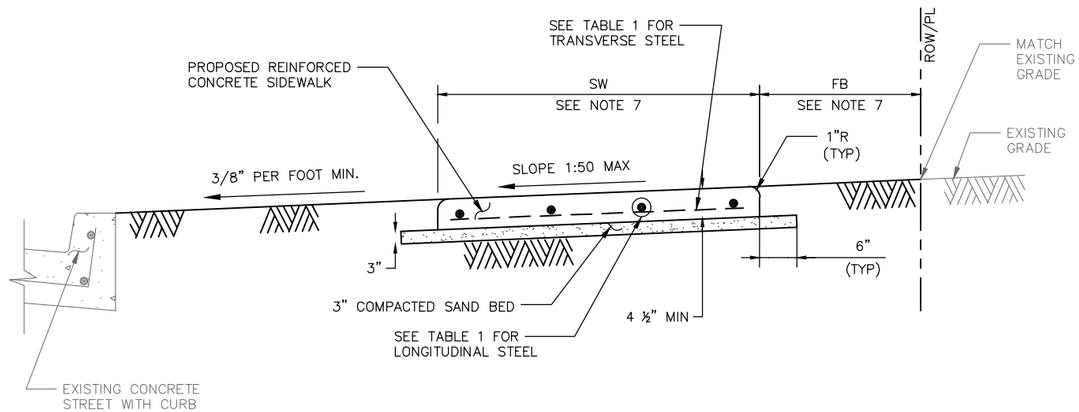



## DETAIL D4
## DRIVEWAY/SIDEWALK HEADER

## TABLE 1

REINFORCING STEEL INFORMATION
FOR 4 ½ " THICK SIDEWALKS
EXPANSION JOINT SPACING = 40 FT
fc' = 3,500 PSI AND fy = 60,000 PSI
REFER TO CONTRACT DRAWINGS FOR SIDEWALKS WIDER THAN 6 FEET.

| SIDEWALK THICKNESS (IN) | SIDEWALK WIDTH (FT) | LONGITUDINAL STEEL | | | TRANSVERSE STEEL #3 BARS SPACING (IN) |
|---|---|---|---|---|---|
| | | #3 BARS | | | |
| | | NO. OF BARS | SPACING (IN) | END BAR SPACING (IN) | |
| 4 1/2 | 5 | 3 | 27 | 3 | 48 |
| 4 1/2 | 6 | 4 | 22 | 3 | 48 |




SECTION A–A

## NOTES:

1. 6X6 – W2.9XW2.9 WELDED WIRE FABRIC MAY BE USED IN LIEU OF THE REINFORCING STEEL GIVEN IN TABLE 1.
2. REINFORCED CONCRETE SIDEWALKS THRU DRIVEWAYS OPENINGS SHALL BE EITHER 6" THICK OR 7" THICK AS SPECIFIED ON 6" STABILIZED SUBGRADE. FOR THE REINFORCING STEEL REQUIREMENTS, SEE CITY OF CLEAR LAKE SHORES STANDARD DETAILS 02775-01, 02775-02, 02775-04, AND 02775-05.
3. MAXIMUM SPACING FOR EXPANSION JOINTS SHALL BE 40 FEET.
4. CONTRACTOR SHALL CONSTRUCT SIDEWALK IN A MANNER NOT TO BLOCK THE NATURAL DRAINAGE FROM ADJACENT PROPERTY.
5. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF CLEAR LAKE SHORES STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
6. CURB RAMPS THAT ARE STEEPER THAN A 1:12 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF CLEAR LAKE SHORES UNLESS NOTED OTHERWISE.
7. REFER TO CONTRACT DRAWINGS FOR SIDEWALK (SW), FRONTAGE BUFFER (FB), AND SAFETY BUFFER (SB) WIDTHS.

CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

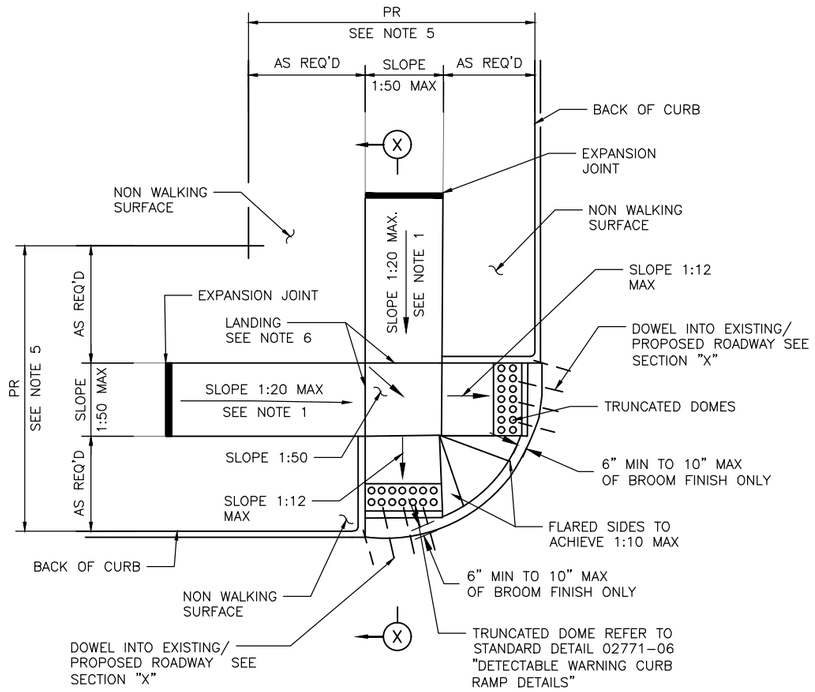
# TYPICAL SIDEWALK LAYOUT AND DETAILS

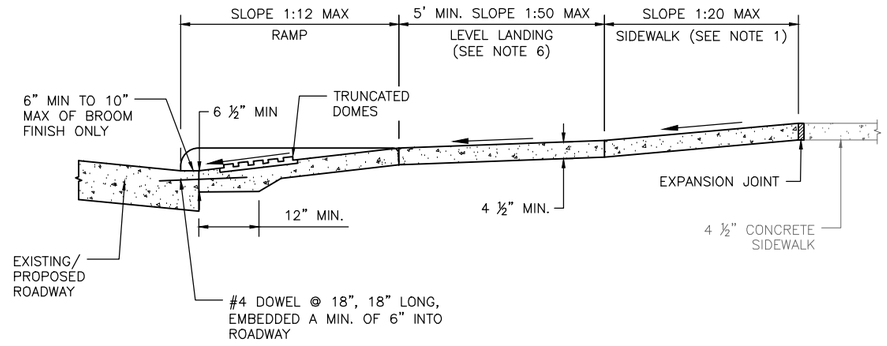
(SCALE: NOT TO SCALE)

APPROVED BY:

CITY ENGINEER

EFF DATE: NOVEMBER 2024 | DWG NO: 02771-01



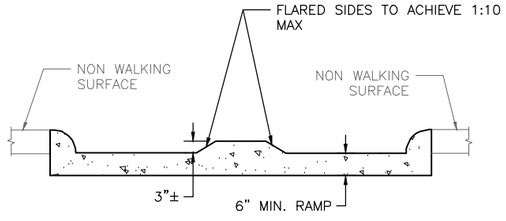




SECTION X–X

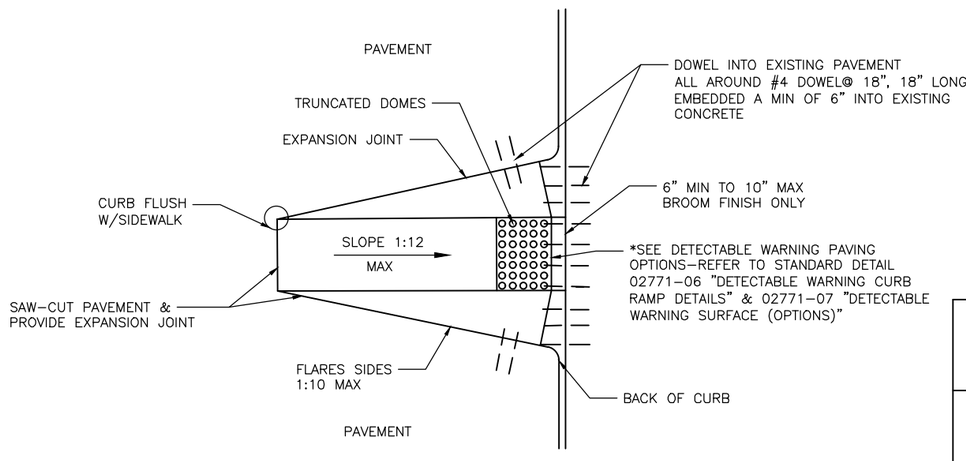
## NOTES:

1. REPLACE EXISTING SIDEWALK FROM LEVEL LANDING AS NECESSARY TO ACHIEVE 1:20 SLOPE
2. BROOM FINISH IS MEASURED FROM FACE OF CURB.
3. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF CLEAR LAKE SHORES STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
4. CURB RAMPS THAT ARE STEEPER THAN A 1:12 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF CLEAR LAKE SHORES UNLESS NOTED OTHERWISE.
5. REFER TO CONTRACT DRAWINGS FOR PEDESTRIAN REALM (PR) WIDTH.
6. MINIMUM 5'x5' LANDING PAD ACCORDING TO ADA REQUIREMENTS. WHEN THE APPROACHING SIDEWALK IS WIDER THAN 5', THE LANDING PAD AND RAMP WIDTH MUST MATCH THE SIDEWALK WIDTH.
7. FOR STREETS WITH WALKABLE SURFACES IMMEDIATELY BEHIND THE CURB A FLARE IS REQUIRED ON BOTH SIDES OF THE RAMP.

## STREETS WITH NON– WALKING SURFACE BEHIND CURB SEE NOTE–7




ELEVATION
LOOKING UP RAMP




CURB RAMP CONSTRUCTION FOR EXISTING PAVEMENT

CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

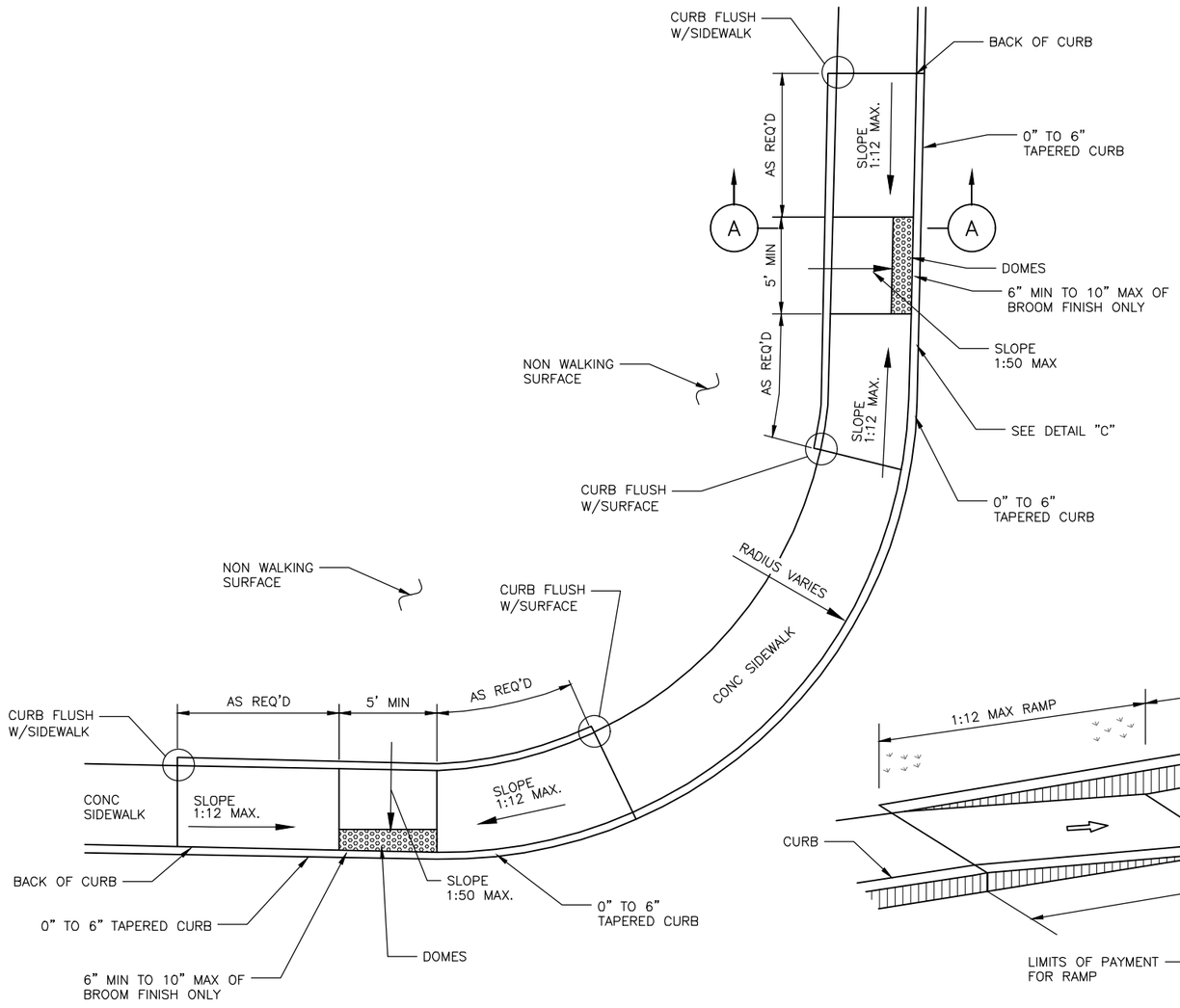
# TYPICAL CURB RAMP DETAILS

(SCALE: NOT TO SCALE)

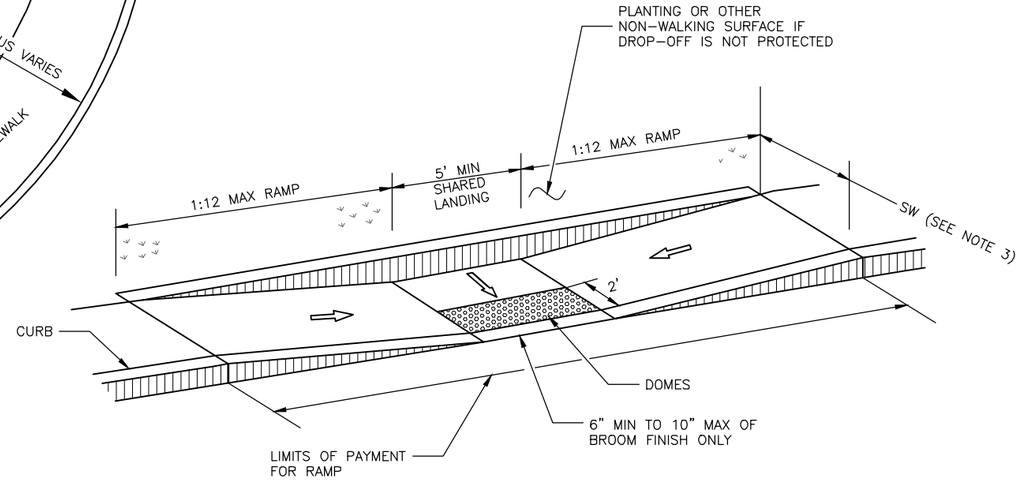
APPROVED BY:

CITY ENGINEER

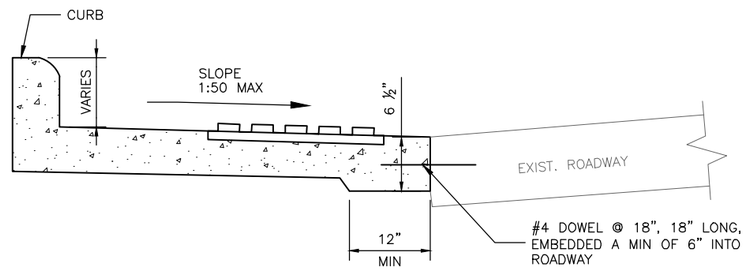
EFF DATE: NOVEMBER 2024 | DWG NO: 02771–02




SIDEWALK ON BACK OF CURB




DETAIL "C"




SECTION A–A

## NOTES:

1. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF CLEAR LAKE SHORES STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
2. CURB RAMPS THAT ARE STEEPER THAN A 1:12 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF CLEAR LAKE SHORES.
3. REFER TO CONTRACT DRAWINGS FOR S–DIMENSION (S), SIDEWALK (SW), FRONTAGE BUFFER (FB), AND SAFETY BUFFER (SB) WIDTHS.

CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

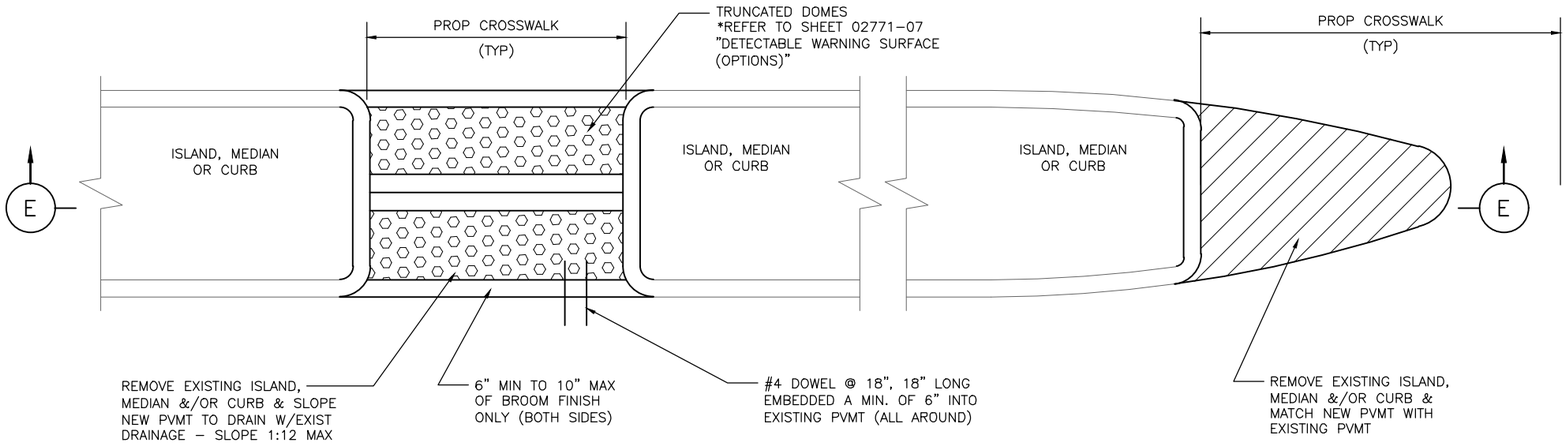
# PARALLEL CURB RAMP

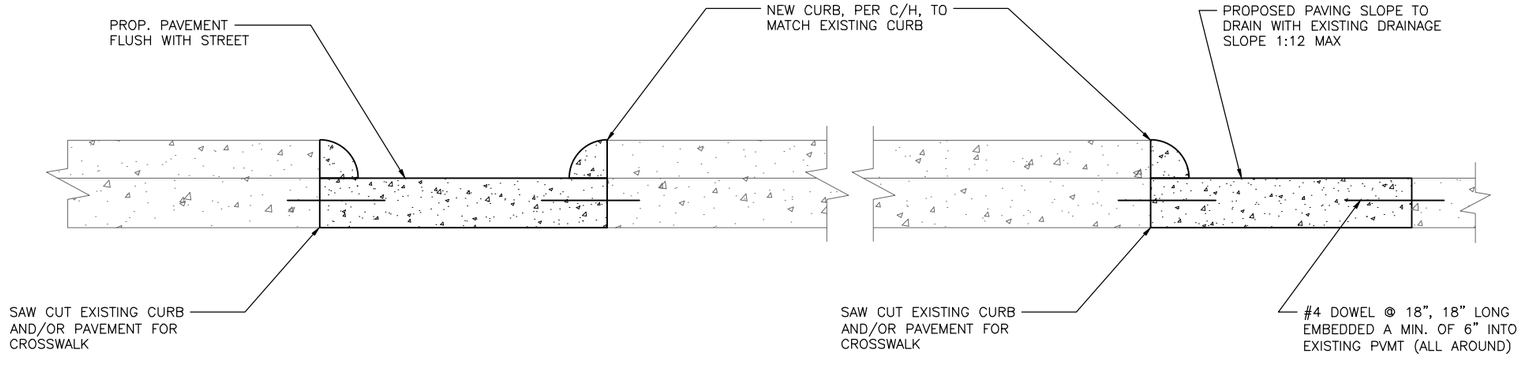
(SCALE: NOT TO SCALE)

APPROVED BY:

CITY ENGINEER

EFF DATE: NOVEMBER 2024 | DWG NO: 02771–03




## SECTION E–E
## FOR ISLAND, MEDIAN, OR CURB MODIFICATIONS FOR CROSSWALKS

## NOTES:

1. SEE CITY OF CLEAR LAKE SHORES STANDARD DETAIL FOR PAVEMENT MARKING DETAILS.
2. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF CLEAR LAKE SHORES STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
3. CURB RAMPS THAT ARE STEEPER THAN A 1:12 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF CLEAR LAKE SHORES.

CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

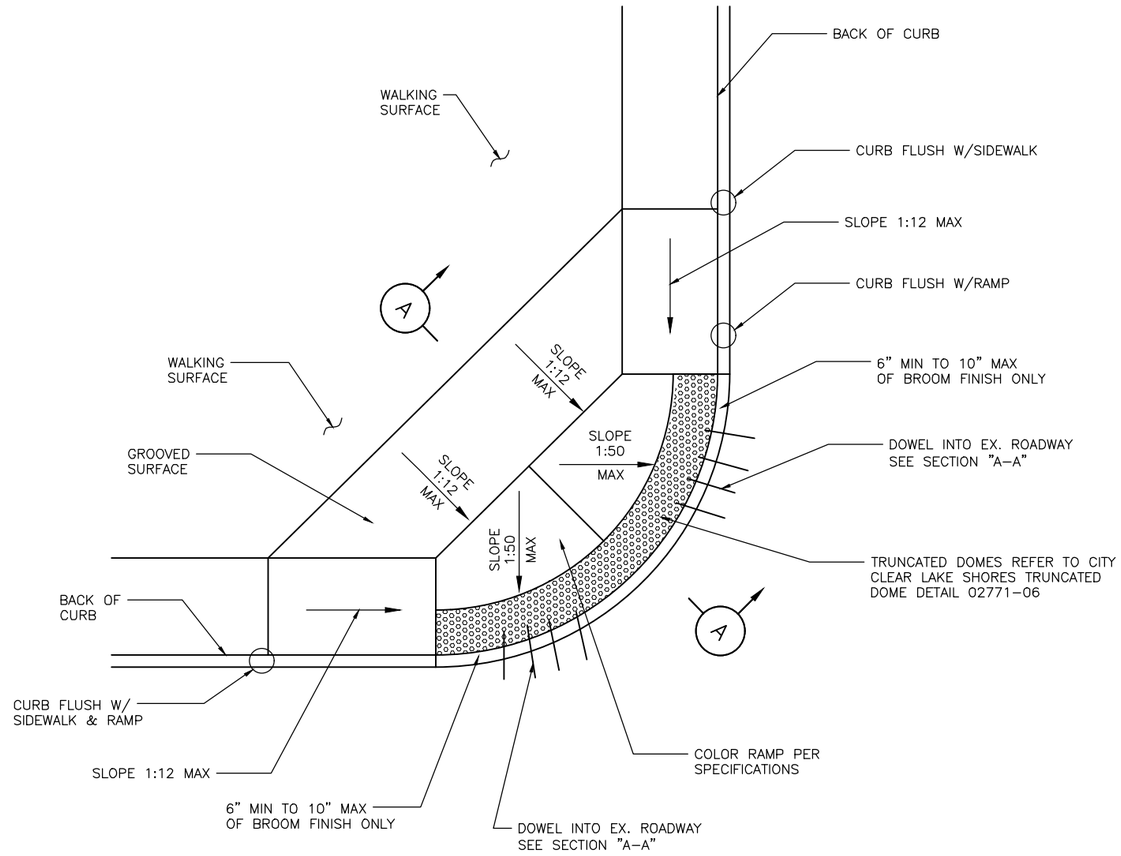
# CURB MODIFICATION FOR CURB RAMPS & CROSSWALK

(SCALE: NOT TO SCALE)

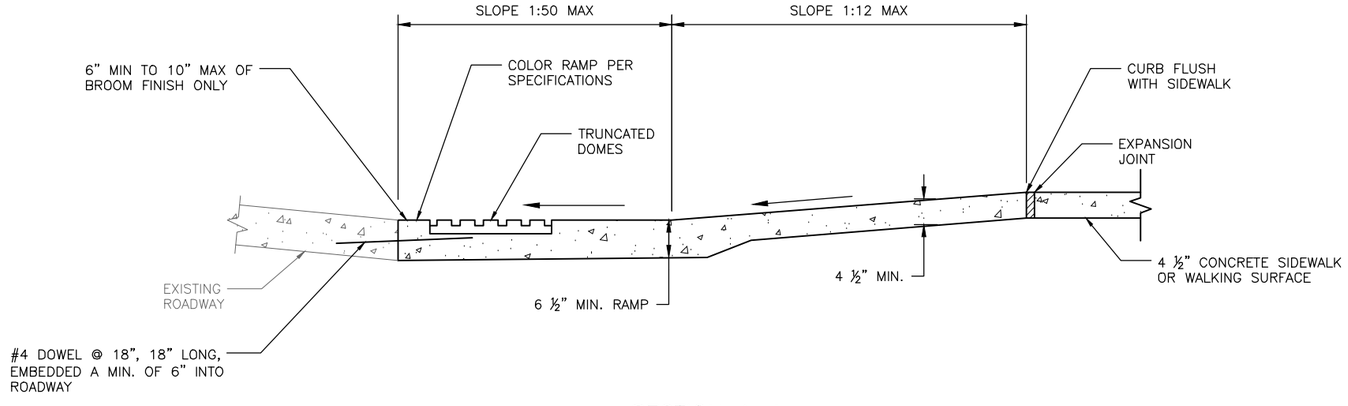
APPROVED BY:

CITY ENGINEER

EFF DATE: NOVEMBER 2024 | DWG NO: 02771-04




PLAN




SECTION A–A

## NOTES:

1. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY CLEAR LAKE SHORES STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
2. CURB RAMPS THAT ARE STEEPER THAN A 1:12 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF CLEAR LAKE SHORES.
3. THIS STANDARD DETAIL SHALL BE USED ONLY IF THE ROADWAY GEOMETRIC DOESN'T ALLOW STANDARD DETAILS 02771–02, 02771–03, AND 02771–08 TO BE USED.
4. THIS STANDARD DETAIL SHALL NOT BE USED IN LIEU OF STANDARD DETAILS 02771–02, 02771–03, AND 02771–08 UNLESS APPROVED BY THE CITY.

CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

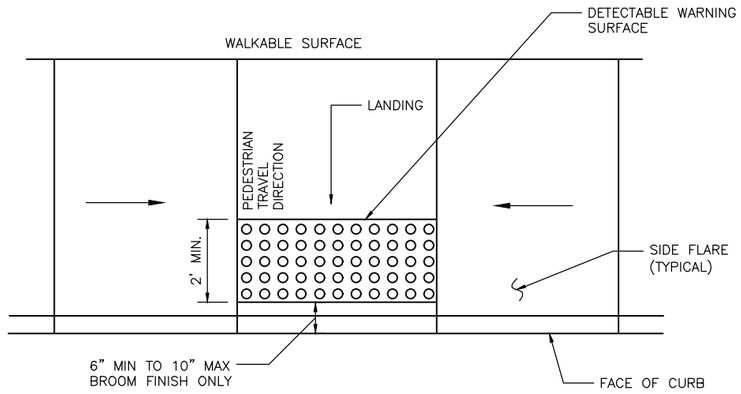
# COMMERCIAL & HIGH DENSITY CONDITIONS CURB RAMP DETAILS

(SCALE: NOT TO SCALE)

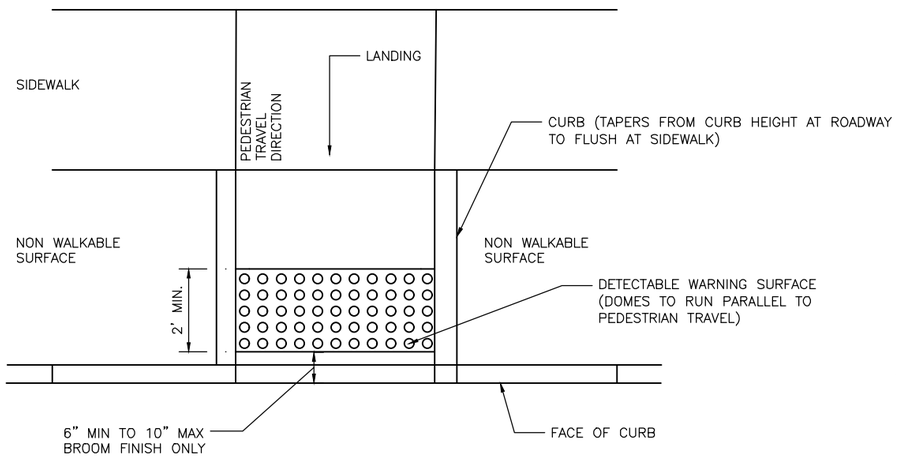
APPROVED BY:

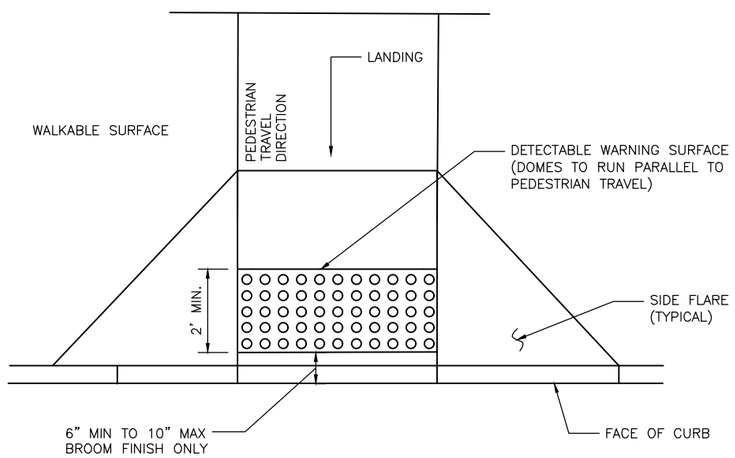
CITY ENGINEER

EFF DATE: NOVEMBER 2024 | DWG NO: 02771–05




TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON LANDING AT STREET EDGE




TYPICAL PLACEMENT OF DETECTABLE WARNING SURFACE ON SLOPING RAMP RUN

## GENERAL NOTES FOR DETECTABLE WARNINGS:

1. DETECTABLE WARNING SURFACES MUST BE FULLY ADA COMPLIANT.
2. ALL NEW CURB RAMPS MUST CONTAIN A DETECTABLE WARNING SURFACE THAT CONSISTS OF RAISED TRUNCATED DOMES. THE SURFACE MUST CONTRAST VISUALLY WITH ADJOINING SURFACE, INCLUDING SIDE FLARES. FURNISH DARK BROWN OR DARK RED DETECTABLE WARNING SURFACE ADJACENT TO UNCOLORED CONCRETE, UNLESS SPECIFIED ELSEWHERE IN THE PLANS.
3. DETECTABLE WARNING SURFACES MUST MAINTAIN A SLIP RESISTANCE WITH FA–VALUE OF EQUAL TO OR GREATER THAN 0.8.
4. DETECTABLE WARNING SURFACES MUST MAINTAIN A WATER ABSORPTION RATE OF LESS THAN 1%, DETECTABLE WARNING SHALL NOT ALLOW WATER TO ACCUMULATE.
5. DETECTABLE WARNINGS INSTALLED INTO FRESH CONCRETE SHALL BE WITHOUT VOIDS AND UTILIZING AN ACCEPTABLE ANCHORING SYSTEM.
6. ALIGN TRUNCATED DOMES IN THE DIRECTION OF PEDESTRIAN TRAVEL WHEN ENTERING THE STREET.
7. DETECTABLE WARNING SURFACES SHALL BE A MINIMUM OF 24" 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.
8. DETECTABLE WARNING SURFACES SHALL BE LOCATED SO THAT THE EDGE NEAREST THE CURB LINE IS 6" MIN TO 10" MAX FROM THE DETECTABLE WARNING SURFACES MAY BE CURVED ALONG THE CORNER RADIUS.
9. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF CLEAR LAKE SHORES STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
10. CURB RAMPS THAT ARE STEEPER THAN A 1:12 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF CLEAR LAKE SHORES.

CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

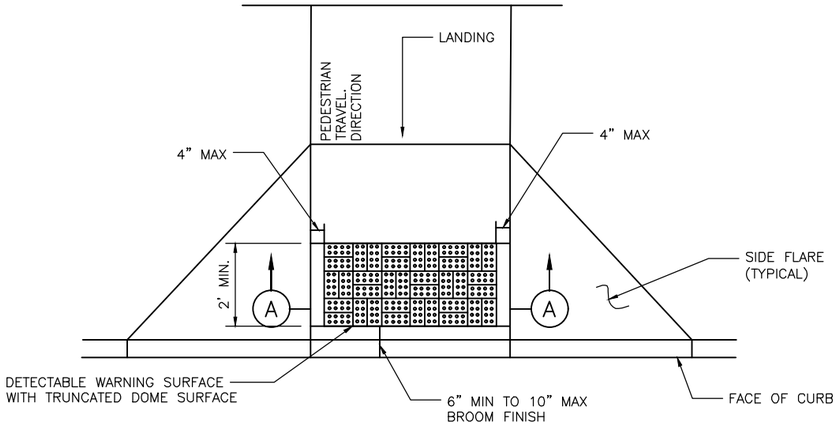
# DETECTABLE WARNING CURB RAMP DETAILS

(SCALE: NOT TO SCALE)

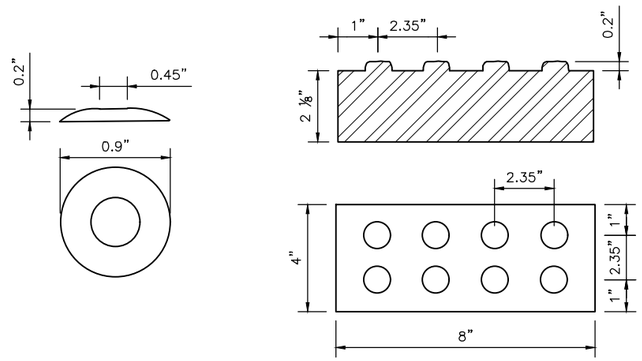
APPROVED BY:

CITY ENGINEER

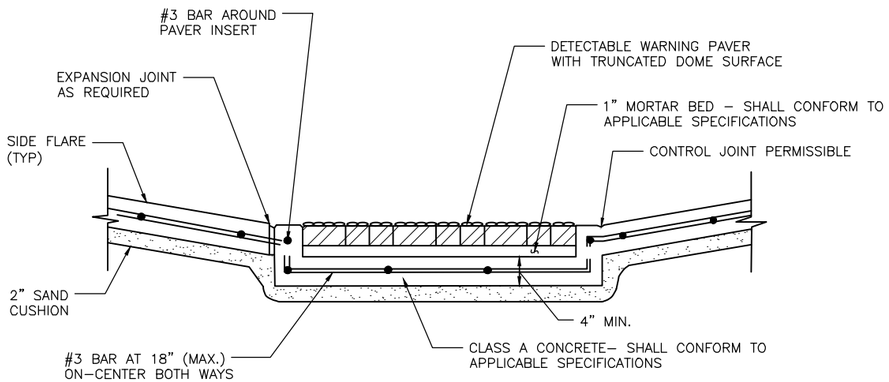
EFF DATE: NOVEMBER 2024 | DWG NO: 02771-06



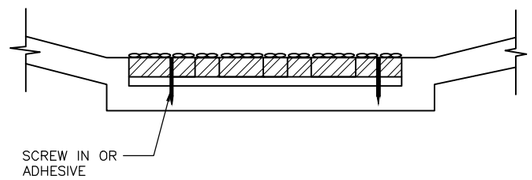

PLAN VIEW
DETECTABLE WARNING SURFACE




DETAIL
DETECTABLE WARNING PAVER




SECTION A–A
PAVER




DETAIL A–5

## GENERAL NOTES:

1. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF CLEAR LAKE SHORES STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
2. CURB RAMPS THAT ARE STEEPER THAN A 1:12 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF CLEAR LAKE SHORES.

## PAVERS:

1. FURNISH DETECTABLE WARNING SURFACE UNITS MEETING ALL REQUIREMENTS OF ASTM C–936, C–33. LAY IN A TWO BY TWO UNIT BASKET WEAVE PATTERN OR AS DIRECTED.
2. LAY FULL–SIZE UNITS FIRST FOLLOWED BY CLOSURE UNITS CONSISTING OF AT LEAST 25 PERCENT OF A FULL UNIT. CUT DETECTABLE WARNING POWER UNITS USING A POWER SAW.

## POLYMER CONCRETE:

1. DETECTABLE WARNING TILES SHALL BE MADE OF POLYMER CONCRETE MATERIALS.
2. DETECTABLE WARNING TILES SHALL BE INSTALLED INTO FRESH CONCRETE (CAST–IN–PLACE) UTILIZING AN ANCHORING SYSTEM.
3. DETECTABLE WARNING TILES SHALL BE OF TERRACOTTA (BRICK–RED) COLOR AND COLORED THROUGHOUT TO GUARANTEE THE ADA REQUIRED COLOR CONTRAST.
4. DETECTABLE WARNING TILES SHALL MEET OR EXCEED THE FOLLOWING ASTM–BASED "STANDARDS" FOR CONCRETE MATERIALS.
   A. COMPRESSION STRENGTH > 12,500 PSI PER ASTM C39–04
   B. WATER ABSORPTION < 0.25% PER ASTM C97–09

## PADS:

1. FURNISH REQUIREMENTS OF ADAAG (MARCH 2003).
2. OTHER MATERIALS MAY BE USED IF APPROVED BY THE CITY ENGINEER

CITY OF
CLEAR LAKE SHORES
ROAD AND DRAINAGE STANDARDS

DETECTABLE WARNING SURFACE
(OPTIONS)

(SCALE: NOT TO SCALE)

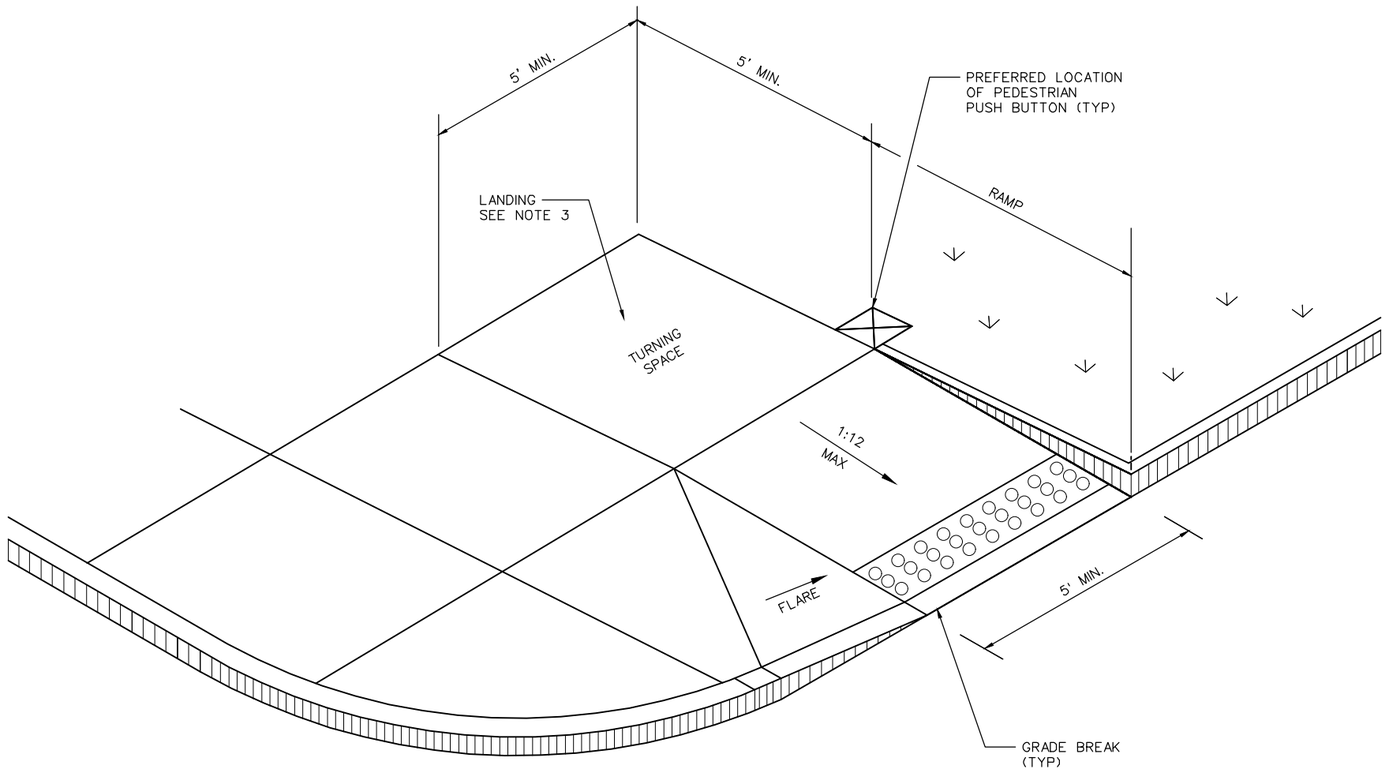
APPROVED BY:

CITY ENGINEER

EFF DATE: NOVEMBER 2024 | DWG NO: 02771–07

## NOTES:

1. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF CLEAR LAKE SHORES STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
2. CURB RAMPS THAT ARE STEEPER THAN A 1:12 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF CLEAR LAKE SHORES.
3. MINIMUM 5'x5' LANDING PAD ACCORDING TO ADA REQUIREMENTS. WHEN THE APPROACHING SIDEWALK IS WIDER THAN 5', THE LANDING PAD AND RAMP WIDTH MUST MATCH THE SIDEWALK WIDTH.




CITY OF
CLEAR LAKE SHORES
ROAD AND DRAINAGE STANDARDS

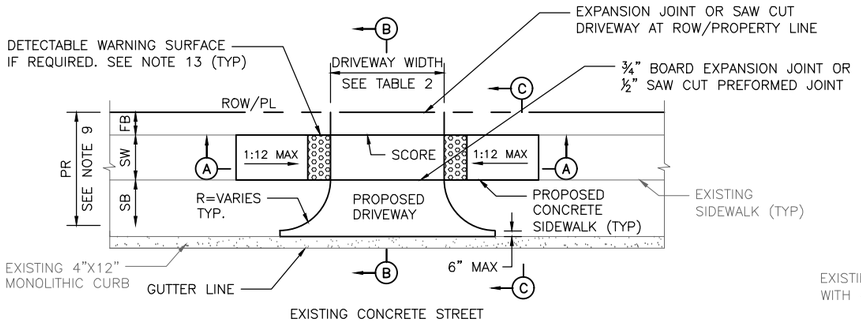
PERPENDICULAR CURB RAMP

(SCALE: NOT TO SCALE)

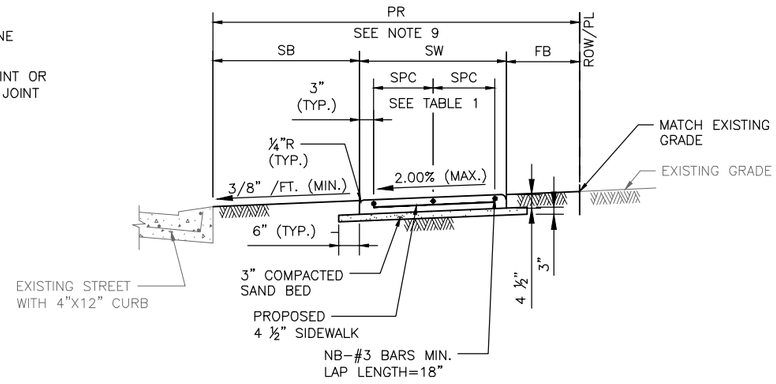
APPROVED BY:

CITY ENGINEER

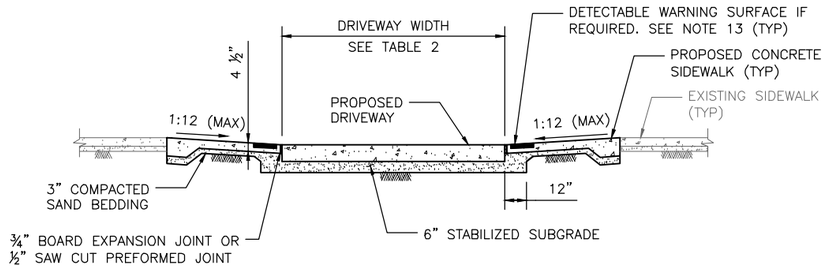
EFF DATE: NOVEMBER 2024 | DWG NO: 02771-08



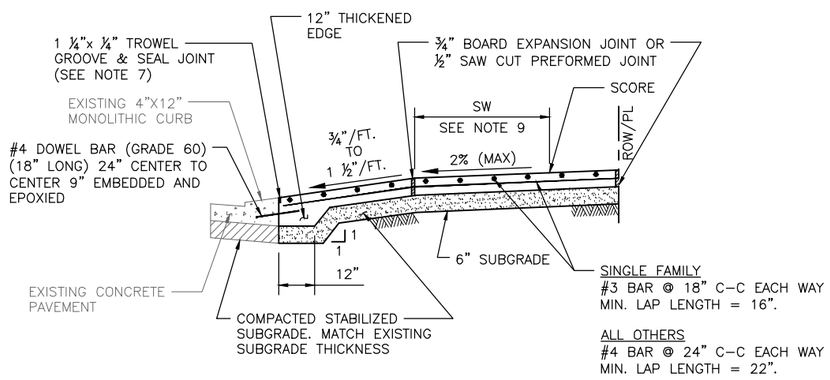

## PLAN VIEW DRIVEWAY




## SECTION C–C TYPICAL SIDEWALK SECTION




## SECTION A–A PROPOSED SIDEWALK, THROUGH DRIVEWAY WITH EXCESSIVE GRADES




## SECTION B–B TYPICAL DRIVEWAY SECTION

## TABLE 1

REINFORCING STEEL INFORMATION
FOR 4 ½ " THICK SIDEWALKS
EXPANSION JOINT SPACING = 40 FT
fc' = 3,500 PSI AND fy = 60,000 PSI
REFER TO CONTRACT DRAWINGS FOR SIDEWALKS WIDER THAN 6 FEET.

| SIDEWALK THICKNESS (IN) | SIDEWALK WIDTH (FT) | LONGITUDINAL STEEL #3 BARS | | | TRANSVERSE STEEL #3 BARS SPACING (IN) |
|---|---|---|---|---|---|
| | | NO. OF BARS "NB" | SPACING "SPC" (IN) | END BAR SPACING (IN) | |
| 4 1/2 | 5 | 3 | 27 | 3 | 48 |
| 4 1/2 | 6 | 4 | 22 | 3 | 48 |

## TABLE 2

DRIVEWAY DESIGN CRITERIA

| TRAFFIC TYPE | TYPE A DRIVEWAY (FOR SINGLE FAMILY RESIDENTIAL HOUSES OR DUPLEXES) | | | | TYPE B DRIVEWAY (SHARED ACCESS/SHARED DRIVEWAY) | | | | TYPE C DRIVEWAY (COMMERCIAL DRIVEWAY) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | WIDTH (FT) | | RADIUS (FT) | | WIDTH (FT) | | RADIUS (FT) | | WIDTH (FT) | | RADIUS (FT) | |
| | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX |
| ONE–WAY | 10 | 12 | 4 | 10 | 12(2) | 16(2) | 4(2) | 10(2) | 15 | 20 | 10 | 20 |
| TWO–WAY | 10(1) | 24 | 4 | 10 | 16 | 24 | 4 | 10 | 24 | 35 | 10 | 20 |

(1) THE MINIMUM WIDTH FOR JOINT ACCESS DRIVEWAY IS 12 FT.
(2) ONLY MURS AND COURTYARD STYLE DEVELOPMENTS ON CORNER LOTS CAN HAVE ONE–WAY DRIVEWAYS.

## NOTES:

1. REPAIR, RECONSTRUCTION OR REPLACEMENT OF SIDEWALKS SHALL MEET PERMITTING REQUIREMENTS.
2. FOR REPAIR, RECONSTRUCTION, OR REPLACEMENT OF EXISTING SIDEWALKS:
   - 2.1. EXISTING SIDEWALKS LESS THAN OR EQUAL TO 20 FEET IN TOTAL LENGTH:
     - 2.1.1. THE PROPOSED SIDEWALK WIDTH WILL BE ALLOWED TO MATCH THE EXISTING SIDEWALK.
   - 2.2. EXISTING SIDEWALKS GREATER THAN 20 FEET IN TOTAL LENGTH:
     - 2.2.1. THE SIDEWALK WIDTH FOR THE ENTIRE PROPERTY WIDTH SHALL BE IMPROVED TO MEET WIDTH REQUIREMENTS.
   - 2.3. 20 FOOT TOTAL LENGTH IS DEFINED AS:
     - 2.3.1. UP TO 10 FEET ON BOTH SIDES OF THE DRIVEWAY; OR
     - 2.3.2. UP TO 20 FEET WHEN SIDEWALK AFFECTED IS LOCATED ONLY ON ONE SIDE OF THE DRIVEWAY.
3. IF AVAILABLE ROW IS NOT SUFFICIENT TO ACCOMMODATE SIDEWALK WIDTH (SW), ENGINEER SHALL OBTAIN A VARIANCE FROM THE CITY ENGINEER.
4. DRIVEWAYS SHALL BE 6" THICK FOR SINGLE FAMILY OR DUPLEXES.
5. DRIVEWAYS AND SIDEWALKS SHALL BE CONSTRUCTED WITH PORTLAND CEMENT CONCRETE AND INCLUDE 5 1/2 SACKS OF CEMENT PER CUBIC YARD OF CONCRETE.
6. THE OUTER DOWEL BARS ARE TO BE LOCATED 12" FROM END OF PROPOSED EDGE OF DRIVEWAY RETURN. EXTEND DOWEL 3" INCHES INTO PROPOSED DRIVEWAY AND BEND REMAINING BAR TO EXTEND TO RADIUS RETURN BOTH SIDES.
7. TROWEL GROOVE SEALANT SHALL BE LOW MODULUS SILICONE OR POLYURETHANE SEALANT.
8. ALL JOINTS ALONG THE SIDEWALK SHALL BE CONSTRUCTED ACCORDING TO DRAWING 02751–03 AND SPECIFICATION 02751.
9. REFER TO CONTRACT DRAWINGS FOR PEDESTRIAN REALM (PR), SIDEWALK (SW), FRONTAGE BUFFER (FB), AND SAFETY BUFFER (SB) WIDTHS.
10. CEMENT STABILIZED SAND 1.5 SACKS OF CEMENT PER TON OF DRY SAND.
11. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF CLEAR LAKE SHORES STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
12. CURB RAMPS THAT ARE STEEPER THAN A 1:12 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF CLEAR LAKE SHORES.
13. DETECTABLE WARNING SURFACES:
    - 13.1. SIDEWALK SHALL HAVE A DETECTABLE WARNING SURFACE WHERE:
      - 13.1.1. SIDEWALK INTERSECTS TYPE C DRIVEWAYS (COMMERCIAL DRIVEWAYS) THAT ARE STOP, YIELD OR TRAFFIC SIGNAL CONTROLLED; OR
      - 13.1.2. SIDEWALK SLOPE IS GREATER THAN 1:20 AND INTERSECTS A TYPE C DRIVEWAY (COMMERCIAL DRIVEWAY)
    - 13.2. DETECTABLE WARNING SURFACES ARE OPTIONAL WHERE SIDEWALKS INTERSECT TYPE A DRIVEWAYS (SINGLE FAMILY RESIDENTIAL HOUSES OR DUPLEXES) OR TYPE B DRIVEWAYS (SHARED ACCESS/SHARED DRIVEWAYS).
    - 13.3. REFER TO STANDARD DETAILS 02771–06 TO 02771–07 FOR DETECTABLE WARNING SURFACE STANDARDS.

CITY OF
# CLEAR LAKE SHORES
ROAD AND DRAINAGE STANDARDS

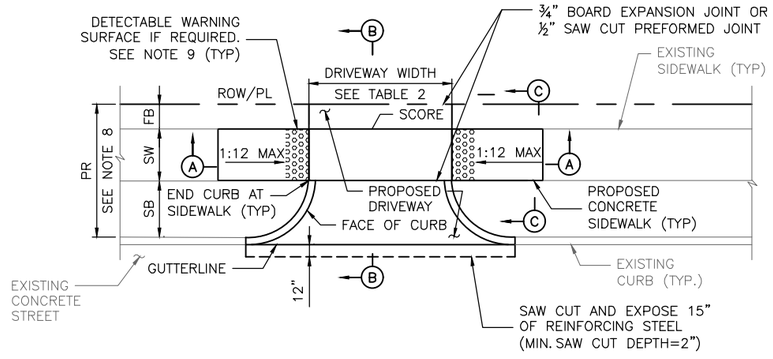
## DRIVEWAY DETAIL WITH 4IN X 12IN CURB FOR LOCAL RESIDENTIAL STREETS

(SCALE: NOT TO SCALE)

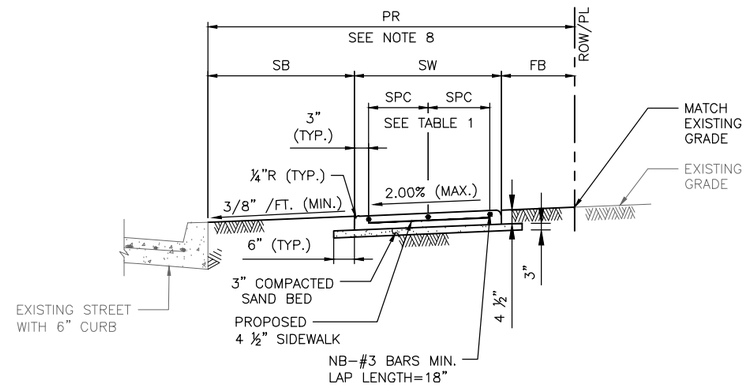
APPROVED BY:

CITY ENGINEER

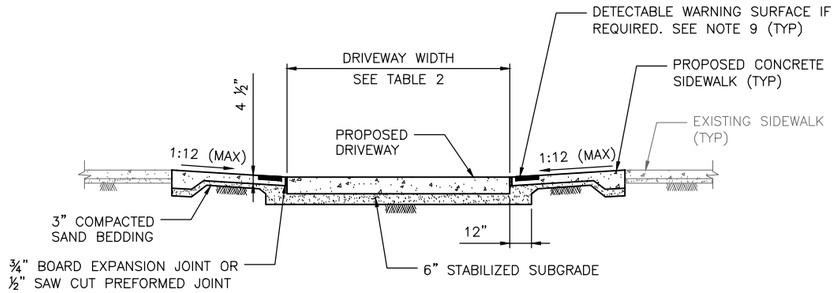
EFF DATE: NOVEMBER 2024 | DWG NO: 02775–01



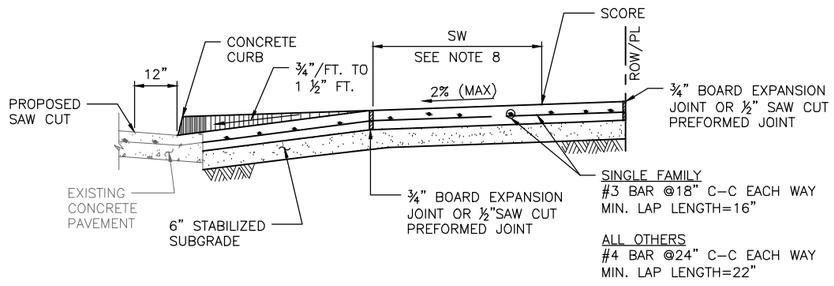

PLAN VIEW
DRIVEWAY




SECTION C–C
TYPICAL SIDEWALK SECTION




SECTION A–A
PROPOSED SIDEWALK THROUGH DRIVEWAY
WITH EXCESSIVE ELEVATION DIFFERENCE
WITH EXISTING SIDEWALK




SECTION B–B
TYPICAL DRIVEWAY SECTION

## TABLE 1

REINFORCING STEEL INFORMATION
FOR 4 ½ " THICK SIDEWALKS
EXPANSION JOINT SPACING = 40 FT
fc' = 3,500 PSI AND fy = 60,000 PSI
REFER TO CONTRACT DRAWINGS FOR SIDEWALKS WIDER THAN 6 FEET.

| SIDEWALK THICKNESS (IN) | SIDEWALK WIDTH (FT) | LONGITUDINAL STEEL #3 BARS | | | TRANSVERSE STEEL #3 BARS SPACING (IN) |
|---|---|---|---|---|---|
| | | NO. OF BARS "NB" | SPACING "SPC" (IN) | END BAR SPACING (IN) | |
| 4 1/2 | 5 | 3 | 27 | 3 | 48 |
| 4 1/2 | 6 | 4 | 22 | 3 | 48 |

## TABLE 2

| DRIVEWAY DESIGN CRITERIA | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TRAFFIC TYPE | TYPE A DRIVEWAY (FOR SINGLE FAMILY RESIDENTIAL HOUSES OR DUPLEXES) | | | | TYPE B DRIVEWAY (SHARED ACCESS/SHARED DRIVEWAY) | | | | TYPE C DRIVEWAY (COMMERCIAL DRIVEWAY) | | | |
| | WIDTH (FT) | | RADIUS (FT) | | WIDTH (FT) | | RADIUS (FT) | | WIDTH (FT) | | RADIUS (FT) | |
| | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX |
| ONE–WAY | 10 | 12 | 4 | 10 | 12(2) | 16(2) | 4(2) | 10(2) | 15 | 20 | 10 | 20 |
| TWO–WAY | 10(1) | 24 | 4 | 10 | 16 | 24 | 4 | 10 | 24 | 35 | 10 | 20 |
| (1) THE MINIMUM WIDTH FOR JOINT ACCESS DRIVEWAY IS 12 FT.<br>(3) ONLY MURS AND COURTYARD STYLE DEVELOPMENTS ON CORNER LOTS CAN HAVE ONE–WAY DRIVEWAYS. | | | | | | | | | | | | |

## NOTES:

1. REPAIR, RECONSTRUCTION OR REPLACEMENT OF SIDEWALKS SHALL MEET PERMITTING REQUIREMENTS.
2. FOR REPAIR, RECONSTRUCTION, OR REPLACEMENT OF EXISTING SIDEWALKS:
   - 2.1. EXISTING SIDEWALKS LESS THAN OR EQUAL TO 20 FEET IN TOTAL LENGTH:
     - 2.1.1. THE PROPOSED SIDEWALK WIDTH WILL BE ALLOWED TO MATCH THE EXISTING SIDEWALK.
   - 2.2. EXISTING SIDEWALKS GREATER THAN 20 FEET IN TOTAL LENGTH:
     - 2.2.1. THE SIDEWALK WIDTH FOR THE ENTIRE PROPERTY WIDTH SHALL BE IMPROVED TO MEET WIDTH REQUIREMENTS.
   - 2.3. 20 FOOT TOTAL LENGTH IS DEFINED AS:
     - 2.3.1. UP TO 10 FEET ON BOTH SIDES OF THE DRIVEWAY; OR
     - 2.3.2. UP TO 20 FEET WHEN SIDEWALK AFFECTED IS LOCATED ONLY ON ONE SIDE OF THE DRIVEWAY.
3. ALL JOINTS ALONG THE SIDEWALK SHALL BE CONSTRUCTED ACCORDING TO DRAWING 02751–03 AND SPECIFICATION 02751.
4. DRIVEWAYS SHALL BE MINIMUM 6" THICK FOR SINGLE FAMILY AND DUPLEXES. DRIVEWAYS SHALL BE MINIMUM 7" THICK FOR ALL OTHERS (I.E. COMMERCIAL, INDUSTRIAL, ETC.)
5. DRIVEWAYS AND SIDEWALKS SHALL BE CONSTRUCTED WITH PORTLAND CEMENT CONCRETE AND INCLUDE 5 1/2 SACKS OF CEMENT PER CUBIC YARD OF CONCRETE.
6. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF CLEAR LAKE SHORES STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
7. CURB RAMPS THAT ARE STEEPER THAN A 1:12 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF CLEAR LAKE SHORES.
8. REFER TO CONTRACT DRAWINGS FOR PEDESTRIAN REALM (PR), SIDEWALK (SW), FRONTAGE BUFFER (FB), AND SAFETY BUFFER (SB) WIDTHS.
9. DETECTABLE WARNING SURFACES:
   - 9.1. SIDEWALK SHALL HAVE A DETECTABLE WARNING SURFACE WHERE:
     - 9.1.1. SIDEWALK INTERSECTS TYPE C DRIVEWAYS (COMMERCIAL DRIVEWAYS) THAT ARE STOP, YIELD, OR TRAFFIC SIGNAL CONTROLLED; OR
     - 9.1.2. SIDEWALK SLOPE IS GREATER THAN 1:20 AND INTERSECTS A TYPE C DRIVEWAY (COMMERCIAL DRIVEWAY)
   - 9.2. DETECTABLE WARNING SURFACES ARE OPTIONAL WHERE SIDEWALKS INTERSECT TYPE A DRIVEWAYS (SINGLE FAMILY RESIDENTIAL HOUSES OR DUPLEXES) OR TYPE B DRIVEWAYS (SHARED ACCESS/SHARED DRIVEWAYS).
   - 9.3. REFER TO STANDARD DETAILS 02771–06 TO 02771–07 FOR DETECTABLE WARNING SURFACE STANDARDS.

CITY OF
CLEAR LAKE SHORES
ROAD AND DRAINAGE STANDARDS

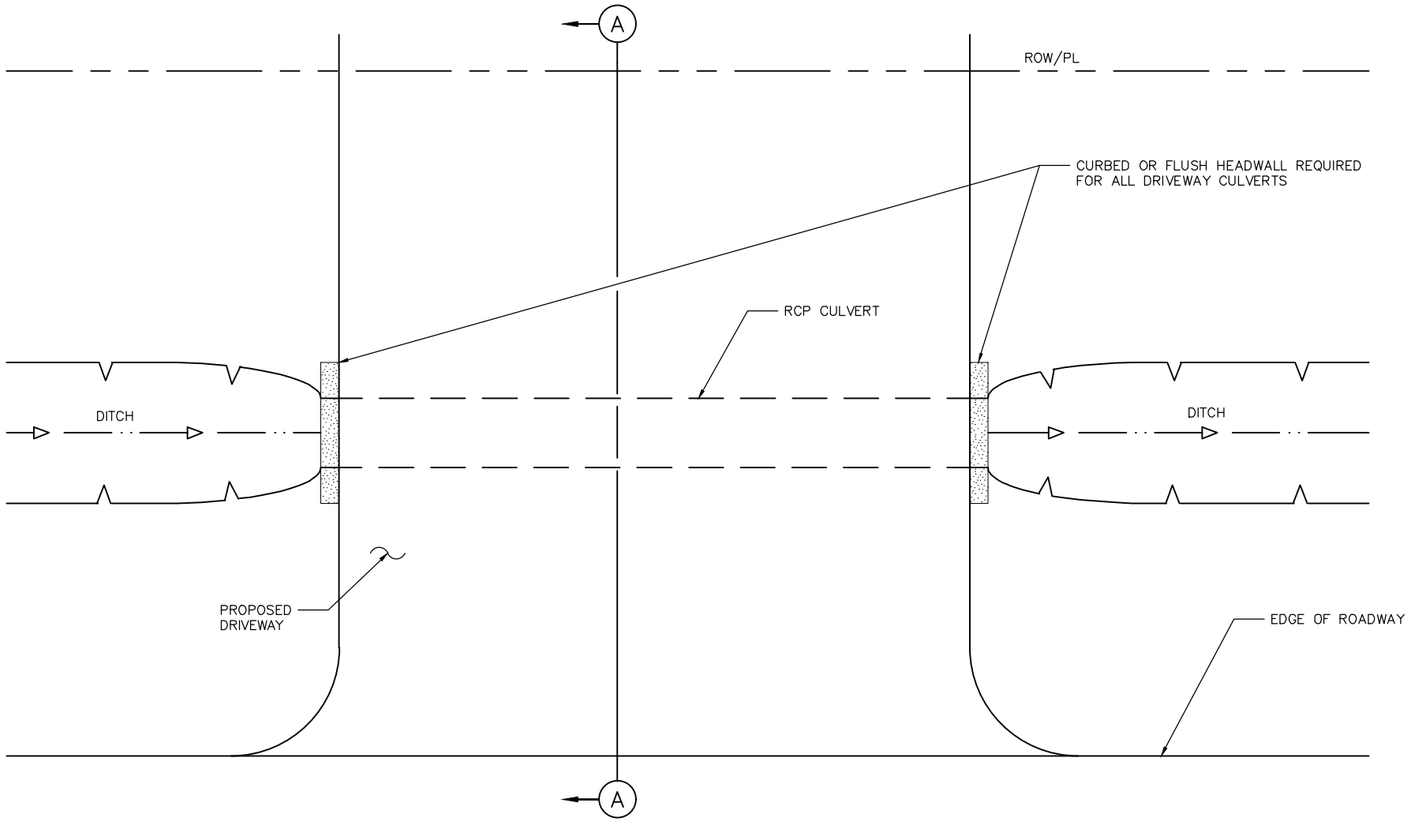
DRIVEWAY DETAIL WITH 6IN CURBED STREETS

(SCALE: NOT TO SCALE)

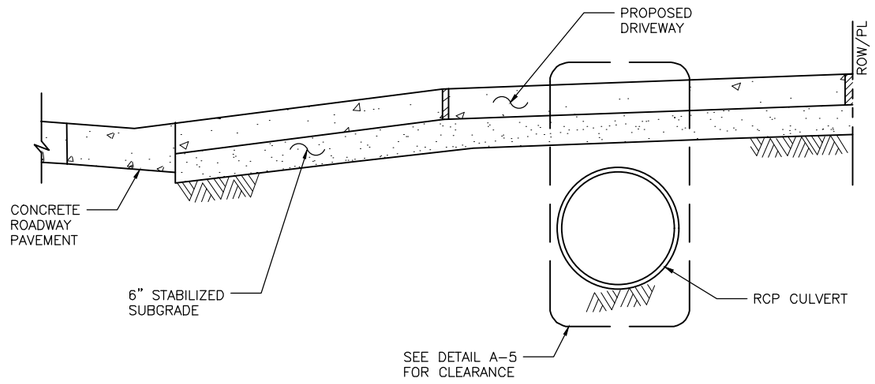
APPROVED BY:

CITY ENGINEER

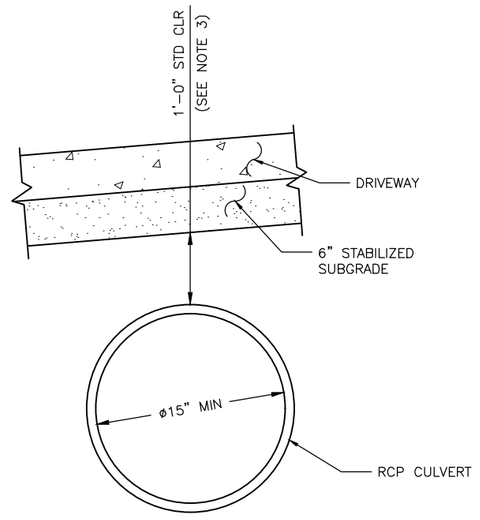
EFF DATE: NOVEMBER 2024 | DWG NO: 02775–02




PLAN VIEW
STANDARD OPEN DITCH DRIVEWAY




SECTION A–A
STANDARD PIPE CULVERT CLEARANCE




DETAIL A–5
CULVERT CLEARANCE

## NOTES:

1. RCP CULVERT SIZE WILL BE APPROVED BY CITY ENGINEER WITH 15" DIAMETER MINIMUM.
2. DRIVEWAY MATERIAL WITHIN THE RIGHT OF WAY SHALL BE CONCRETE OR ASPHALT.
3. WHERE STANDARD 1'–0" CLEARANCE IS NOT FEASIBLE, MINIMUM CLEARANCE OF 6" IS ALLOWED WHEN APPROVED BY THE OFFICE OF THE CITY ENGINEER (OCE).
4. DITCH FLOW LINE DIRECTION DEPICTED IS SHOWN AS AN EXAMPLE AND MAY NOT MATCH SITE SPECIFIC CONDITIONS. REFER TO CONTRACT DRAWINGS FOR FLOW LINE DIRECTION AND ELEVATIONS.

CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

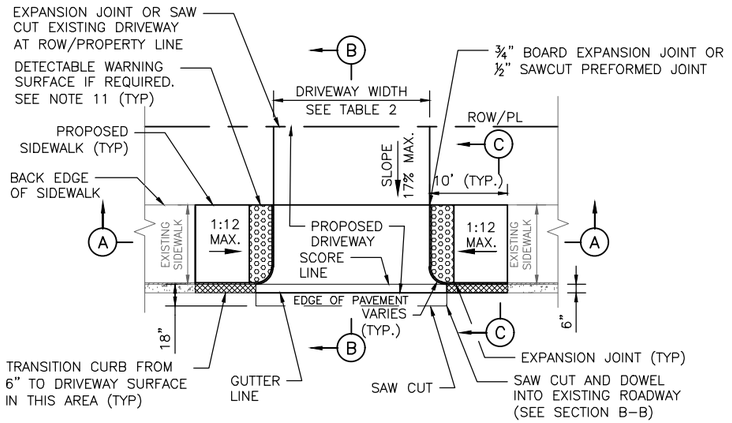
# DRIVEWAYS WITH CULVERTS ON OPEN DITCH TYPE STREETS

(SCALE: NOT TO SCALE)

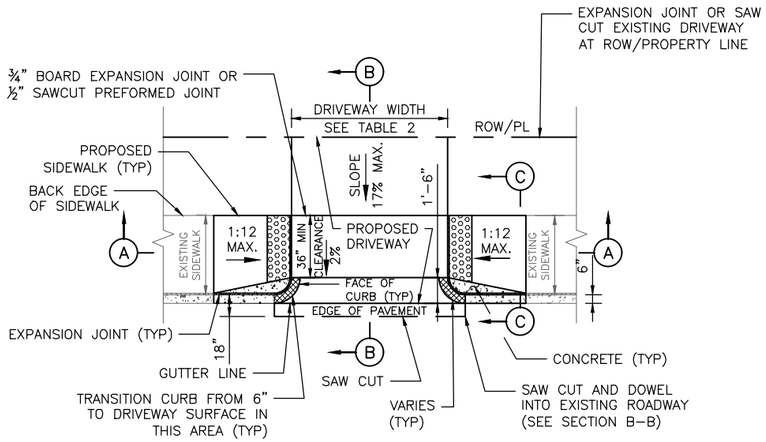
APPROVED BY:

CITY ENGINEER

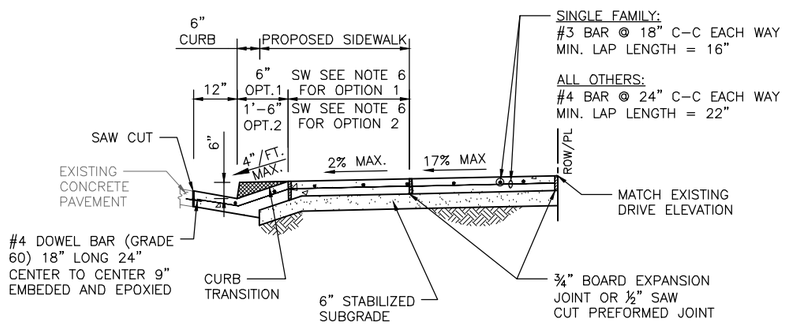
EFF DATE: NOVEMBER 2024 | DWG NO: 02775–03



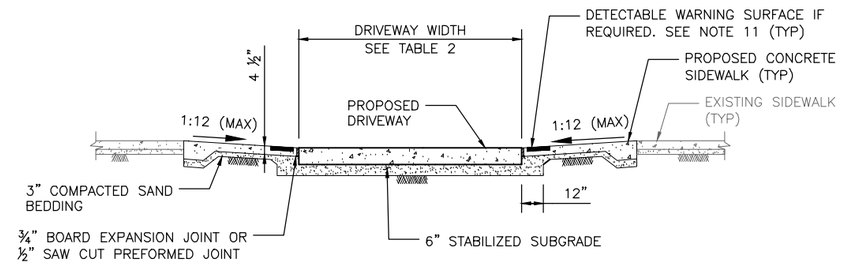

## OPTION 1 – CURB LEVEL SIDEWALK
## PLAN VIEW – DRIVEWAY WITHOUT CURB AT CURB RETURN



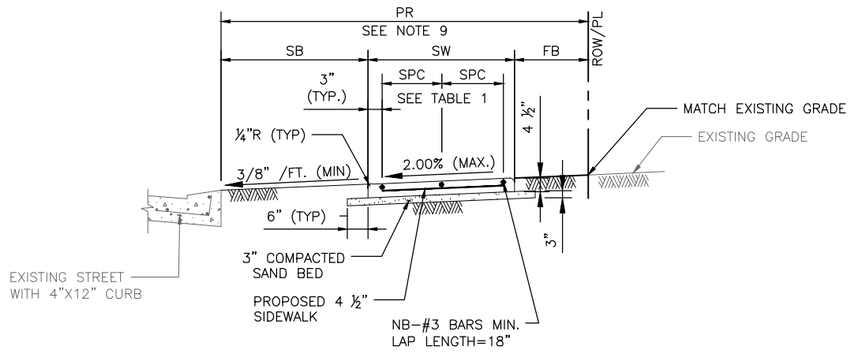

## OPTION 2 – CURB LEVEL SIDEWALK
## PLAN VIEW – DRIVEWAY WITH CURB AT CURB RETURN




## SECTION B–B
## TYPICAL DRIVEWAY SECTION THROUGH DRIVEWAY




## SECTION A–A
## PROPOSED SIDEWALK THROUGH DRIVEWAY




## SECTION C–C
## TYPICAL SIDEWALK SECTION

## TABLE 1

REINFORCING STEEL INFORMATION
FOR 4 ½ " THICK SIDEWALKS
EXPANSION JOINT SPACING = 40 FT
fc' = 3,500 PSI AND fy = 60,000 PSI
REFER TO CONTRACT DRAWINGS FOR SIDEWALKS WIDER THAN 6 FEET.

| SIDEWALK THICKNESS (IN) | SIDEWALK WIDTH (FT) | LONGITUDINAL STEEL | | | TRANSVERSE STEEL #3 BARS SPACING (IN) |
|---|---|---|---|---|---|
| | | #3 BARS | | | |
| | | NO. OF BARS "NB" | SPACING "SPC" (IN) | END BAR SPACING (IN) | |
| 4 1/2 | 5 | 3 | 27 | 3 | 48 |
| 4 1/2 | 6 | 4 | 22 | 3 | 48 |

## TABLE 2

| DRIVEWAY DESIGN CRITERIA | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TRAFFIC TYPE | TYPE A DRIVEWAY (FOR SINGLE FAMILY RESIDENTIAL HOUSES OR DUPLEXES) | | | | TYPE B DRIVEWAY (SHARED ACCESS/SHARED DRIVEWAY) | | | | TYPE C DRIVEWAY (COMMERCIAL DRIVEWAY) | | | |
| | WIDTH (FT) | | RADIUS (FT) | | WIDTH (FT) | | RADIUS (FT) | | WIDTH (FT) | | RADIUS (FT) | |
| | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX |
| ONE–WAY | 10 | 12 | 4 | 10 | 12(2) | 16(2) | 4(2) | 10(2) | 15 | 20 | 10 | 20 |
| TWO–WAY | 10(1) | 24 | 4 | 10 | 16 | 24 | 4 | 10 | 24 | 35 | 10 | 20 |

(1) THE MINIMUM WIDTH FOR JOINT ACCESS DRIVEWAY IS 12 FT.
(2) ONLY MURS AND COURTYARD STYLE DEVELOPMENTS ON CORNER LOTS CAN HAVE ONE–WAY DRIVEWAYS.

## NOTES:

1. REPAIR, RECONSTRUCTION OR REPLACEMENT OF SIDEWALKS SHALL MEET PERMITTING REQUIREMENTS.
2. FOR REPAIR, RECONSTRUCTION, OR REPLACEMENT OF EXISTING SIDEWALKS:
   - 2.1. EXISTING SIDEWALKS LESS THAN OR EQUAL TO 20 FEET IN TOTAL LENGTH:
     - 2.1.1. THE PROPOSED SIDEWALK WIDTH WILL BE ALLOWED TO MATCH THE EXISTING SIDEWALK.
   - 2.2. EXISTING SIDEWALKS GREATER THAN 20 FEET IN TOTAL LENGTH:
     - 2.2.1. THE SIDEWALK WIDTH FOR THE ENTIRE PROPERTY WIDTH SHALL BE IMPROVED TO MEET WIDTH REQUIREMENTS.
   - 2.3. 20 FOOT TOTAL LENGTH IS DEFINED AS:
     - 2.3.1. UP TO 10 FEET ON BOTH SIDES OF THE DRIVEWAY; OR
     - 2.3.2. UP TO 20 FEET WHEN SIDEWALK AFFECTED IS LOCATED ONLY ON ONE SIDE OF THE DRIVEWAY.
3. PROPOSED SIDEWALKS THAT DO NOT FALL WITHIN THE SCOPE DEFINED IN NOTE 2 SHALL BE CONSTRUCTED ACCORDING TO THE CONTRACT DRAWINGS.
4. DRIVEWAY WIDTH VARIES TO MATCH EXISTING DRIVE.
5. DRIVEWAY DETAIL TO PROVIDE FOR SIDEWALK TRANSITION FROM EXISTING BACK OF CURB TO PROPOSED DRIVEWAY EDGE.
6. DRIVEWAY WITH WIDTH >5' @ 2% CROSS SLOPE QUALIFIES AS PASSING SPACE. (SEE OPTION 1 AND OPTION 2 PLANS)
7. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF CLEAR LAKE SHORES STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
8. CURB RAMPS THAT ARE STEEPER THAN A 1:12 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF CLEAR LAKE SHORES.
9. REFER TO CONTRACT DRAWINGS FOR PEDESTRIAN REALM (PR), SIDEWALK (SW), FRONTAGE BUFFER (FB), AND SAFETY BUFFER (SB) WIDTHS.
10. DRIVEWAYS SHALL BE MINIMUM 6" THICK FOR SINGLE FAMILY AND DUPLEXES. DRIVEWAYS SHALL BE MINIMUM 7" THICK FOR ALL OTHERS (I.E. COMMERCIAL, INDUSTRIAL, ETC.)
11. DETECTABLE WARNING SURFACES:
    - 11.1. SIDEWALK SHALL HAVE A DETECTABLE WARNING SURFACE WHERE:
      - 11.1.1. SIDEWALK INTERSECTS TYPE C DRIVEWAYS (COMMERCIAL DRIVEWAYS) THAT ARE STOP, YIELD OR TRAFFIC SIGNAL CONTROLLED; OR
      - 11.1.2. SIDEWALK SLOPE IS GREATER THAN 1:20 AND INTERSECTS A TYPE C DRIVEWAY (COMMERCIAL DRIVEWAY)
    - 11.2. DETECTABLE WARNING SURFACES ARE OPTIONAL WHERE SIDEWALKS INTERSECT TYPE A DRIVEWAYS (SINGLE FAMILY RESIDENTIAL HOUSES OR DUPLEXES) OR TYPE B DRIVEWAYS (SHARED ACCESS/SHARED DRIVEWAYS).
    - 11.3. REFER TO STANDARD DETAILS 02771–06 TO 02771–07 FOR DETECTABLE WARNING SURFACE STANDARDS.

CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

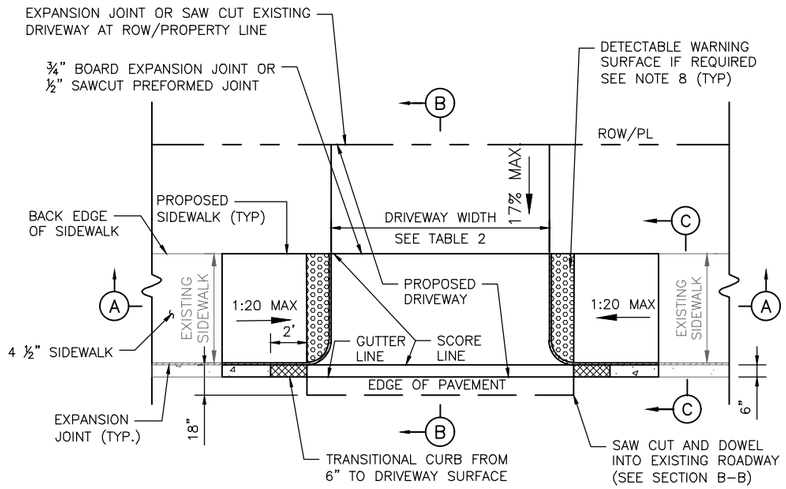
# SIDEWALK THROUGH DRIVEWAY WITH EXCESSIVE ELEVATION DIFFERENCE

(SCALE: NOT TO SCALE)

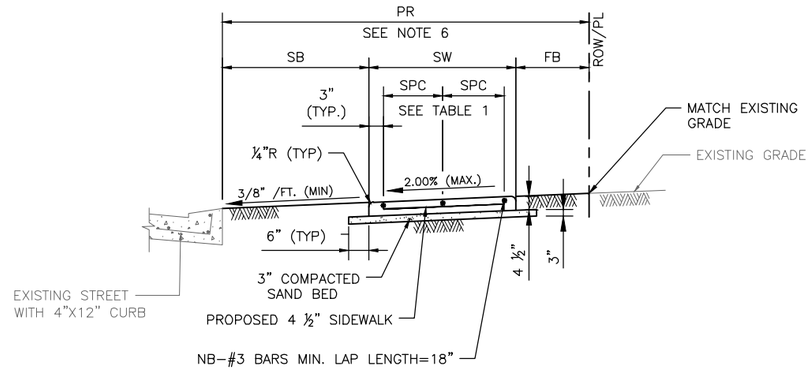
APPROVED BY:

CITY ENGINEER

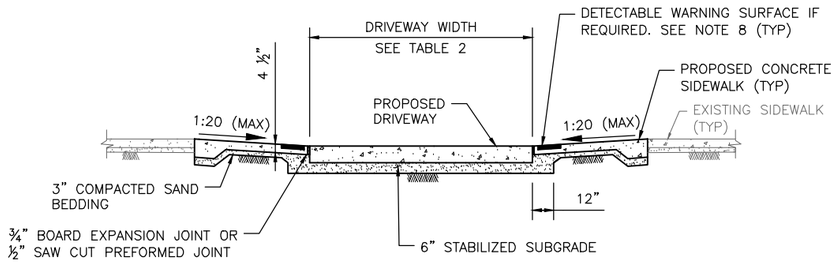
EFF DATE: NOVEMBER 2024 | DWG NO: 02775–04



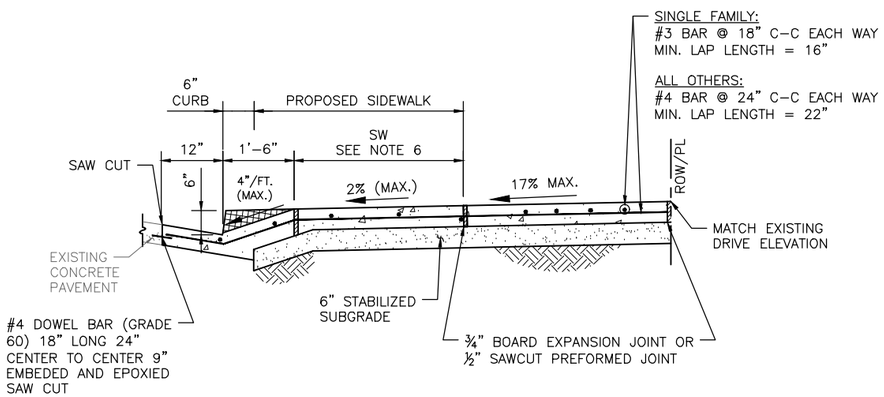

## PLAN VIEW – DRIVEWAY




## SECTION C–C
## TYPICAL SIDEWALK SECTION




## SECTION A–A
## PROPOSED SIDEWALK THROUGH DRIVEWAY




## SECTION B–B
## TYPICAL DRIVEWAY SECTION

## TABLE 1

REINFORCING STEEL INFORMATION
FOR 4 ½ " THICK SIDEWALKS
EXPANSION JOINT SPACING = 40 FT
fc' = 3,500 PSI AND fy = 60,000 PSI
REFER TO CONTRACT DRAWINGS FOR SIDEWALKS WIDER THAN 6 FEET.

| SIDEWALK THICKNESS (IN) | SIDEWALK WIDTH (FT) | LONGITUDINAL STEEL | | | TRANSVERSE STEEL #3 BARS SPACING (IN) |
|---|---|---|---|---|---|
| | | #3 BARS | | | |
| | | NO. OF BARS "NB" | SPACING "SPC" (IN) | END BAR SPACING (IN) | |
| 4.5 | 5 | 3 | 27 | 3 | 48 |
| 4.5 | 6 | 4 | 22 | 3 | 48 |

## TABLE 2

DRIVEWAY DESIGN CRITERIA

| TRAFFIC TYPE | TYPE A DRIVEWAY (FOR SINGLE FAMILY RESIDENTIAL HOUSES OR DUPLEXES) | | | | TYPE B DRIVEWAY (SHARED ACCESS/SHARED DRIVEWAY) | | | | TYPE C DRIVEWAY (COMMERCIAL DRIVEWAY) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | WIDTH (FT) | | RADIUS (FT) | | WIDTH (FT) | | RADIUS (FT) | | WIDTH (FT) | | RADIUS (FT) | |
| | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX |
| ONE–WAY | 10 | 12 | 4 | 10 | 12(2) | 16(2) | 4(2) | 10(2) | 15 | 20 | 10 | 20 |
| TWO–WAY | 10(1) | 24 | 4 | 10 | 16 | 24 | 4 | 10 | 24 | 35 | 10 | 20 |

(1) THE MINIMUM WIDTH FOR JOINT ACCESS DRIVEWAY IS 12 FT.
(3) ONLY MURS AND COURTYARD STYLE DEVELOPMENTS ON CORNER LOTS CAN HAVE ONE–WAY DRIVEWAYS.

## NOTES:

1. REPAIR, RECONSTRUCTION OR REPLACEMENT OF SIDEWALKS SHALL MEET PERMITTING REQUIREMENTS.
2. FOR REPAIR, RECONSTRUCTION, OR REPLACEMENT OF EXISTING SIDEWALKS:
   - 2.1. EXISTING SIDEWALKS LESS THAN OR EQUAL TO 20 FEET IN TOTAL LENGTH:
     - 2.1.1. THE PROPOSED SIDEWALK WIDTH WILL BE ALLOWED TO MATCH THE EXISTING SIDEWALK.
   - 2.2. EXISTING SIDEWALKS GREATER THAN 20 FEET IN TOTAL LENGTH:
     - 2.2.1. THE SIDEWALK WIDTH FOR THE ENTIRE PROPERTY WIDTH SHALL BE IMPROVED TO MEET WIDTH REQUIREMENTS.
   - 2.3. 20 FOOT TOTAL LENGTH IS DEFINED AS:
     - 2.3.1. UP TO 10 FEET ON BOTH SIDES OF THE DRIVEWAY; OR
     - 2.3.2. UP TO 20 FEET WHEN SIDEWALK AFFECTED IS LOCATED ONLY ON ONE SIDE OF THE DRIVEWAY.
3. PROPOSED SIDEWALKS THAT DO NOT FALL WITHIN THE SCOPE DEFINED IN NOTE 2 SHALL CONSTRUCTED ACCORDING TO THE CONTRACT DRAWINGS.
4. ALL RAMPS AND SIDEWALKS/WALKWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF CLEAR LAKE SHORES STANDARDS, TEXAS ACCESSIBILITY STANDARDS (TAS) AND AMERICANS WITH DISABILITIES ACT (ADA) REQUIREMENTS. IF THERE IS A CONFLICT IN THE REQUIREMENTS, THE STRICTEST REQUIREMENTS SHALL GOVERN.
5. CURB RAMPS THAT ARE STEEPER THAN A 1:20 MAX SLOPE WILL NOT BE ACCEPTED BY THE CITY OF CLEAR LAKE SHORES.
6. REFER TO CONTRACT DRAWINGS FOR PEDESTRIAN REALM (PR), SIDEWALK (SW), FRONTAGE BUFFER (FB), AND SAFETY BUFFER (SB) WIDTHS.
7. DRIVEWAYS SHALL BE MINIMUM 6" THICK FOR SINGLE FAMILY AND DUPLEXES. DRIVEWAYS SHALL BE MINIMUM 7" THICK FOR ALL OTHERS (I.E. COMMERCIAL, INDUSTRIAL, ETC.)
8. DETECTABLE WARNING SURFACES:
   - 8.1. SIDEWALK SHALL HAVE A DETECTABLE WARNING SURFACE WHERE SIDEWALK INTERSECTS TYPE C DRIVEWAYS (COMMERCIAL DRIVEWAYS) THAT ARE STOP, YIELD, OR TRAFFIC SIGNAL CONTROLLED.
   - 8.2. DETECTABLE WARNING SURFACES ARE OPTIONAL WHERE SIDEWALKS INTERSECT TYPE A DRIVEWAYS (SINGLE FAMILY RESIDENTIAL HOUSES OR DUPLEXES) OR TYPE B DRIVEWAYS (SHARED ACCESS/SHARED DRIVEWAYS).
   - 8.3. REFER TO STANDARD DETAILS 02771–06 TO 02771–07 FOR DETECTABLE WARNING SURFACE STANDARDS.

CITY OF
# CLEAR LAKE SHORES
ROAD AND DRAINAGE STANDARDS

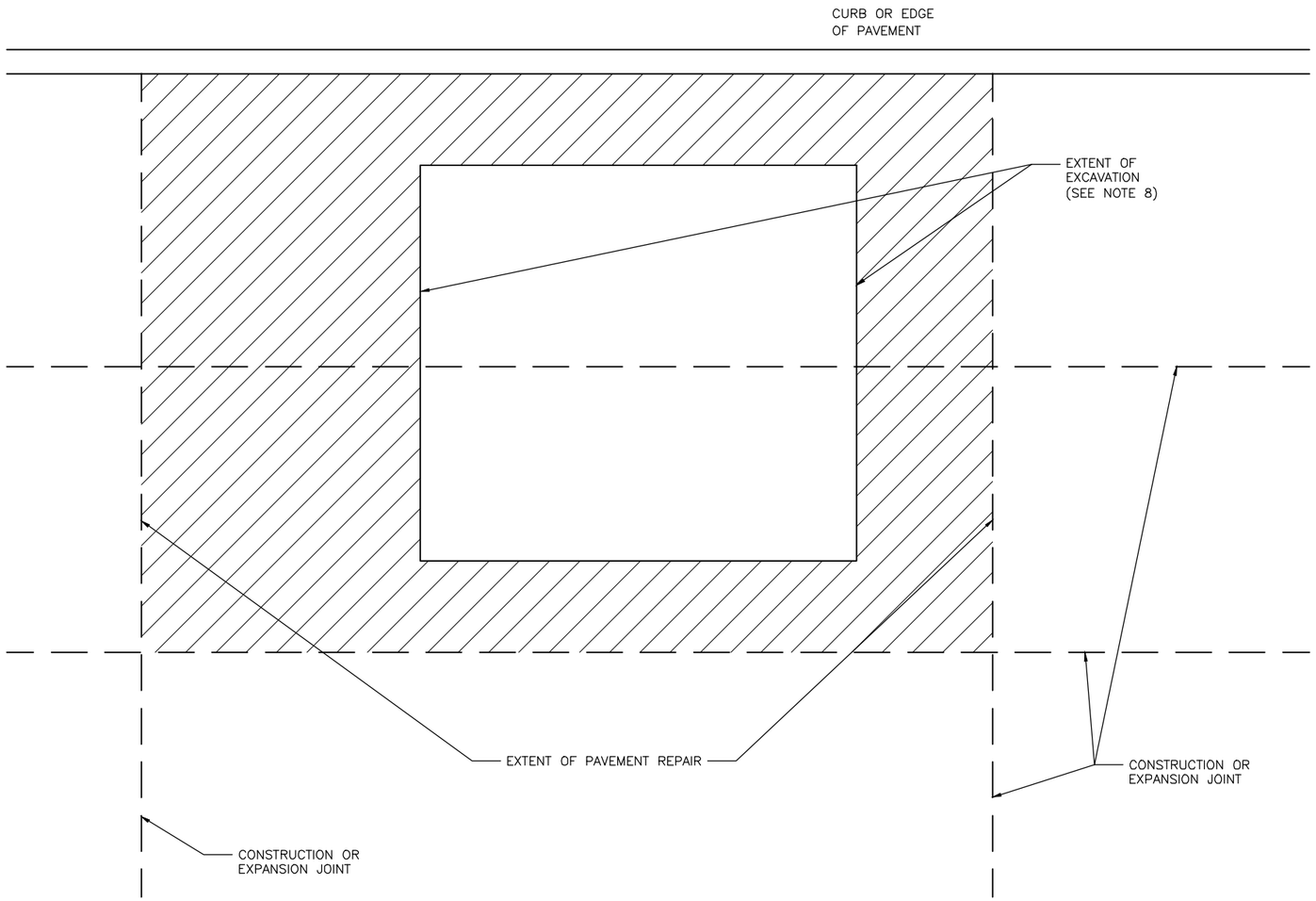
## SIDEWALK THROUGH DRIVEWAY WITH MINIMAL ELEVATION DIFFERENCE

(SCALE: NOT TO SCALE)

APPROVED BY:

CITY ENGINEER

EFF DATE: NOVEMBER 2024 | DWG NO: 02775–05




## NOTES:

1. EXTENT OF PAVEMENT REPAIR SHALL BE PERPENDICULAR AND PARALLEL TO TRAVEL WAY.
2. REPLACE ENTIRE PANEL WIDTH AND LENGTH TO NEAREST CONSTRUCTION OR EXPANSION JOINT BEYOND EDGE OF EXCAVATION.
3. SAW CUT AND EXPOSE 15" OF REINFORCING STEEL WITHIN EXISTING PAVEMENT. PROVIDE HORIZONTAL DOWELS (PER SPECIFICATION SECTION 02980–PAVEMENT REPAIR AND RESTORATION) IF EXISTING REINFORCING IS BROKEN OFF.
4. REPLACE CURB WHEN ADJACENT LANE IS REPLACED.
5. MAINTAIN EXPANSION JOINTS AT EXISTING LOCATIONS UNLESS OTHERWISE DIRECTED BY CITY ENGINEER.
6. SPECIALTY PAVEMENTS (IE: BRICK PAVERS) TO BE REPLACED WITH MATCHING PAVEMENT IN ALL CASES.
7. REPLACE PAVEMENT MARKINGS IN ACCORDANCE WITH CITY OF CLEAR LAKE SHORES STANDARD SPECIFICATIONS 02762–RAISED PAVEMENT MARKERS AND 02585–THERMOPLASTIC PAVEMENT MARKINGS.
8. EXTENT OF EXCAVATION INCLUDES 18" OVERCUT AS SHOWN ON STANDARD DETAIL 02980–04 PAVEMENT REPAIR DETAIL FOR STREET CUTS (FLEX–BASE PAVEMENT & CONCRETE PAVEMENT).

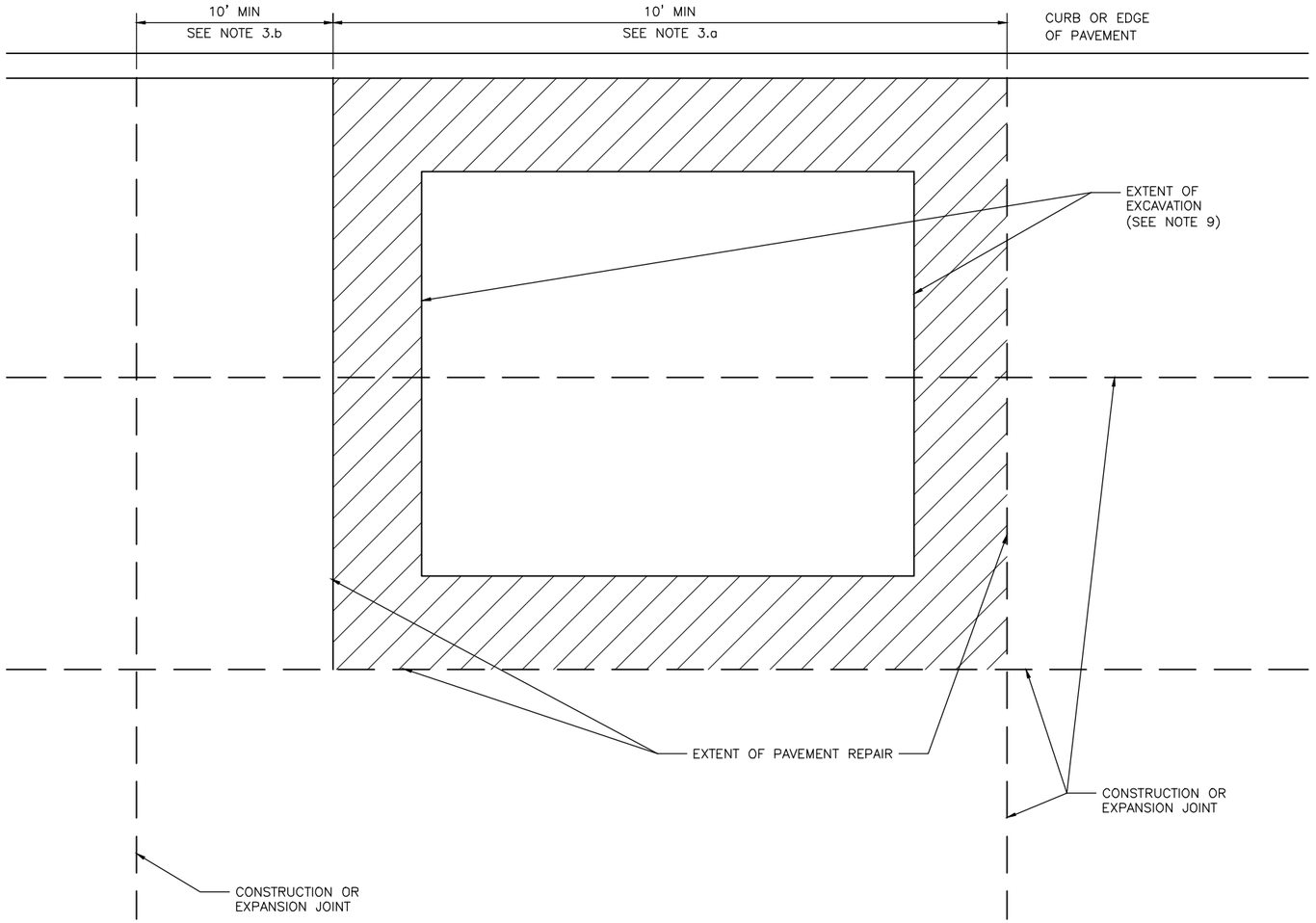
CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

STREET CUT FOR CONCRETE PAVEMENT REPLACEMENT/RESTORATION AGE OF PAVEMENT ≤ 5YRS
(SCALE: NOT TO SCALE)

APPROVED BY:

CITY ENGINEER

EFF DATE: NOVEMBER 2024 | DWG NO: 02980–01




## NOTES:

1. EXTENT OF PAVEMENT REPAIR SHALL BE PERPENDICULAR AND PARALLEL TO TRAVEL WAY.
2. WIDTH:
   REPLACE PANEL WIDTH TO NEAREST CONSTRUCTION OR EXPANSION JOINT BEYOND EDGE OF EXCAVATION.
3. LENGTH:
   a. MINIMUM LENGTH OF PAVEMENT REPAIR ALONG TRAVEL WAY IS 10' FROM THE NEAREST JOINT.
   b. IF EXTENT OF PAVEMENT REPAIR IS LESS THAN 10' FROM EXISTING CONSTRUCTION OR EXPANSION JOINT, EXTEND PAVEMENT REPAIR TO EXISTING JOINT.
4. SAW CUT AND EXPOSE 15" OF REINFORCING STEEL AROUND EDGE OF PANEL REPLACEMENT. PROVIDE HORIZONTAL DOWELS (PER SPECIFICATION SECTION 02980–PAVEMENT REPAIR AND RESTORATION) IF REINFORCING IS BROKEN OFF OR DOES NOT EXIST.
5. REPLACE CURB WHEN ADJACENT LANE IS REPLACED.
6. MAINTAIN EXPANSION JOINTS AT EXISTING LOCATIONS UNLESS OTHERWISE DIRECTED BY CITY ENGINEER.
7. SPECIALTY PAVEMENTS (IE: BRICK PAVERS) TO BE REPLACED WITH MATCHING PAVEMENT IN ALL CASES.
8. REPLACE PAVEMENT MARKINGS IN ACCORDANCE WITH CITY OF HOUSTON STANDARD SPECIFICATIONS 02762–RAISED PAVEMENT MARKERS AND 02585–THERMOPLASTIC PAVEMENT MARKINGS.
9. EXTENT OF EXCAVATION INCLUDES 18" OVERCUT AS SHOWN ON STANDARD DETAIL 02980–04 PAVEMENT REPAIR DETAIL FOR STREET CUTS (FLEX–BASE PAVEMENT & CONCRETE PAVEMENT).

CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

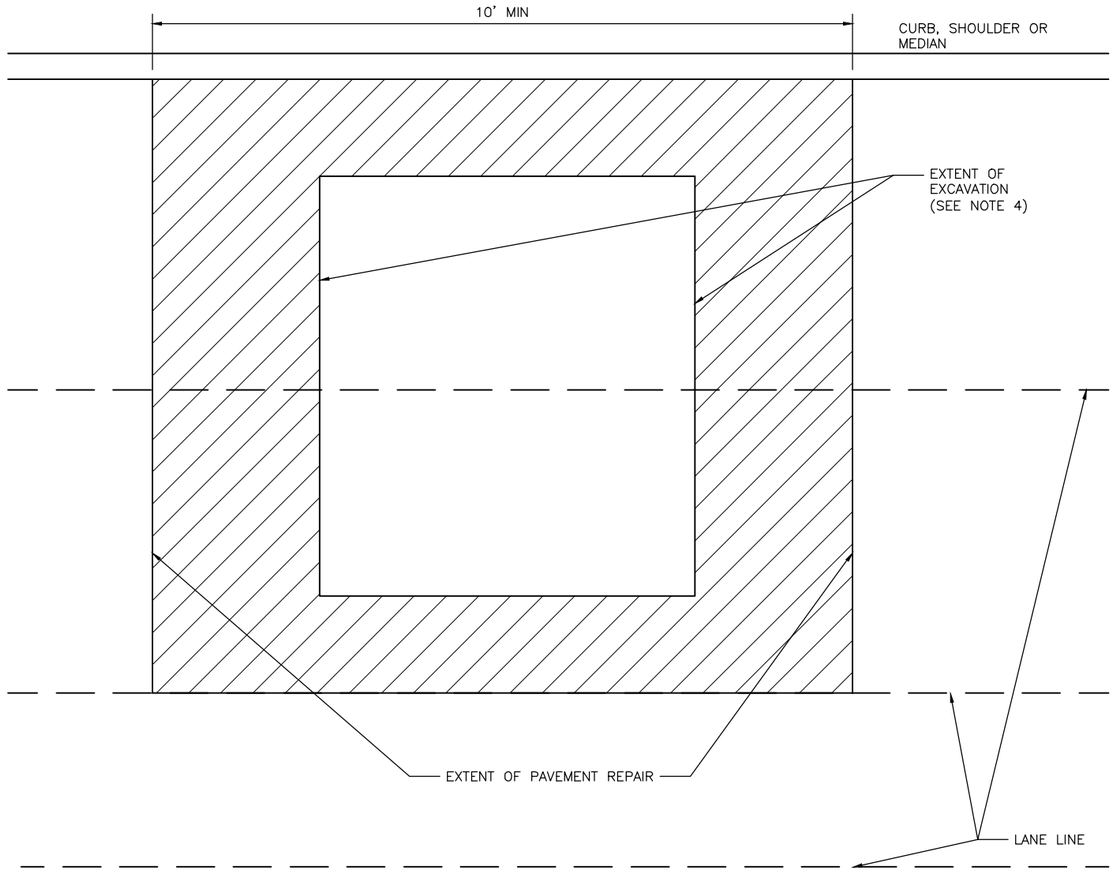
# STREET CUT FOR CONCRETE PAVEMENT REPLACEMENT/RESTORATION AGE OF PAVEMENT > 5YRS

(SCALE: NOT TO SCALE)

APPROVED BY:

CITY ENGINEER

EFF DATE: NOVEMBER 2024 | DWG NO: 02980–02




## NOTES:

1. EXTENT OF PAVEMENT REPAIR SHALL BE PERPENDICULAR AND PARALLEL TO TRAVEL WAY.
2. FLEXIBLE BASE: REPLACE BASE TO SAME THICKNESS PLUS TWO INCHES (2") FOR EXTENT OF EXCAVATION. USE APPROVED BASE MATERIAL TYPE.*
3. SURFACE COURSE:
   - 3.1. WIDTH:
     SURFACE MILL AND OVERLAY FULL WIDTH OF LANE(S) TO NEAREST LANE DIVIDER BEYOND EDGE OF EXCAVATION.
   - 3.2. LENGTH:
     MINIMUM LENGTH OF SURFACE MILL ALONG TRAVEL WAY IS 10'.
   - 3.3. REPLACE PAVEMENT MARKINGS IN ACCORDANCE WITH CITY OF HOUSTON STANDARD SPECIFICATIONS 02762–RAISED PAVEMENT MARKERS AND 02585–THERMOPLASTIC PAVEMENT MARKINGS.
4. EXTENT OF EXCAVATION INCLUDES 18" OVER CUT AS SHOWN ON STANDARD DETAIL 02980–04 PAVEMENT REPAIR DETAIL FOR STREET CUTS (FLEX–BASE PAVEMENT AND CONCRETE PAVEMENT).
5. ADDITIONAL REQUIREMENTS FOR ASPHALT OVERLAY ON CONCRETE PAVEMENT:
   - 5.1. REPLACE CONCRETE FOR EXTENT OF EXCAVATION. REPLACE TO SAME THICKNESS PLUS TWO INCHES (2").
   - 5.2. WIDTH:
     - 5.2.1. IF EXCAVATION EXTENDS MORE THAN HALF OF A LANE, REPLACE ENTIRE LANE OF CONCRETE. OTHERWISE USE STANDARD DETAIL 02980–04 THROUGH 02980–05.
   - 5.3. SAW CUT AND EXPOSE 15" OF REINFORCING STEEL AROUND EDGE OF CONCRETE REPLACEMENT. IF NO REINFORCING STEEL EXISTS, USE HORIZONTAL DOWELS PER CITY OF HOUSTON STANDARD SPECIFICATION SECTION 02980–PAVEMENT REPAIR AND RESTORATION.
   - 5.4. REPLACE CURB WHEN ADJACENT LANE IS REPLACED.
   - 5.5. MAINTAIN CONCRETE EXPANSION JOINTS AT EXISTING LOCATIONS UNLESS OTHERWISE APPROVED BY CITY ENGINEER.

CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

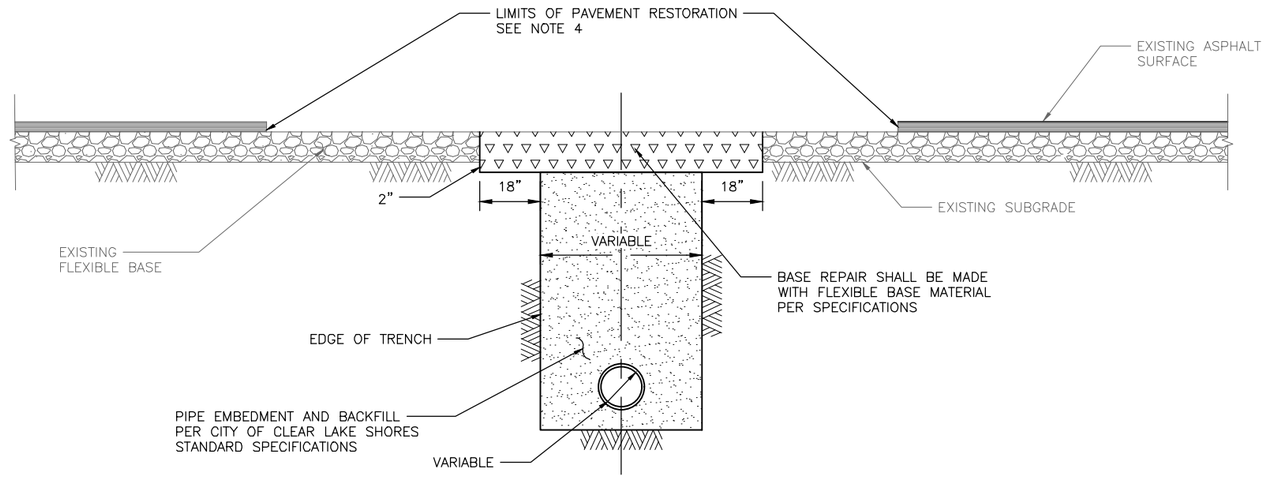
# STREET CUT FOR ASPHALT PAVEMENT REPLACEMENT OR RESTORATION FOR PAVEMENT OF ALL AGES

(SCALE: NOT TO SCALE)

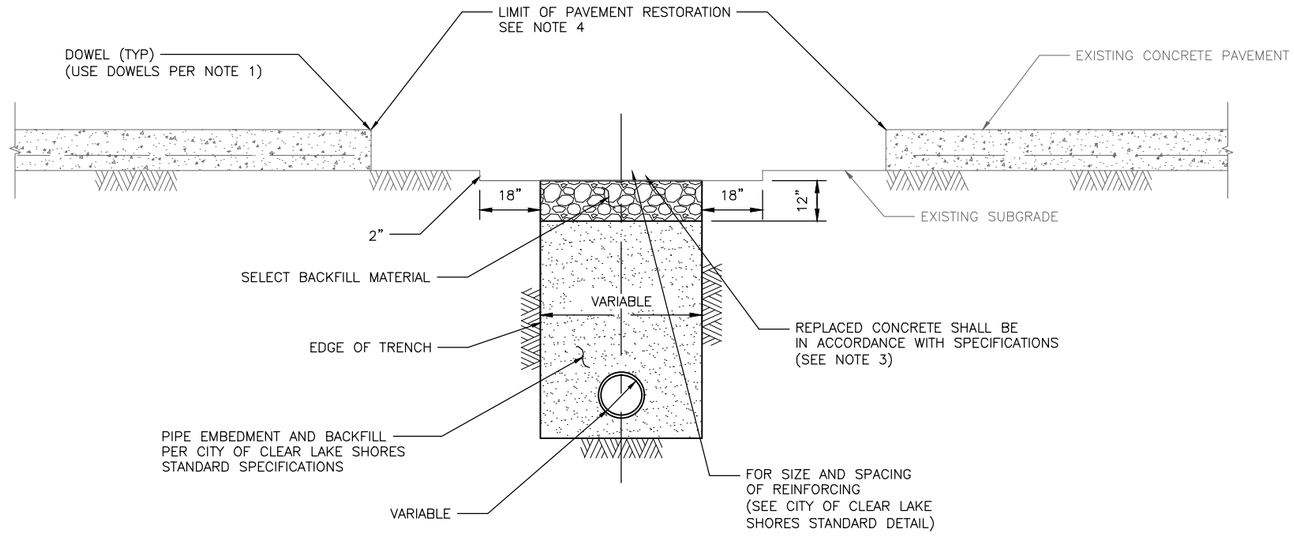
APPROVED BY:

CITY ENGINEER

EFF DATE: NOVEMBER 2024 | DWG NO: 02980–03




ELEVATION A
REPAIR OF FLEXIBLE BASE PAVEMENT




ELEVATION B
REPAIR OF REINFORCED CONCRETE PAVEMENT

## NOTES:

1. EXPOSE 15" OF REINFORCING STEEL AT PROPOSED SAWED JOINT. IF NO REINFORCING STEEL EXISTS, USE HORIZONTAL DOWELS. HORIZONTAL DOWELS SHALL BE #6 BAR, 24" LONG, 24" C–C, DRILLED AND EMBEDDED 8" INTO THE CENTER OF THE EXISTING SLAB. WITH "PO ROC" OR EQUAL.
2. IF REINFORCED CONCRETE IS OVERLAYED WITH ASPHALT, REPLACE WITH 2" MIN HMAC SURFACING.
3. REFER TO STANDARD DETAIL 02751–01 FOR REINFORCING STEEL REQUIREMENTS.
4. REFER TO STANDARD DETAIL 02980–01 THROUGH 02980–03 FOR PAVEMENT RESTORATION LIMITS.

CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

# PAVEMENT REPAIR DETAIL FOR STREET CUTS

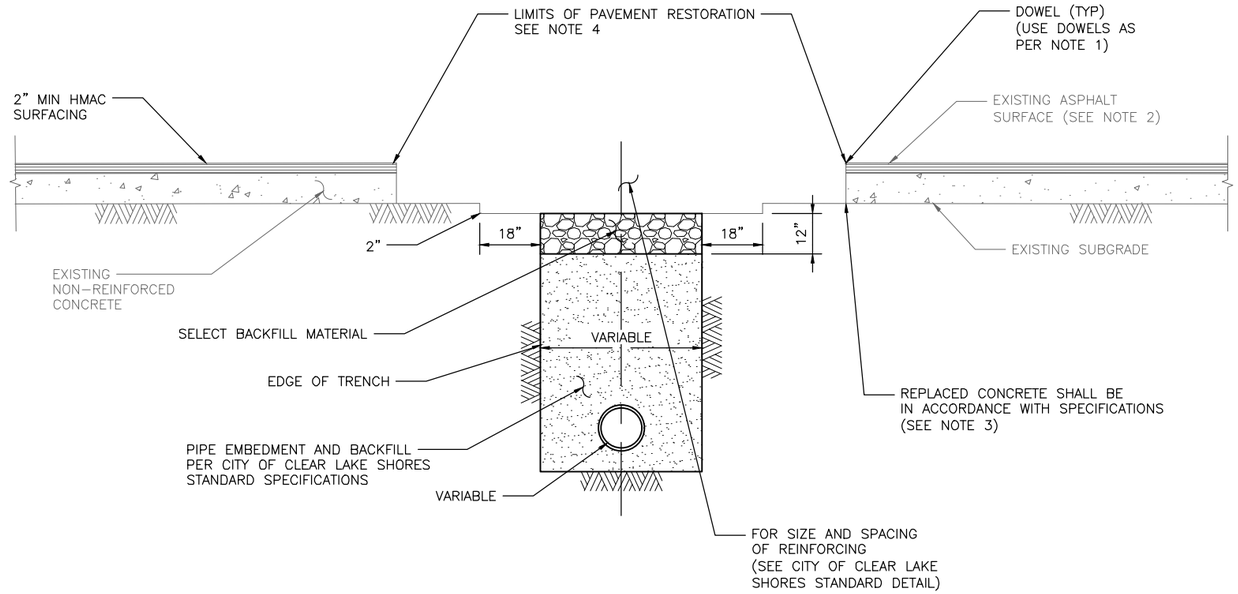
(FLEX–BASE PAVEMENT & CONCRETE PAVEMENT)

(SCALE: NOT TO SCALE)

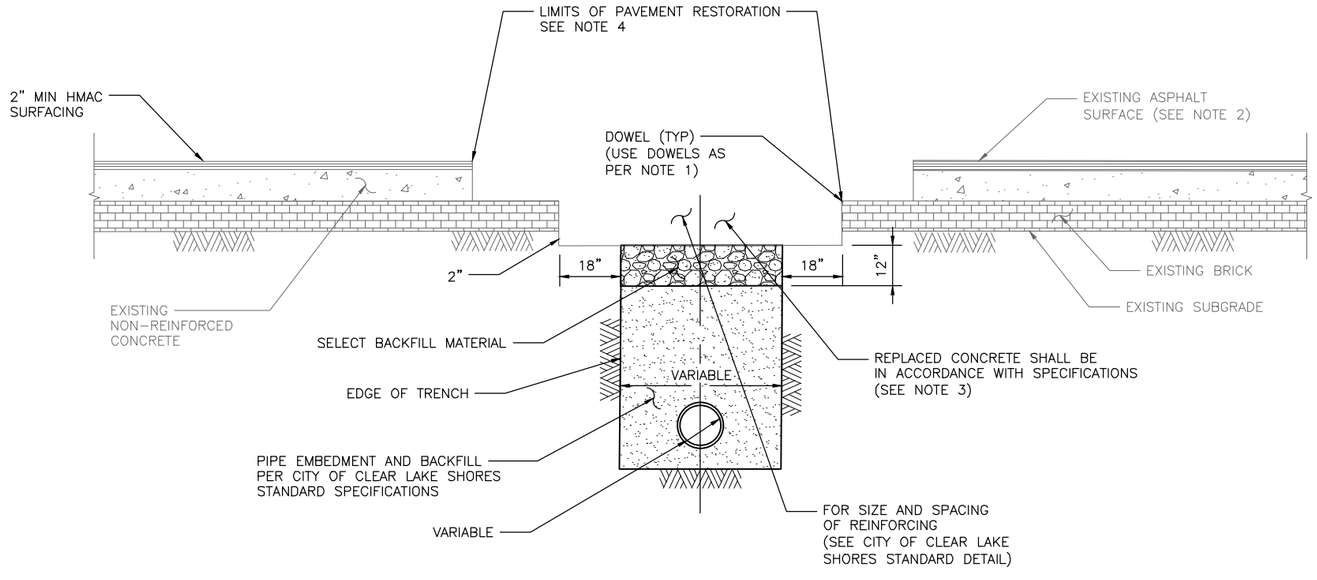
APPROVED BY:

CITY ENGINEER

EFF DATE: NOVEMBER 2024 | DWG NO: 02980–04




ELEVATION C
REPAIR OF NON–REINFORCED CONCRETE PAVEMENT




ELEVATION D
REPAIR OF NON–REINFORCED CONCRETE PAVEMENT WITH BRICK

## NOTES:

1. EXPOSE 15" OF REINFORCING STEEL AT PROPOSED SAWED JOINT. IF NO REINFORCING STEEL EXISTS, USE HORIZONTAL DOWELS. HORIZONTAL DOWELS SHALL BE #6 BAR, 24" LONG, 24" C–C, DRILLED AND EMBEDDED 8" INTO THE CENTER OF THE EXISTING SLAB. WITH "PO ROC" OR EQUAL.
2. IF REINFORCED CONCRETE IS OVERLAYED REPLACE WITH SAME THICKNESS OF HMAC SURFACING.
3. REFER TO STANDARD DETAIL 02751–01 FOR REINFORCING STEEL REQUIREMENT
4. REFER TO STANDARD DETAILS 02980–01 THROUGH 02980–03 FOR PAVEMENT RESTORATION LIMITS.

CITY OF
**CLEAR LAKE SHORES**
ROAD AND DRAINAGE STANDARDS

# PAVEMENT REPAIR DETAIL FOR STREET CUTS

(NON–REINFORCED CONCRETE & BRICK PAVEMENT)

(SCALE: NOT TO SCALE)

APPROVED BY:

CITY ENGINEER

EFF DATE: NOVEMBER 2024 | DWG NO: 02980–05