



COLLIN COUNTY, TEXAS

ADDENDUM No. Two (2)

IFB NO. 2014-261

INVITATION FOR BIDS
FOR

Construction, Collin County Walking Trail

DATE: August 7, 2014

NOTICE TO ALL PROSPECTIVE BIDDERS:

YOU ARE HEREBY DIRECTED TO MAKE CHANGES TO THE INVITATION FOR BIDS IN ACCORDANCE WITH THE ATTACHED INFORMATION.

ADD: Pre-bid Attendance Sign-in Sheet
Walkthrough Attendance Sign-in Sheet
Architect/Engineer's Addendum 2 Information and the Following Attachments:
Admin Utilities and Irrigation
Bridge Guardrail Detail
Bridge Guardrail elevation
CH Sidewalk w/Bollard
Circuit Routing to Electric Room
McKinney Sidewalk Standards
Memorial Plaque Wall Layout
Ramp Handrail Detail
Removable Bollard Details
Section 002900 Planting
Sheet C4 Ex Walk Location Revision
Tregator Specification
TxDOT Curb Ramp Details

PLEASE NOTE ALL OTHER TERMS, CONDITIONS, SPECIFICATIONS DRAWINGS, ETC. REMAIN UNCHANGED.

SINCERELY,
MICHALYN RAINS, CPPO, CPPB
PURCHASING AGENT



PRE-BID MEETING SIGN-IN SHEET

Project: IFB 2014-261, Construction, Collin County Walking Trail **Meeting Date:** July 18, 2014

Facilitator: Matt Dobecka, CPPB, CPPB Collin County Purchasing **Place/Room:** Commissioners' Courtroom

Name	Company	Phone	E-Mail
Bryan Vassar	ROESCHCO Construction	469-888-4135	bv@roeschco.com
Geri Osnaike	Collin County	—	—
MATT DOBECKA	Collin County	972-548-4103	mdobecka@co.collin.tx.us
Chad Tucker	TLM Earthco	(817) 875-1687	ctucker@TLMearthco.com
Cheyenne Massey	Total Demolition Services	817-734-8015	cheyenne@totaldemoservice.com
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Luke Heimlich	Northstar Const.	(817) 244-8885	mikeh@northstar93.com
Megan Towery	GHB equip co. LLC	(903) 583-5000	mtowery@ghb-bridge.com
KENT SPURIN	Spurin & Assocs.	972-562-5368	mckspurin@SBCGLOBAL.NET



**IFB# 2014-261
SIGN-IN SHEET**

Project: Construction, Collin County Walking Trail **Meeting Date:** August 5, 2014

Facilitator: Matt Dobecka **Place/Room:** Administration Building

Name	Phone	Company	Phone	Fax	E-Mail
Cleveland Senior		Ampere Networks	214-796-4500	214-440-2087 2009	cmsenior@hotmail.com
CHAD TUCKER		R/LM EARTHCO	(817) 875-1687		CTUCKER@RLMEARTHCO.COM
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J.D. Griffin		Collin County			
Denzil Stuebing		Ampere Networks	972-639-9821		

Collin County Walking Trail
Justice Center Complex
2300 Bloomdale Road
Collin County, Texas

Addendum Number 2

Item 1: Sheet C2; note reads "Removable Bollard" but has no specification for bollard or installation details.

- A. Refer to attached PDF file "Removable Bollard Details" and provide bollard complying with Chart line 8, 10,000#, 5.563" outside diameter, 5.047" inside diameter and 66" pier height 'C'.
- B. There shall be one (1) bollard where shown on Sheet C2 near the Administration Building end of the trail and one (1) bollard at Bloomdale Road end of the trail near STA 9+73.63 shown on Sheet C5, both under the Base Bid.
- C. There shall be one (1) bollard at the Sheriff's Office end of the trail near STA 0+00.00 shown on Sheet C3 under the Alternate Bid.

Item 2: Sheet C2; proposed picnic area notes refer to detail on Sheet C10 but there is no detail for a picnic table on C10.

- A. Refer to Sheet C9, Detail "Picnic Table Area"; there are 2 standard table locations and 2 HC accessible table locations in the project.
- B. Refer also to Spec. Section 02870 Site Furnishings.

Item 3: Sheet C2: How is detail "Alternate 10' Section" to be dealt with in the bids?

- A. On Sheet C2, delete detail "Alternate 10' Section" in its entirety. This detail no longer applies to the project.

Item 4: Sheet C3; note reads "See Arch Plans for Railing and Details" but there is no detail for railings in the Drawings.

- A. Refer to attached PDF file "Ramp Handrail Detail" for typical details at upper and lower landings of ramp sections.

Item 5: "Typical Sections" on Sheets C2, C3, C4 & C5 contradict "Walk Detail" on Sheet C9.

- A. Sheets C2-C5 each contain correct sections through the trail shown on each sheet.
- B. At "Walk Detail" on Sheet C9, change "3,000 PSI concrete..." to "3,500 PSI concrete...".
- C. At "Walk Detail" on Sheet C9, remove the note reading "Provide cushion sand per spec. section 02300 2.03.G".
- D. At "Walk Detail" on Sheet C9, change thickness of concrete from 5 IN to 6 IN.
- E. Trails shall comply with "Reinforced Concrete Sidewalks-Joints and Spacing" per City of McKinney, refer to attached PDF file "McK Sidewalk Stds."
- F. All trail subgrade preparation shall comply with Geotechnical Report in Spec. Section 00220 Geotechnical Data.

Item 6: Sheet C3, Sheriff's Office end of trail does not have a removable bollard like the Administration Building end of trail, is this correct?

- A. Please see notes on Item 1 above for Removable Bollards.

Item 7: Sheet C3, shows the concrete at Sheriff's Office to flare out to a larger dimension but there is not a detail noted or a dimension provided.

- A. Radii at Trailheads are 3 FT.

Item 8: Sheet C4, circled note A reads "Full depth saw cut 9 LF, remove and replace existing concrete; Construct a longitude butt joint; Isn't the saw cut minimum 12 LF?"

- A. Full depth sawcut shall be 7 FT minimum (6 FT trail width + 6 IN curb on each of two sides).

Item 9: Sheet C4, I'm not sure what BFR stands for but I assume it is for an ADA pathway but there is no detail for constructing the ADA access.

- A. BFR is Barrier Free Ramp; refer to attached PDF file "TxDOT Curb Ramp Details". Barrier Free Ramps shall comply with Type 7 ramp.

Item 10: Sheet C4; the walkway profile shows the existing fire lane lower than the top of new walkway; shouldn't the top of walk way be the same as the existing fire lane?

- A. The Profile line on Sheet C4 is correct. The location of the walk crossing is not correct on the Profile. The walk crossing will be at Station 1+21.00 thru Station 1+45.00 and at the existing Gutter Elevation. Refer to attached PDF file "Sheet C4 Ex Walk Location Revision".

Item 11: Sheet C4, there is not a detail or specification for painting a crosswalk across the fire lane.

- A. Provide crosswalk striping of 4" wide, spray applied white vinyl acrylic paint. Paint shall be applied in two coats to a clean, dry surface using template or striping machine.

Item 12: Sheet C4; the plan shows the existing brick bollard to be centered in the walkway; is that correct?

- A. The existing brick bollard shall remain in the center of the new trail. The trail shall be widened just north of the existing brick bollards and extended southward to the existing Courthouse sidewalk the width of the space between the two existing bollards on either side of the center bollard, making the trail approximately 8.5 FT wide at that point; see attached PDF file "CH Sidewalk with Bollard" for clarification.

Item 13: Sheet C5; no detail noted for the picnic table pads.

- A. On Sheet C5 at two (2) picnic areas on east walking trail at STA 1+58.69 and STA 5+39.59, add a note reading "Proposed Picnic Area See Detail Sheet C9".
- B. All four (4) picnic area pads on the project shall be constructed in compliance with "Walk Detail" on Sheet C9 as revised in Item 5 above.

Item 14: Sheet C5; no detail noted for the monument sign pad.

- A. On Sheet C5 between STA 2+12.98 and STA 2+64.95, add a note reading "Proposed Memorial Plaque Wall Area See Detail Sheet C9".
- B. On sheet C9 add new detail on attached PDF file "Memorial Plaque Wall Layout" which shows the configuration of the five (5) new plaque walls detailed on Sheet A1 and S4.

Item 15: Sheet C5; no detail or dimension provided for flared tie in at existing sidewalk.

- A. Radii at trailheads are 3 FT.

Item 16: Sheet C6; There are noted "Alternates" but the bid doesn't list this scope as bid alternates. I assume the scope without the alternate is storm line A?

- A. Storm Line A is part of the Base Bid trail and is therefore included in the Base Bid.
- B. Storm Lines B and C are part of the trail extension to the Sheriff's Office which is all part of the Alternate Bid.

Item 17: Sheet C6; storm drain detail refers to "per Detail Sheet" but doesn't provide this plan or detail information.

- A. The complete note says "Construct Concrete Sloped Headwall per Detail Sheet". Please refer to Sheet C9 DETAILS and specifically "Sloped Headwall" detail.

Item 18: Sheet C7; has a note for a barricade but there are no details or specifications in the bid documents.

- A. On Sheet C7 near center of sheet and west of bridge, remove barricade to future hike & bike trail and remove note reading "Install Barricade".

Item 19: Sheet C7; are three (3) signs scheduled for the 6' West Side Trail (to Sheriff's Office) included in the Alternate Bid?

- A. Three (3) signs (two R5-6 and one R5-3) shown on the north extension of the west side trail to Sheriff's Office are part of the Alternate Bid trail section and therefore included in the Alternate Bid.

Item 20: Sheet C7; the signs have no specification section and the plan does not refer to the installation detail provided on Sheet C9.

- A. On Sheet C7 add a general note reading "Refer to Sheet C9 and 'Trail Sign Detail' for installation of all trail signs shown. All signs, posts and anchorage shall comply with the Texas Department of Transportation Standard Specifications for Construction of Highways, Streets and Bridges, 1993 Edition, Item 636 Aluminum Signs, Item 646 Small Roadside Sign Supports and Texas Manual for Uniform Traffic Control Devices".

Item 21: Sheet C7; the signage plan does not show the tie-in between the Bloomdale Drive public walk and the new trail; is there signage required in this area?

- A. On Sheet C7 add one R5-3 sign and one R5-6 sign on one post; add one R1-1 sign on one post, and add one W2-1 sign on one post, all three (3) posts at exact locations to be determined by Engineer near the intersection of the new trail and the Bloomdale Drive public walk.
- B. The above additional signage will be part of the Base Bid.

Item 22: Sheet C8; at the 6' West Side Trail (to Sheriff's Office) is the erosion control scope part of the Alternate Bid?

- A. On Sheet C8 all Silt Fence shown north and west of the bridge is for the portion of the trail under the Alternate Bid and therefore that portion of the silt fence shall be included in the Alternate Bid.

Item 23: Sheet C8; is there any grass, sod or temporary irrigation required for project completion?

- A. On Sheet C8 Erosion Control Plan, at Stormwater Pollution Prevention Notes, change Note #5 to read as follows: "15. All disturbed ground areas resulting from the work of this project shall be revegetated in accordance with City of McKinney Landscaping requirements and Stage Three Drought restrictions. See City of McKinney for additional information and details. It is our current understanding that NO hydromulching or seeding is allowed by the City of McKinney, only sod is acceptable, and that watering to establish new sod is allowed for a maximum of thirty (30) days. Therefore, all disturbed ground areas resulting from the work of this project shall be covered with sod and watered via temporary irrigation system provided by the Contractor to the maximum extent allowed by the City of McKinney at the time the sod is installed; water costs shall be paid by the Contractor".

Item 24: Sheet C9; the "Walk Detail" reads to provide 3,000 PSI concrete which contradicts the trail sections on Sheets C2-C5 that read 3,500 PSI.

- A. On Sheet C9, change "Walk Detail" in accordance with Items 4.B, 4.C & 4.D above.
- B. Trails shall comply with "Reinforced Concrete Sidewalks-Joints and Spacing" per City of McKinney, refer to attached PDF file "McK Sidewalk Stds."
- C. All trail subgrade preparation shall comply with Geotechnical Report in Spec. Section 00220 Geotechnical Data.

Item 25: Sheet C9; "Walk Detail" refers to a spec section 02300 2.03G that doesn't exist in this bid set of documents.

- A. On Sheet C9, change "Walk Detail" in accordance with Items 4.B, 4.C & 4.D above.
- B. Trails shall comply with "Reinforced Concrete Sidewalks-Joints and Spacing" per City of McKinney, refer to attached PDF file "McK Sidewalk Stds."
- C. All trail subgrade preparation shall comply with Geotechnical Report in Spec. Section 00220 Geotechnical Data.

Item 26: Sheet C9; four (4) paving joint details refer to "Hot Poured Rubber Joint Sealant Compound" which has no specification or notes that refer to a standard.

- A. All hot poured rubber joint sealant compound referred to on Sheet C9 shall be Type 5 Joint Sealant complying with the Standard Specifications for Public Works Construction prepared by NCTCOG.

Item 27: Sheet C9; "Longitudinal Butt Joint" detail note 3 mentions how to install the dowel but doesn't refer to any adhesive; does this installation require any adhesive to install the anchor?

- A. Longitudinal Butt Joints require Epoxy Adhesive on the existing concrete side. Epoxy 12 IN using TxDOT Type III in accordance with DMS-6100.

Item 28: Sheet C9; "Sloped Headway" detail has a dimension reading "See Plan" but doesn't have a reference to where this information may be located.

- A. Rip-Rap at ends of Sloped Headwalls shall be 10 FT in length.

Item 29: Sheet C9; Notes on concrete joints refer to "Reinforcing Bars Shall Be Supported By Approved Device". What is this device and where can it be referenced?

- A. Reinforcing bar support devices shall be chairs or ties complying with "Reinforced Concrete Sidewalks-Joints and Spacing" per City of McKinney, refer to attached PDF file "McK Sidewalk Stds."

Item 30: Sheet C10; no landscape specification, no details or standard to refer Contractor to standard. No submittal of trees required? Tree staking required? Temporary irrigation required and for how long?

- A. At eight (8) new 4" caliper trees required by "Plant List" on Sheet C10, refer to attached PDF files "Section 02900 Planting" & "Treegator Specification" for work required.
- B. At two (2) relocated 4" caliper trees required by "Relocation Tree List" on Sheet C10, refer to attached PDF files "Section 02900 Planting" & "Treegator Specification" for work required.

Item 31: Sheet C10 Tree Plan.

- A. On Sheet C10, remove the "Removal List" in its entirety; no trees are required to be removed as a result of ditch grading. The "Plant List" & "Relocation Tree List" shall remain as is.
- B. The Civil Engineer will flag the 2 existing trees to be relocated as called for in the note in the upper right corner of the plan to ensure the proper trees are relocated.

Item 32: Sheet A1; no mention of joint sealant for cast stone or mockup required for Architect to select closest match to courthouse.

- A. Spec Section 04720 states that Cast Stone shall match the Courthouse and requires submittal of two cast stone samples for approval prior to fabrication of project cast stone.
- B. Spec Section 04720 references Spec Section 07920 for Joint Sealants.
- C. Spec Section 07920 requires joint sealant in all horizontal cast stone joints.

Item 33: Sheet A1; how many of the plaque walls are required and how are they arranged?

- A. There are a total of five (5) plaque walls detailed on Sheet A1 required for the project.
- B. See attached PDF file "Memorial Plaque Wall Layout" for dimensions of paving around plaque walls, clear distances between plaque walls, radius of plaque wall layout, etc.

Item 34: Sheet A1; who is responsible for mounting the plaques on the plaque walls and how are they mounted?

- A. The existing plaques from a previous project will be provided to the Contractor who shall be responsible for mounting the five (5) plaques on the five (5) plaque walls.
- B. The existing plaques are designed for concealed mounting in masonry walls via welded studs on the back of the plaques; Contractor shall drill holes in the cast stone masonry as required and secure the plaques with Epoxy adhesive.

Item 35: Sheet S4; Note 3 lists mortar type "M" or "S". Is type "M" mortar allowed for this use?

- A. On Sheet S4 at Reinforced Concrete Masonry Notes, change Note 3 to read "Mortar shall be Type "S" in accordance.....". Collin County Building Standards require Type S mortar for all structural walls.

Item 36: Sheet S4; what is layout of the foundations for the multiple monument signs?

- A. See attached PDF file "Memorial Plaque Wall Layout" for dimensions of paving around plaque walls, clear distances between plaque walls, radius of plaque wall layout, etc.

Item 37: Sheet E1.01, what is wire and conduit size for lighting circuits SH-37, SH-39 & SH-41 and power circuit SL-27?

- A. Wire size for new lighting circuits SH-37, SH-39 & SH-41 and power circuit SL-27 shall be (2) #10 & (1) #12. Conduit for each of these circuits shall be 3/4 IN.

Item 38: Sheet E1.01; Lighting Fixture Schedule, Type SP1; the part number does not include the arm selection or the finish selection.

- A. Finish selection for fixture/pole/arm will be made at a later date.
- B. Fixture Type SP1 Arm selection shall be Sternberg Park Ridge Series Model R2.

Item 39: Sheet E1.01; where/how do the receptacles mount inside the SP1 pole bases as required in Note by Symbol #5?

- A. According to the SP1 fixture manufacturer, there is sufficient space within the fixture pole base to mount an electrical outlet just inside the hand-hole to the base.

Item 40: Sheet E1.01 Light Fixture Schedule; what model is the mounting arm for the five (5) Type SL1 fixtures mounted on the plaque walls?

- A. Mounting arms for Type SL1 LED linear floodlights for plaque walls shall be Cree Model XA-XFR12 (12 IN extruded aluminum extension arm) in color selection to be made at later date.

Item 41: Sheet E1.01; what is the preferred routing of the new electrical circuits from the site into the existing electrical room?

- A. Refer to attached PDF file "Circuit Routing to Elec Rm" for a revised site plan indicating the preferred routing of all new electrical circuits from the site into the existing Electrical Room.
- B. Refer to attached PDF file "Admin Utilities and Irrigation" for additional information regarding all of the approximate known locations of existing utilities on the south end of the Administration Building where the new electrical circuits will enter the existing electrical room.
- C. On Sheet E1.01 at Notes by Symbol, add a new Note #6 as shown on the attached PDF file "Circuit Routing to Elec Rm" which describes the preferred routing shown on the sketch.

Item 42: Sheet E1.02; please clarify Note by Symbol #2 which says to "circuit to nearby trail lights".

- A. On Sheet E1.02 Notes by Symbol, change note #2 to read "Circuit five (5) Type SL1 fixtures to new trail light circuit SH-39".

Item 43: Sheet E1.02, what is make/model for new time clock per Note by Symbol #3?

- A. On Sheet E1.02, Notes by Symbol #3, at the end of the note add "equal to Wattstopper-LP8S-115".

Item 44: Sheet E1.02; what is the mounting height for the SL1 fixture on the plaque walls?

- A. SL1 light fixtures shall be mounted at 8 FT above bottom of wall in the mortar joint between cast stones.

Item 45: Sheet E3.01, Electrical Specifications; please confirm the code references are up-to-date.

- A. At Paragraph 16010 A, change subparagraph 8 National Electric Code from 2005 Edition to 2011 Edition.
- B. At Paragraph 16010 A, change subparagraph 9 International Building Code from 2006 Edition to 2012 Edition.

Item 46: Refer to Sheet C4 6' Walk East Side.

- A. At the existing bridge located between STA 4+56.18 & STA 5+37.99, add a steel pipe guardrail on each side of the bridge for the full length of the bridge (72 LF of guardrail each side of bridge) per elevation/detail on attached PDF files "Bridge Guardrail Detail" & "Bridge Guardrail Elevation". Guardrails shall extend approximately 1 FT beyond the concrete abutment on each end of the bridge with a terminal post anchored in a 12 IN DIA x 36 IN deep concrete footing and all intermediate posts being welded to the existing steel bridge structural frame as detailed.

Item 47: Refer to Specification Section 02870 Site Furnishings, Paragraph 2.02 Waste Receptacles.

- A. Revise Paragraph A to read "Provide four (4) waste receptacles....."
- B. Revise Paragraph A 2 to read "Lid: 22 3/4 IN DIA x 3/16 IN thick injection molded structural thermo plastic dome 10 IN high x 18 IN in diameter with 10 IN x 7 1/2 IN hole opening and spring loaded swing door and with air-craft cable for securing lid to waste receptacle, in color Black.
- C. Revise lid portion of Paragraph 2.02 B 1 to read "Model DT100N dome top lid".

Item 48: Additional Information.

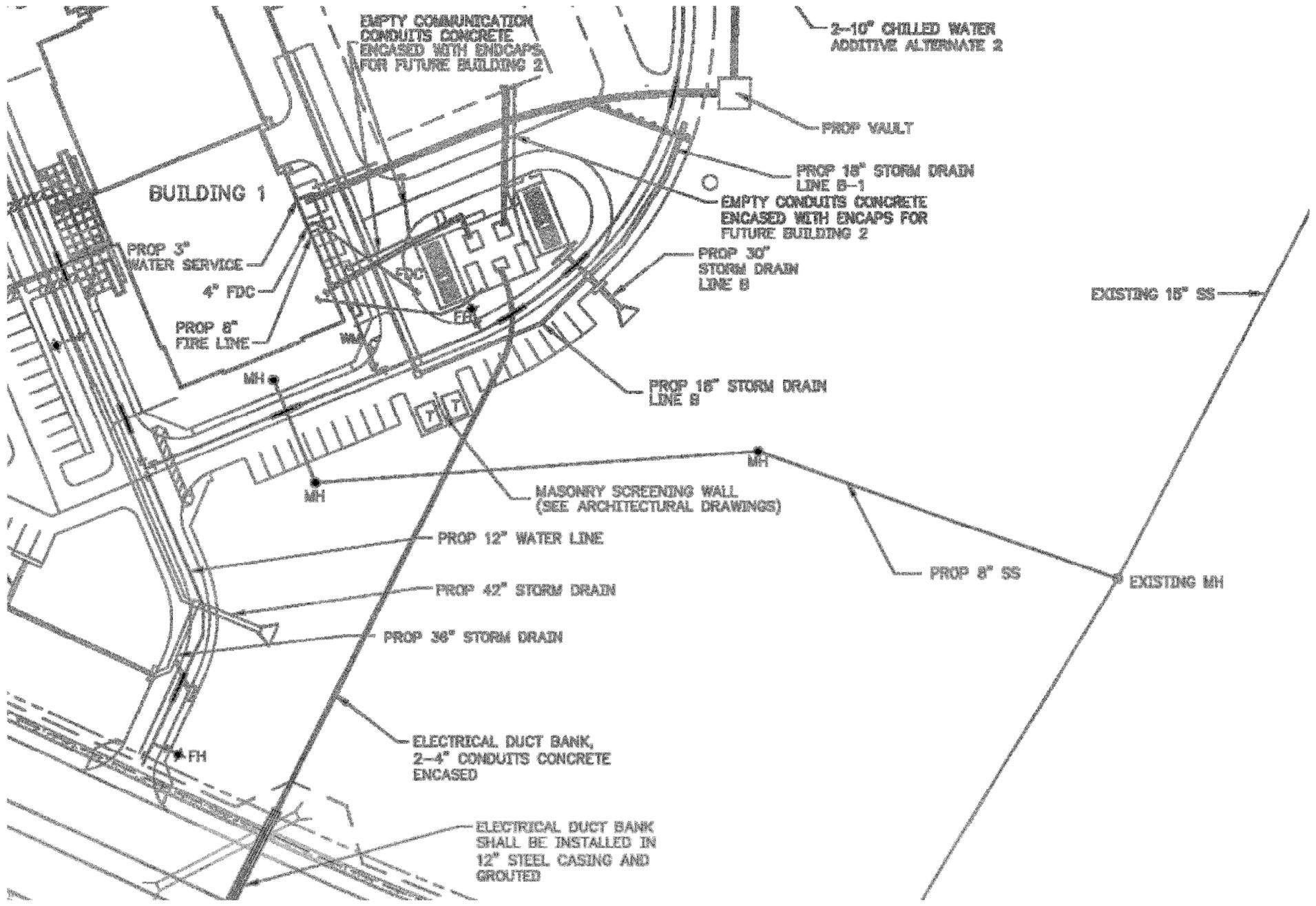
- A. Refer to attached PDF file "Admin Utilities and Irrigation" for additional information regarding required relocation of existing irrigation heads & piping at the end of the new trail near the Administration Building at STA 0+00.00 as shown on Sheet C2.

Clarifications:

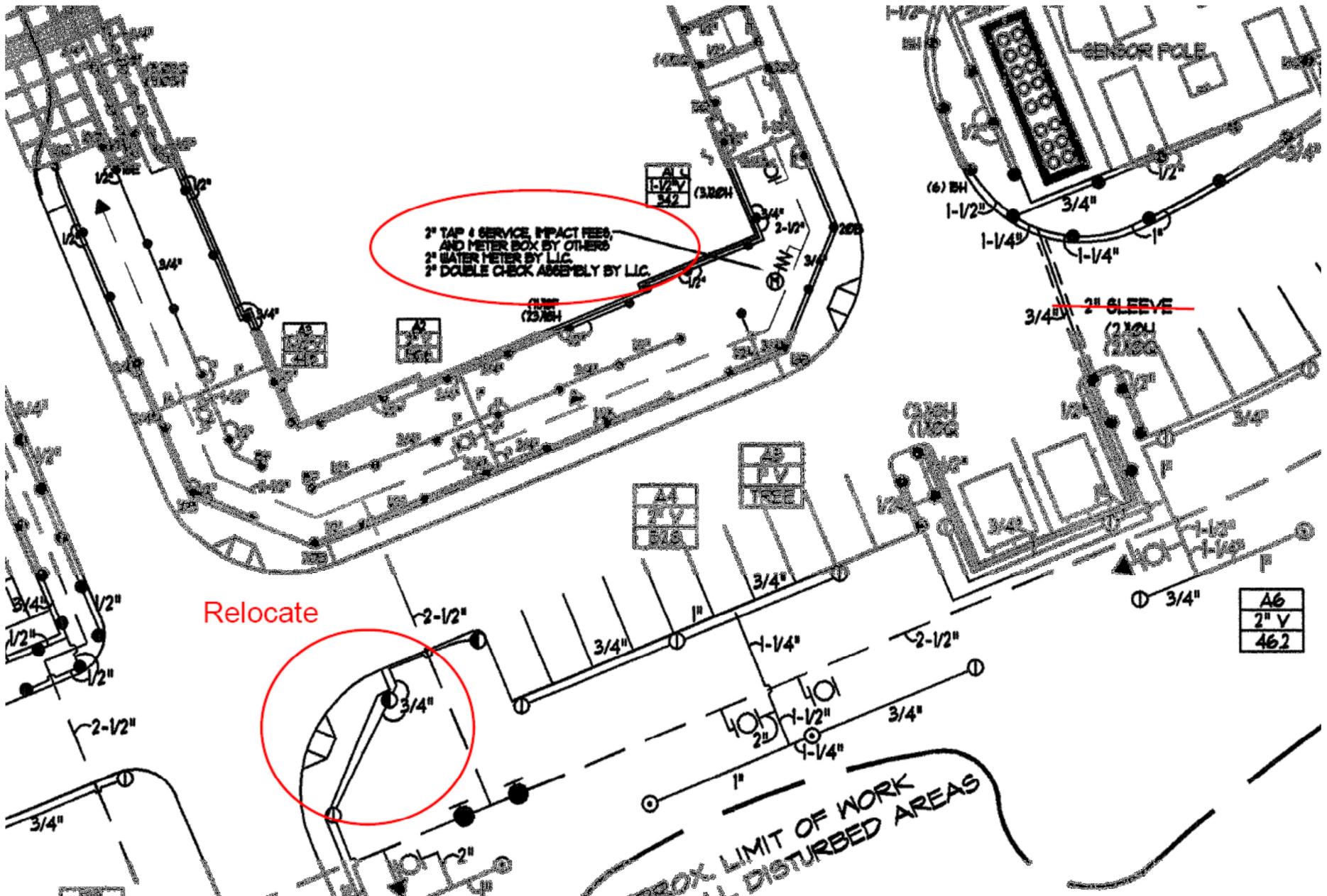
- A. The Contractor's staging area shall be located on the west side of the bridge. All construction traffic will enter from the west. No vehicle parking will be allowed on the east side of the creek without prior approval.
- B. Contractors will not be allowed to use the bridge for construction vehicles or pedestrian traffic. The Contractor shall build a temporary drive through/across the creek to pass from the west side to the east side of the creek.
- C. The Contractor shall be responsible for temporary water, temporary irrigation and temporary electrical.
- D. Project spoils can be hauled to the Public Works site one mile from the site.
- E. Collin County will provide all materials testing. Coordinate and schedule all inspections in advance with a 24 hour minimum notice. Inspections requested without proper notice may be delayed until the next business day.
- F. Contractors are required to submit the Schedule of Values within 10 calendar days after bid award.
- G. All Product Submittals, Shop Drawings, RFIs, Proposal Request and Change Orders shall be sent electronically to all parties listed on the Project Directory.
- H. No substitutions will be allowed after Bid Opening unless the specified product is discontinued or no longer available.
- I. All vegetation disturbed as a result of the work on this project shall be replaced in accordance with City of McKinney Landscaping requirements and per the Stage Three Drought restrictions. See City of McKinney for additional information and details.

END OF ADDENDUM NUMBER TWO

Collin County Administration Utilities and Irrigation

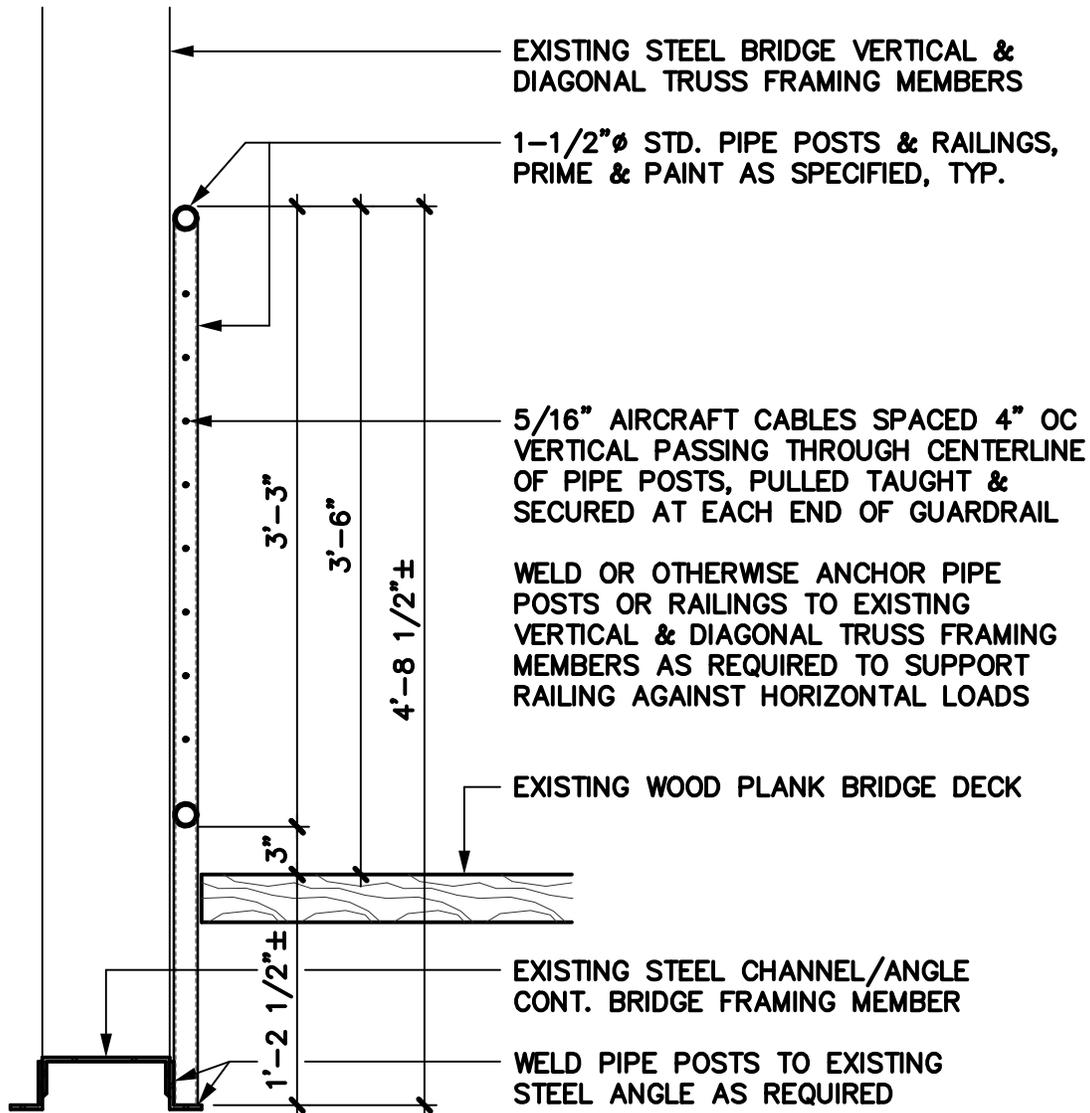


Collin County Administration Utilities and Irrigation



GUARDRAIL NOTES:

1. STEEL PIPE SHALL COMPLY WITH ASTM A53, TYPE E OR S, GRADE B, OR COMPLY WITH A120, SCHEDULE 40.
2. STEEL PIPE SHALL BE GALVANIZED & SHALL BE SHOP PRIMED WITH "10-99 TNEC PRIMER" OR EQUAL.
3. HANDRAILS SHALL BE FIELD PAINTED AS FOLLOWS:
 1ST COAT: TOUCHUP SHOP PRIMER.
 2ND COAT: SHERWIN WILLIAMS "ALL SURFACE ENAMEL", A11 SERIES, 1.6 MILS DFT.
 3RD COAT: SAME AS 2ND COAT.
4. PIPE POSTS SHALL BE SPACED 6 FT OC AS SHOWN IN BRIDGE ELEVATION FOR 72 FT OVERALL GUARDRAIL LENGTH.
5. END PIPE POSTS SHALL BE SET IN 12 IN DIA X 36 IN DEEP CONCRETE FOOTINGS ON EACH SIDE OF CONCRETE WALK.

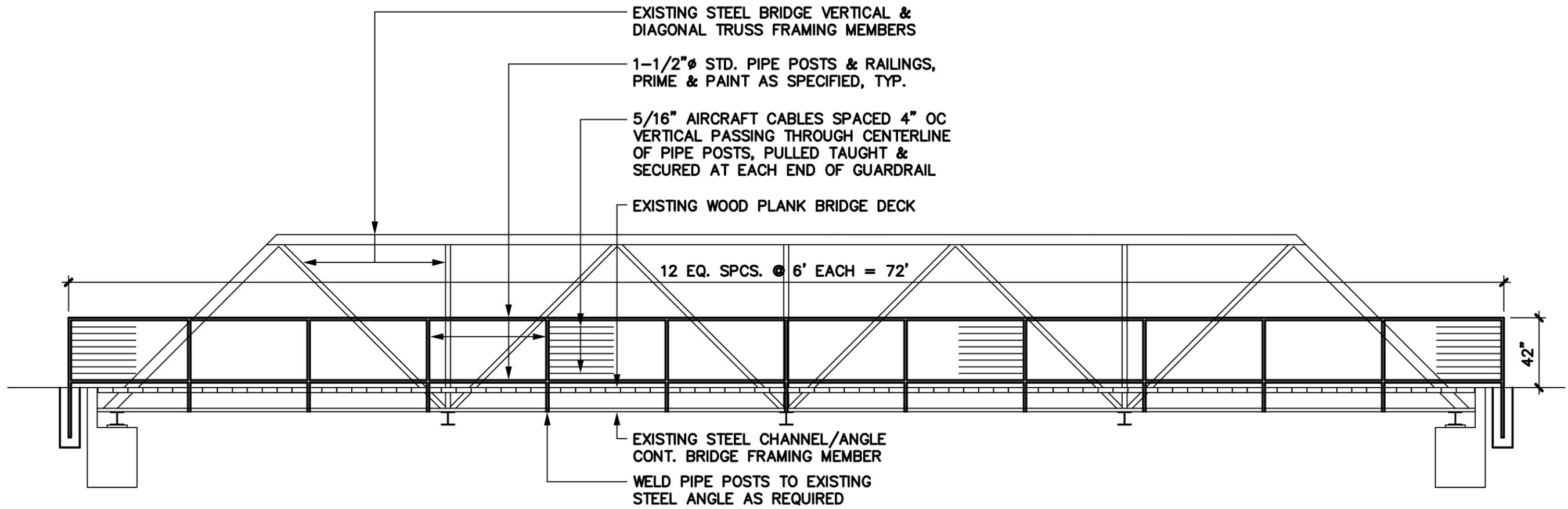


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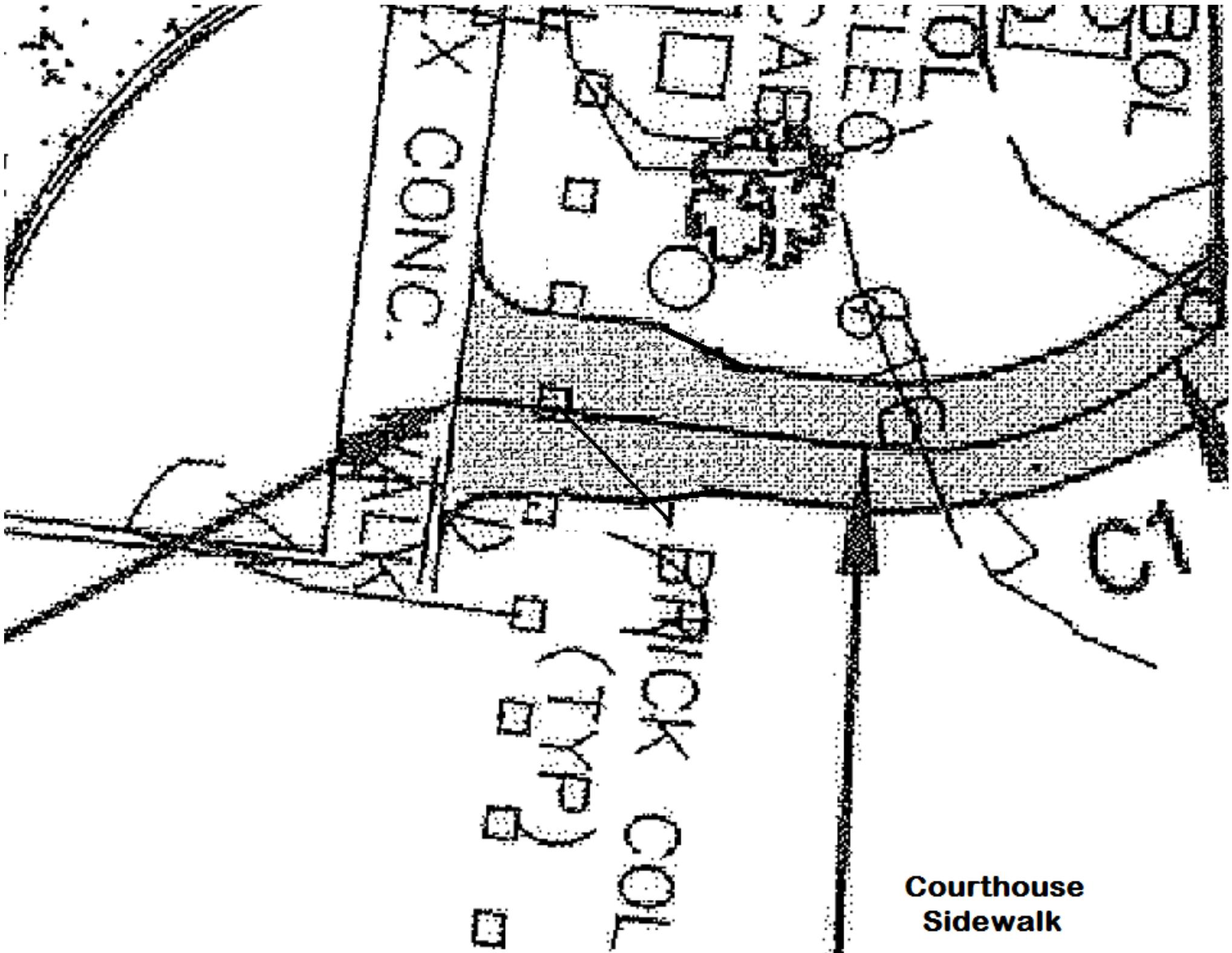
BRIDGE GUARDRAIL DTL

1" = 1'-0"

⊙ SIDE OF BRIDGE



1 BRIDGE GUARDRAIL ELEV
 NOT TO SCALE VIEW FROM SIDE OF BRIDGE

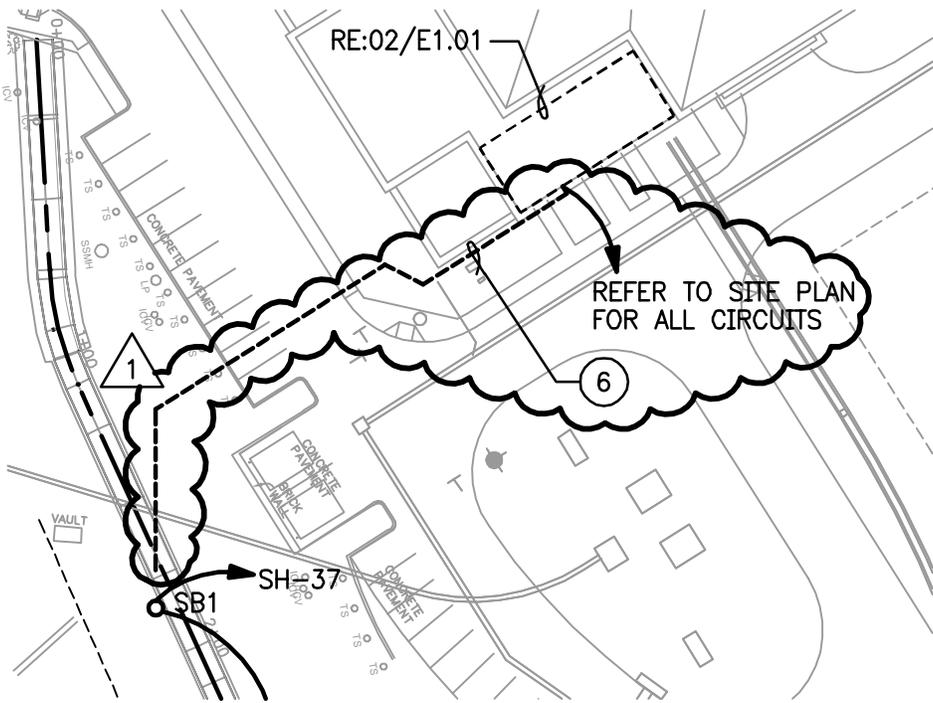


**Courthouse
Sidewalk**



08/06/14

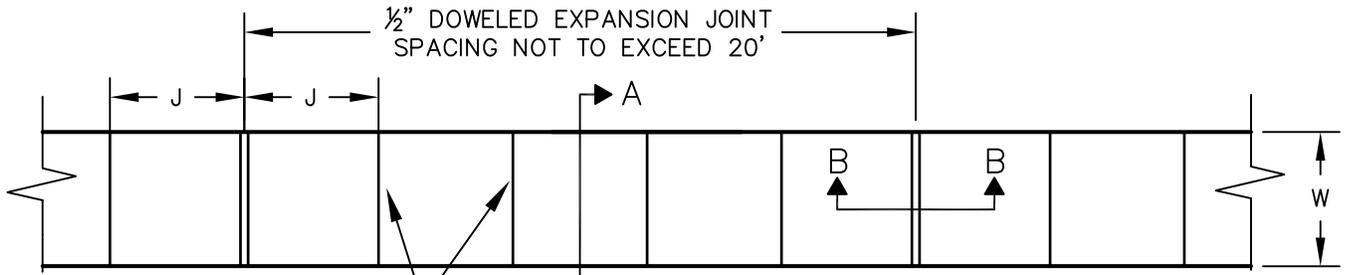
ISSUE FOR BID
AND CONSTRUCTION



NOTES BY SYMBOL

- ① ALL ITEMS ON THIS TRAIL ARE BID ALTERNATE.
- ② AS PART OF BASE BID PROVIDE PROVIDE 1" CONDUIT FROM ELECTRICAL ROOM TO PULL BOX AT EDGE OF BID ALTERNATE TRAIL.
- ③ REFER TO SHEET E3.01 DETAIL #1 FOR POLE BASE DETAIL.
- ④ REFER TO SHEET E3.01 DETAIL #2 FOR BOLLARD BASE DETAIL.
- ⑤ RECEPTACLES ARE MOUNTED WITHIN THE POLE BASE. PROVIDE CIRCUIT AS SHOWN.
- ① ⑥ PREFERRED UNDERGROUND ROUTING OF CIRCUITS. SAW CUT CONCRETE, PATCH AND REPAIR. CONDUIT TO BE MINIMUM 36" DEEP AND PROVIDE CAUTION TAPE 24" ABOVE THE CONDUIT. ROUTE CONDUIT WITHIN 2'-0" OF BUILDING WALL. STUB UP CONDUIT AND USE LB FITTING TO ENTER BUILDING LOW ON THE EXTERIOR WALL. RISE UP IN ELECTRICAL ROOM FOR FINAL CONNECTION..

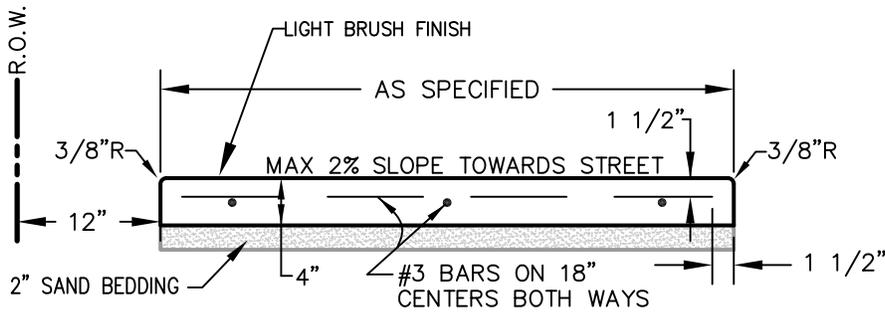
REVISION: REVISION #1		PROJECT: COLLIN COUNTY HIKE AND BIKE TRAIL	
SUPPLEMENT TO DRAWING No.: E1.01		TLC JOB No.: 209113	SCALE: 1"=60'-0"
DATE: 08/06/14	 4331 N. Central Expressway, Suite 200 Dallas, Texas 75204 Phone: 214-540-5900 Fax: 214-540-5940 www.tlc-engineers.com	© Copyright 2008 TLC Engineering for Architecture, Inc.	SKETCH No.
DESIGN: TDP			SKE1.01A
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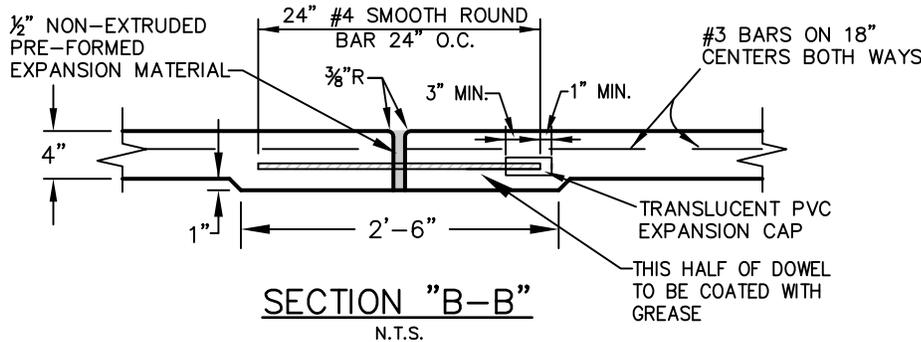
SIDEWALK PANELS SHALL BE GROOVED $\frac{3}{8}$ " DEEP AND SPACED PER TABLE

PLAN VIEW
N.T.S.

ROAD TYPE	MINIMUM SIDEWALK WIDTH (W)	PANEL SPACING (J)
M6D	6'	6'
M4D	6'	6'
M4U	6'	6'
M3U	6'	6'
C2U	5'	5'
R2U	4'	4'



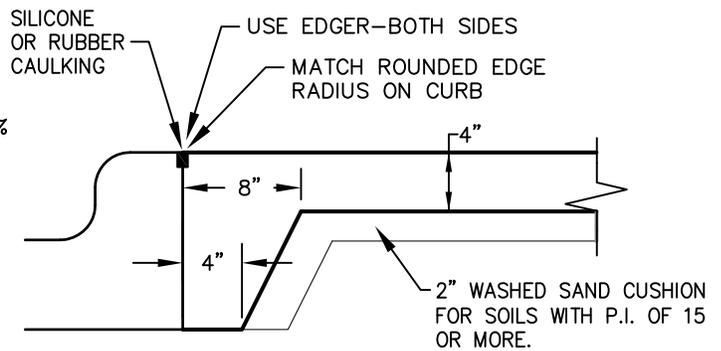
SECTION "A-A"
N.T.S.



SECTION "B-B"
N.T.S.

NOTES:

- CROSS SLOPE OF SIDEWALK SHALL BE NO GREATER THAN 2%
- SIDEWALK CONCRETE WITHIN CITY R.O.W. SHALL BE MINIMUM 4,000 PSI CONCRETE.
- ALL SIDEWALKS SHALL MAINTAIN POSITIVE DRAINAGE.
- PAVED SIDEWALKS SHALL BE PROVIDED ALONG BOTH SIDES OF ALL THOROUGHFARES AND COLLECTORS, AND ALONG ALL RESIDENTIAL OR LOCAL STREETS WHICH ARE LOCATED IMMEDIATELY ADJACENT TO A SCHOOL SITE AND FOR A DISTANCE OF ONE BLOCK ALONG SUCH STREETS LEADING DIRECTLY TO A SCHOOL SITE.
- MINIMUM WIDTH OF 6' IF SIDEWALK ADJACENT TO CURB.
- STEEL WIRE MESH IS NOT ACCEPTABLE.
- NO BELOW GRADE STAKES IN EXPANSION JOINTS.
- NO DOWELS AT LEAD WALKS AND CORNERS INTO CITY CURB.
- ALL REINFORCING STEEL SHALL BE SUPPORTED BY AN APPROVED DEVICE.



JOINT LUG DETAIL FOR MEDIAN PAVEMENT OR SIDEWALK ADJACENT TO CURB

N.T.S.



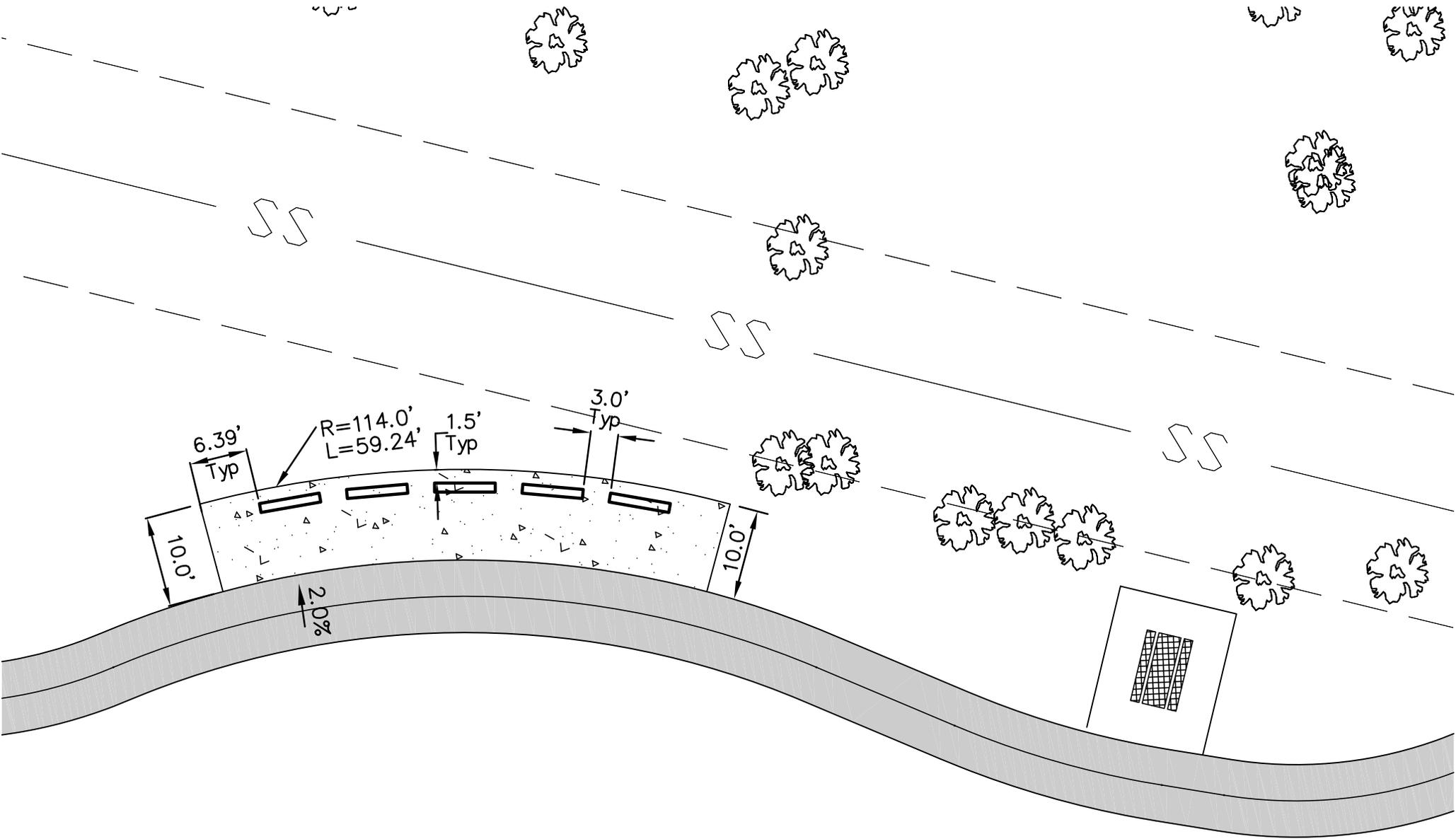
**REINFORCED CONCRETE SIDEWALKS
JOINTS AND SPACING
PAVEMENT SYSTEMS**

CITY OF MCKINNEY, TEXAS

DATE: APR. 2013

STANDARD DRAWING NO.

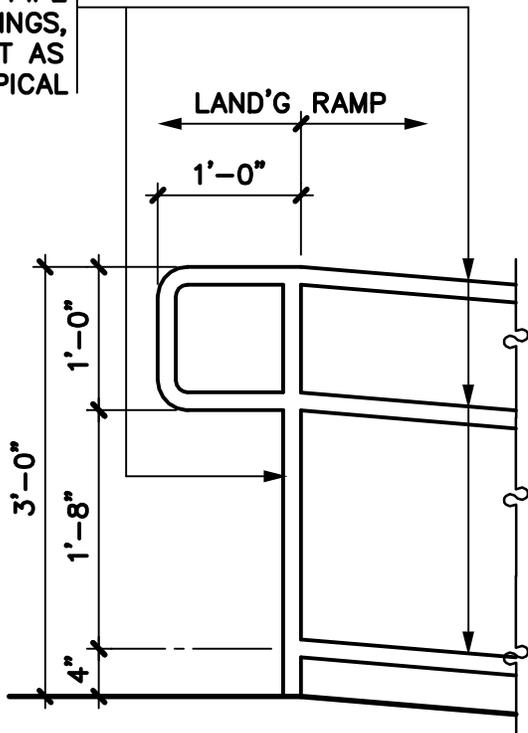
2170MA



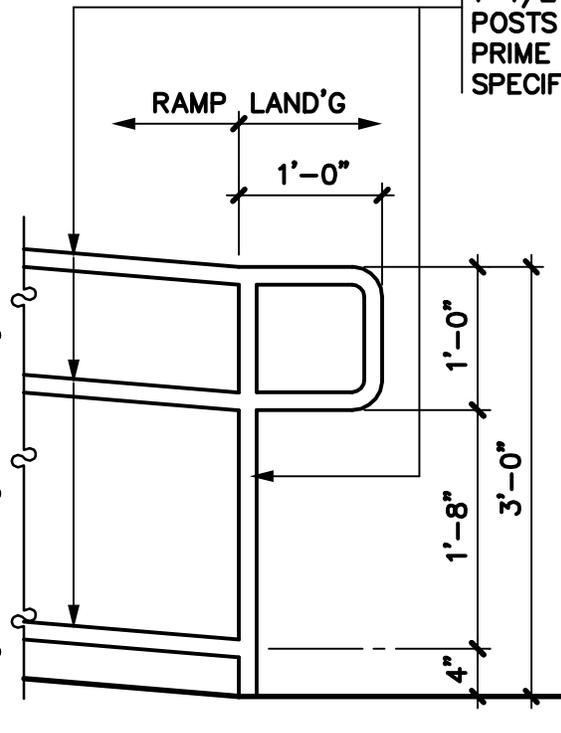
HANDRAIL NOTES:

1. STEEL PIPE SHALL COMPLY WITH ASTM A53, TYPE E OR S, GRADE B, OR COMPLY WITH A120, SCHEDULE 40.
2. STEEL PIPE SHALL BE GALVANIZED & SHALL BE SHOP PRIMED WITH "10-99 TNE MEC PRIMER" OR EQUAL.
3. HANDRAILS SHALL BE FIELD PAINTED AS FOLLOWS:
 1ST COAT: TOUCHUP SHOP PRIMER.
 2ND COAT: SHERWIN WILLIAMS "ALL SURFACE ENAMEL", A11 SERIES, 1.6 MILS DFT.
 3RD COAT: SAME AS 2ND COAT.
4. PIPE POSTS SHALL BE SPACED AT EACH LANDING AS SHOWN IN DETAILS BELOW AND SPACED 6 FT OC MAX BETWEEN LANDINGS.
5. PIPE POSTS SHALL BE SET IN CONCRETE FOOTINGS ON EACH SIDE OF CONCRETE WALK.

1-1/2"Ø STD. PIPE POSTS & RAILINGS, PRIME & PAINT AS SPECIFIED, TYPICAL



1-1/2"Ø STD. PIPE POSTS & RAILINGS, PRIME & PAINT AS SPECIFIED, TYPICAL



1 HANDRAIL DTL
 1" = 1'-0" RAMP-UPPER LANDING

2 HANDRAIL DTL
 1" = 1'-0" RAMP-LOWER LANDING



GENERAL WARNINGS AND CAUTIONARY STATEMENTS FOR REMOVABLE BOLLARDS

In order to safely and effectively use any TrafficGuard Direct product, please read and understand the General Warnings and Cautionary Statements contained below. If you have any questions about any of these General Warnings and Cautionary Statements, or about any aspect of TrafficGuard Direct's products or literature, please contact TrafficGuard Direct at 877-727-7347, or email sales@trafficguard.net.



READ AND FULLY UNDERSTAND THE INSTALLATION INSTRUCTIONS

before attempting to install any TrafficGuard Direct bollard product.



SUBSTITUTION OF COMPONENTS MAY IMPAIR THE PROPER FUNCTION of TrafficGuard

Direct bollard products. If you need replacement parts, please contact TrafficGuard Direct at the number and email above.



WARNING: FAILURE TO FILL / COVER AN OPEN GROUND SLEEVE ON ALL REMOVABLE BOLLARDS MAY RESULT IN DAMAGE TO VEHICLES OR INJURY TO PEDESTRIANS. ALWAYS FILL / COVER THE GROUND SLEEVE PER TRAFFICGUARD INSTRUCTIONS.



REPLACEMENT GROUND SLEEVE FILLER PIECES ARE AVAILABLE for purchase at TrafficGuard Direct. For purchase of replacement ground sleeve filler pieces or other components, please contact TrafficGuard Direct at the number or email above.



CAUTION: BOLLARD MUST ALWAYS BE SECURED WITH LOCK MECHANISM WHEN BOLLARD IS IN THE GROUND SLEEVE TO AVOID MISUSE.



FOR MAXIMUM EFFECTIVENESS of TrafficGuard Direct bollard products, be sure to properly maintain bollards by replacing any damaged, corroded or missing components, and reapply paint as required to maximize visibility.



TO ENSURE VISIBILITY of bollards, be sure to apply all decals that are provided with the product, and in the manner recommended by TrafficGuard Direct.

IF IN DOUBT CALL TRAFFICGUARD DIRECT 877-727-7347



INSTALLATION DETAILS

FOR RP3500 SERIES KEY LOCK REMOVABLE BOLLARDS

- 1 NEVER ATTEMPT TO PLACE THE BOLLARD INTO THE GROUND SLEEVE WHILE IN THE LOCKED POSITION.**
- 2 PAY CAREFUL ATTENTION** to the placement of the location of the ground sleeve latch pin – this determines the location of the lock at the top of the post.
- 3 INSTALLATION OF A SMALLER FOUNDATION** than that specified may reduce the overall impact capacity of the TrafficGuard Bollard System.
- 4 TO PROTECT AGAINST A TRIP HAZARD** insert the galvanized ground sleeve filler piece at all times the bollard is removed from the ground sleeve insert.
- 5 PROPER DRAINAGE IS CRITICAL** to the life of the bollard and the locking system. You must keep water from standing in the hole.

IF YOU HAVE ANY CONCERNS OR QUESTIONS

before beginning the installation please call **TRAFFICGUARD DIRECT 877-727-7347 TOLL FREE.**

4

3

DWG NAME Drop in bollard install

1

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPROVED

D

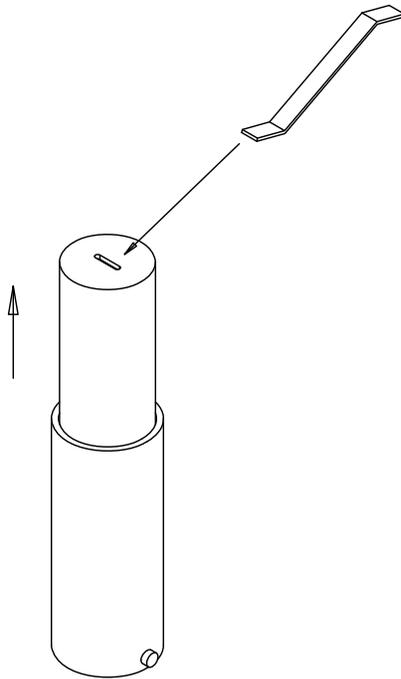
D

C

C

B

B



After following directions for securing outer tube in foundation, use removal key to completely remove cover.



Insert bollard into the outer tube until bottom touches base.

A

A

4

3

2

1

Traffic Guard, Inc.
P.O. Box 201, Geneva, Illinois 60134
Toll free (877) 727-7347
Fax (800) 814-7194

DESIGNER		SCALE		RELEASE DATE		HEIGHT		SHEET	
APPROVED									

SIZE B	Drawing name	REV
	Drop in bollard install	



Apply one warning label front and back in the path of travel with the top of the label near the top of bollard excluding the top cap

BOLLARD WITH LABEL ELEVATION

This Drawing shall not be used nor reproduced except when authorized in writing by TrafficGuard.

ROUND POST BOLLARD
LABELS PLACEMENT

THIRD ANGLE PROJECTION 
 Do not scale from drawing

Toll Free

TrafficGuard®

P.O. Box 201, Geneva, IL. 60134

Bus: 1.877.727.7347 Fax: 1.800.814.7194

3	-	-	-	Action	by				
2	-	-	-	Design	wkz	Dwg. Scale:	nts	Assembly Shipping Weight	Drawing Number:
1	-	-	-	Drawn	wkz	Copywrite:	2010	Varies per Model	RP label
Rev.	Date	by	Description	Checked	wkz	Dwg. Size:	Letter	Drawing Date:	12.10.10
								Sheet:	1 of 1

DESIGN AND CONSTRUCTION DATA SCHEDULE RPAS

1. THE DESIGN LOAD IS A STATIC LOAD "P" LOCATED AT 27 INCHES ABOVE GRADE THAT SHOULD CAUSE FAILURE OF THE BOLLARD.
2. THE EARTH PRESSURE VALUE IS SHOWN AT DESIGN LOAD AND THE OWNER SHOULD VERIFY THAT THE EARTH IS ADEQUATE TO WITHSTAND THE NOTED EARTH DESIGN PRESSURE.
3. ANCHORAGE SYSTEMS BY OTHERS THAN TRAFFICGUARD MAY CAUSE PREMATURE FAILURE OF THE BOLLARD BY ROTATION OF ANCHORAGE AT DESIGN LOAD.

DESIGN FORMULA: EARTH PRESSURE MAXIMUM $Q_{max} = 3888 P / DB(A+B)$

NOTE: CONCRETE, FORM, ROCK, PVC DRAIN AND REBAR PROVIDED BY OTHERS

DESIGN LOAD P	BOLLARD			EARTH "Q" MAX.	PIER HT. "C" MIN.	VERT. REBAR		HOOP TIES	PIER CONCRETE	FRENCH DRAIN	PIER "D"	LOAD DIM	
	Out Dia.	Ins Dia.	Fb PSI			LENGTH	QTY					"A"	"B"
600 #	1.910"	1.620"	49090	992 PSF	42 INCH	38 INCH	3	6 EA.	6 Cu Ft	1.2 CF	8"	7"	14"
1200 #	2.440"	2.064"	46552	1984 PSF	42 INCH	38 INCH	3	6 EA.	6 Cu Ft	1.2 CF	8"	7"	14"
3000 #	3.500"	3.068"	47093	2204 PSF	42 INCH	38 INCH	4	6 EA.	6 Cu Ft	0.5 CF	18"	7"	14"
6000 #	4.500"	4.026"	50467	4408 PSF	42 INCH	38 INCH	4	6 EA.	6 Cu Ft	0.5 CF	18"	7"	14"
6000 #	4.500"	4.026"	50467	2667 PSF	54 INCH	50 INCH	4	7 EA.	8 Cu Ft	0.5 CF	18"	9"	18"
10000#	5.563"	5.047"	49541	4444 PSF	54 INCH	50 INCH	4	7 EA.	8 Cu Ft	0.5 CF	18"	9"	18"
10000#	5.563"	5.047"	49541	3600 PSF	60 INCH	56 INCH	4	8 EA.	9 Cu Ft	0.5 CF	18"	10"	20"
10000#	5.563"	5.047"	49541	2975 PSF	66 INCH	62 INCH	4	8 EA.	10 Cu Ft	0.5 CF	18"	11"	22"
15000#	6.625"	6.065"	47647	3750 PSF	72 INCH	68 INCH	4	9 EA.	11 Cu Ft	0.5 CF	18"	12"	24"
15000#	6.625"	6.065"	47647	3195 PSF	78 INCH	72 INCH	4	9 EA.	12 Cu Ft	0.5 CF	18"	13"	26"
15000#	6.625"	6.065"	47647	3240 PSF	60 INCH	56 INCH	8	8 EA.	25 Cu Ft	1.6 CF	30"	10"	20"
15000#	6.625"	6.065"	47647	3333 PSF	54 INCH	50 INCH	8	7 EA.	32 Cu Ft	1.8 CF	36"	9"	18"

This Drawing shall not be used nor reproduced except when authorized in writing by TrafficGuard.

ROUND POST BOLLARD RPAS ANCHORAGE SYSTEM DETAILS

THIRD ANGLE PROJECTION Do not scale from drawing

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3	-	-	-		Action	by			
2	-	-	-		Design	wkz	Dwg. Scale: nts	Assembly Shipping Weight	
1	-	-	-		Drawn	wkz	Copywrite: 2010	Varies per Model	
Rev.	Date	by	Description				Checked	wkz	Dwg. Size: Letter
								Drawing Date: 12.10.10	Drawing Number: RPAS-2
								Sheet: 2 of 2	

VEHICLE DESIGN STATIC LOAD "P"
AT 27 INCHES ABOVE GRADE (NTS)

FRESH POURED CONCRETE PIER SHALL BE
PROTECTED FROM FREEZING FOR 14 DAYS AND
WILL REACH DESIGN STRENGTH AFTER 28 DAYS

INSTALL TOP OF CONCRETE AND
ANCHOR POST AT GRADE

USE NOTED PIER "D"
DIAMETER SONOTUBE
IF NEEDED TO AVOID
CAVE IN AT TOP

ROUND POST ANCHOR
SLEEVE BY
TRAFFICGUARD

4,000 PSI CONCRETE
PIER AT NOTED
DIAMETER & HEIGHT

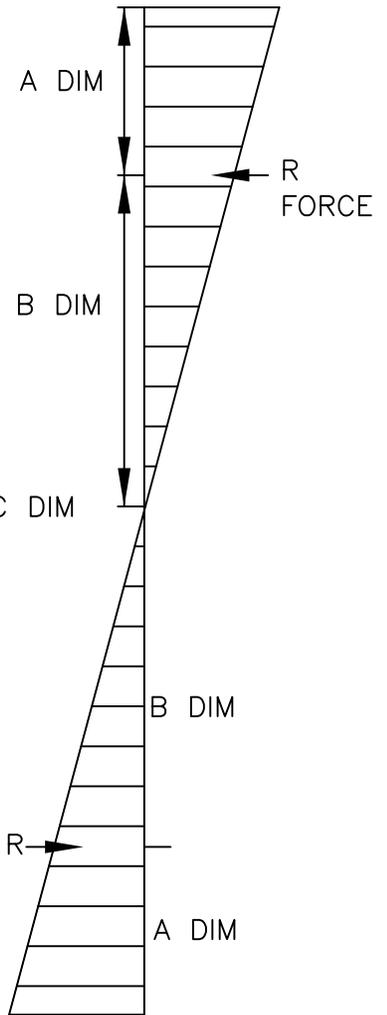
#4 VERTICAL REBAR
AT NOTED QUANTITY
& LENGTH.

PVC DRAIN PIPE
AT LENGTH FROM
ROCK TO BOLLARD
AT DIAMETER TO
MATCH BOLLARD

#3 REBAR HOOP
TIES AT THE NOTED
PIER DIAMETER MINUS
4" WITH 12" TIE LAP
INSTALLED AT 2" CLEAR
FROM TOP & BOTTOM
OF PIER AS SHOWN

3 INCHES MIN.
THICK ROCK
FRENCH DRAIN
PIER BASE.

EARTH PRESSURE
Q MAX PSF



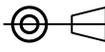
LOAD STRESS DIAGRAM

PIER ELEVATION SECTION

NOTE REFER TO RPAS-2 FOR THE ANCHORAGE SYSTEM DIMENSIONS,
DESIGN LOADS, REBAR SIZE, QUANTITIES, AND OTHER DESIGN DATA.

This Drawing shall not be used nor reproduced except when authorized in writing by TrafficGuard.

ROUND POST BOLLARD RPAS
ANCHORAGE SYSTEM ASSEMBLY

THIRD ANGLE
PROJECTION 
Do not scale from drawing

Toll
Free

TrafficGuard®

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3	-	-	-	Action	by	Dwg. Scale:	nts	Assembly Shipping Weight	Drawing Number:
2	-	-	-	Design	wkz	Copywrite:	2010	Varies per Model	RPAS-1
1	-	-	-	Drawn	wkz	Dwg. Size:	Letter	Drawing Date:	12.10.10
Rev.	Date	by	Description	Checked	wkz			Sheet: 1 of 2	

SECTION 02900

PLANTING

PART 1 – GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Complete planting shown on drawings and described herein.
- B. Related Sections:
 - 1. Division 2 – Grading

1.2 QUALITY ASSURANCE

- A. Comply with applicable federal, state and county regulations governing landscape materials and work.
- B. Owner reserves right to review materials at growing site.
- C. Observation at growing site does not preclude right of rejection at job site. Plants damaged in transit or at job site shall be rejected.
- D. Personnel: Employ only qualified personnel familiar with required work.

1.3 REFERENCED STANDARDS

- A. American Standard for Nursery Stock, Edition approved October 27, 1980 by American National Standards Institute, Inc. (Z60.1), except as modified herein-Plant Materials.
- B. Hortus Third, 1976 – Cornell University – Plant Nomenclature.

1.4 SUBMITTALS

- A. Samples: Provide representative quantities of sandy loam soil, mulch, bed mix material, gravel, and crushed stone. Samples shall be approved by Architect before use on project.
- B. Product Data: Submit complete product data and specifications on all other specified materials.
- C. Submit one representative sample of each variety of trees, shrubs, and groundcover plants for Owners' approval. When approved, tag, install and maintain as representative samples for final installed plant materials.
- D. File Certificates of inspection of plant material by state, county, and federal authorities with Architect, if required by Owner.

1.5 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Preparation:
 - 1. Balled and Burlapped (B&B) Plants: Dig and prepare shipment in a manner that will not damage roots, branches, shape, and future development.
 - 2. Container Grown Plants: Deliver plants in container sufficiently rigid to hold ball shape and protect root mass.
- B. Delivery:
 - 1. Deliver packaged materials in sealed containers showing weight, analysis and name of manufacturer. Protect materials from deterioration during delivery and while stored at site.
 - 2. Deliver only plant materials that can be planted in one day unless adequate storage and watering facilities are available on job site.
 - 3. Protect root balls by heeling in with sawdust or other approved moisture retaining material if not planted within 24 hours of delivery.
 - 4. Protect plants during delivery to prevent damage to root balls or desiccation of leaves. Keep plants moist at all times. Cover all materials during transport.

SECTION 02900

PLANTING

5. Notify Owner of delivery schedule 48 hours in advance so plant material may be observed upon arrival at job site.
 6. Remove rejected plant material immediately from site.
 7. To avoid damage or stress, do not lift, move, adjust to plumb, or otherwise manipulate plants by trunk or stems
- 1.6 JOB CONDITIONS
- A. Planting Restrictions:
 1. Perform actual planting only when weather and soil conditions are suitable in accordance with locally accepted practices.
 - B. Protection:
 1. Do not move equipment over existing or newly placed structures without written approval of Owner.
 2. Provide board-roading as required to protect paving.
 3. Protect other improvements from damage, with protection boards, ramps and protective sheeting.
 - C. Utilities:
 1. Determine locations of underground utilities and perform work in a manner which will avoid possible damage. Hand excavate, if required, to minimize possibility of damage to underground utilities.
 2. Coordinate work with irrigation contractor to prevent damage to underground sprinkler system.
 - D. Condition of Surfaces:
 1. Landscape areas will be left as described in civil sheets, Grading. Complete bed preparation as noted herein.
- 1.7 WARRANTY
- A. Warranty trees and plants for one year after substantial completion. Replace dead materials and material not in vigorous, thriving condition as soon as weather permits and on notification by Owner. Replace plants, including trees, which in opinion of Owner have partially died thereby damaging shape, size, or symmetry.
 - B. Replace plants with same kind and size as originally planted, at no cost to Owner. Provide one-year warranty on replacement plants. Trees may be replaced at start of next planting or digging season. In such case, remove dead trees immediately. Protect irrigation system and other piping, conduit other work during replacement. Repair any damage immediately to the Owner's satisfaction.
 - C. Warranty excludes replacement of plants after final acceptance because of injury by storm, drought, drowning, hail, freeze, insects or diseases, theft or vandalism.
 - D. Same requirements for relocated trees.
- 1.8 MAINTENANCE
- A. Water: Provide necessary temporary irrigation and other watering equipment required.
 - B. Maintain plantings by watering, cultivation, weeding, spraying, cleaning and replacement as necessary to keep landscape in a vigorous, health condition and rake bed areas as required until final acceptance.
 - C. Coordinate watering schedules with Owner during installation and until final acceptance. Provide deep root hand watering to newly installed trees for the first 30 days or as required.
 - D. Monitor sump pits at trees daily and dewater pits if standing water persists.
 - E. Same requirements for relocated trees.

SECTION 02900

PLANTING

PART 2 – PRODUCTS

2.1 PLANTS

- A. General: Well-formed No. 1 grade or better nursery grown stock. Listed plant heights are from tops of root balls to nominal tops of plants. Plant spread and height refers to nominal width and height of the plant, not to the outer leaf tips. Plants listed to be in container shall be container grown (not containerized) well rooted and established in their container but not root bound. Plants will be individually approved by the Architect and his decision as to their acceptability shall be final.
- B. Shrubs and Groundcovers: Nursery grown, healthy, vigorous, of normal habit of growth for species, free from diseases, insect eggs and larvae. Specified sizes are before pruning and measured with branches in normal position.
- C. Ornamental and Shade Trees: Nursery grown healthy, vigorous full-branched, well-shaped, symmetrical, trunk diameter and height requirements as specified. Balls on balled and burlapped (B&B) trees shall be firm, neat, slightly tapered and well burlapped. Trees (B&B and container grown) with loose or broken balls shall be rejected. Balled and burlapped root balls shall be (9) inches in diameter for each inch caliper, measured six (6) inches above root ball for up to and including four (4) inch caliper, and twelve (12) inches above root ball for trees larger than four (4) inch caliper. Trees shall be free of physical damage such as scrapes, bark abrasions, split branches, mistletoe or other parasitic growth.
- D. Same requirements for relocated trees.

2.2 SOIL PREPARATION MATERIALS

- A. Sandy loam:
 - 1. Friable, fertile, dark, loamy soil, free of clay lumps, subsoil, stones, and other extraneous material and reasonably free of weeds and foreign grasses. Loam containing Dallegrass or Nutgrass shall be rejected.
 - 2. Physical properties as follows:
 - Clay – between 7-27 percent
 - Silt – between 15-25 percent
 - Sand – less than 52 percent
 - 3. Organic matter shall be 3%-10% of total dry weight.
 - 4. If requested, provide a certified soil analysis conducted by and approved soil testing laboratory verifying that sandy loam meets the above requirements.
- B. Bed Mix:
 - 1. Planting Beds: Professional Bedding Soil as supplied by Living Earth Technology (The LETCO Group L.P.) Dallas, Texas or pH balanced, Ready-To-Plant Mix as supplied by Soil Building Systems, Dallas, Texas; or Bedding Soil as supplied by Vital Earth Resources, Gladewater, Texas or equal.
- C. Commercial fertilizer: 10-20-10 or similar analysis. Nitrogen source to be a minimum 50% slow release organic Nitrogen (SCU or UF) with a minimum 8% sulphur and 4% iron, plus micronutrients.
- F. Peat: Commercial sphagnum peat moss or partially decomposed shredded pine bark or other approved organic material.

2.3 MISCELLANEOUS MATERIALS

- A. Steel Edging: 1/8" x 4" x 16" – dark green, DURAEDGE® steel landscape edging manufactured by The J.D. Russell Company or equal.
- B. Mulch: Double ground partially decomposed dark brown shredded hardwood bark mulch as distributed by Living Earth Technologies or equal.
- C. Staking Material for Trees:
 - 1. Post: Studded T-Post, #1 Armco or equal with anchor plate; 6'-0" length; painted black.
 - 2. Wire: 12 gauge, single strand, galvanized wire.
 - 3. Treestrap:
 - a. Manufacturer: GCS Inc., or equal
 - b. Description: 1 inch wide green colored Original Treestrap with two brass grommets per strap.

SECTION 02900

PLANTING

- c. Size: For 3-4 in. cal. Trees, #1018, 18 in. long. For 4-6 in. cal. Trees, #2024, 24in. long.
- D. Gravel: Washed native gravel, graded 1 in. to 1-1/2in.
- E. Filter Fabric: Mirafi 140N by Celanese Fibers Marketing Company, available at Lofland Co., (214)631-6699 or approved equal.
- F. Wrapping Material: Waterproof crepe wrapping paper. Clark's Tree Wrap, 4" wide manufactured by Walter E. Clark & Son, Inc or approved equal
- G. Soil Saver: Heavy duty biodegradable just mesh, Soil Saver, in 4'-0" wide rolls or approved equal

PART 3 – EXECUTION

3.1 INSPECTION

- A. Examine subgrade upon which work is to be performed and verify detrimental conditions affecting the work. Notify Owner of unsatisfactory conditions. Do not proceed with work until unsatisfactory conditions have been corrected in compliance with construction documents. Refer to paragraph 1.6 – Job Conditions, herein.

3.2 TREE PLANTING

- A. Stake tree locations for approval by Owner.
- B. Tree Pit Excavation: Excavated soil may be used for shade tree backfill if approved by architect. Backfill must be free of subsoil's, rock, caliche, and other extraneous material. If backfill is not acceptable, use sandy loam.
- C. Percolation Test: after tree pits are excavated, fill pits with water to determine if pits will adequately drain. If water does not percolate from pits within 24 hours, provide sump pits as detailed on the Drawings. If water does drain from pit, do not install gravel and sump pipe.
- D. Shade Trees:
 - 1. Plant I pits twice the diameter of the root balls or to the curb of pavement edge.
 - 2. Backfill with 5 parts excavated soil (or sandy loam) and 1 part peat. Remove excess excavated soil form site. Carefully settle by hand watering to prevent air pockets and to thoroughly settle soil around tree ball.
- E. Ornamental Trees:
 - 1. Plant in pits 12 inches greater in diameter than tree ball, backfill with Bed Mix. Remove excavated soil from site. Carefully settle by hand watering to prevent air pockets and to thoroughly settle soil around tree ball.
 - 2. Determine direction of staking and rotate plants in pit to take advantage of optimum stem orientation.

3.3 TREE SAUCERS

- A. From a 4-inch high saucer around all trees planted or relocated for deep watering. Rake saucer smooth. Add mulch to the top of the ball 3 in. deep and 3 in. clear of trunk and continue deep watering as required to keep uniform moisture around the root ball until final acceptance.

3.4 TREE STAKING

- A. Stake trees as required by AHJ planting operation. Take precautions during staking operation to prevent damage to injury to branches. Orient stakes within each cluster or row of trees in same direction.

3.5 PRUNING

- A. Prune newly planted and transplanted trees as directed by Owner following fine Pruning, Class I pruning standards provided by National Arborist Association. In general, remove at least one-third of wood by thinning. Do not cut back terminal branches. Remove sucker growth and broken or badly bruised branches.

PLANTING

3.6 TREE WRAPPING

- A. Wrap nursery grown trees and relocated trees. Extend wrapping around trunk from ground to a point immediately below lowest branch of each tree or as directed. Securely fasten in place with tacks or staples, so wrapping will remain in place one (1) year.

3.7 STEEL EDGING

- A. Set steel edging as indicated with top of edging one inch above finish grade on lawn stake.

3.8 PLANT BED PREPARATION

- A. Planting Beds:
 1. Excavate or fill to provide 6 inches of Bed Mix for shrubs, groundcover and seasonal color. Haul off excavated soil. Where bed areas have been left deeper than 6 inches, backfill with sandy loam to within 6 inches of finish grade followed by 6 inches of Bed Mix material as noted below.
 2. Place Bed Mix 3 in. deep into bed area and thoroughly rototill 2" to 3" deep into the subgrade. Rake out any clods, rocks, debris and complete backfill of Bed Mix to finish grade. Do not rototill this final 3 in. backfill layer.
- B. Add 4 pounds commercial fertilizer per 100 SF of bed area and mix thoroughly.

3.9 SHRUB AND GROUNDCOVER PLANTING

- A. Place plants in position on bed areas before cans have been removed. Obtain approval from Architect. Architect reserves right to interchange or shift locations of plants prior to planting. Do not remove burlap from B&B plants. Plant where located, setting plants with tops of balls even with tops of beds, and compact soil carefully around each plant ball. Water each plant thoroughly to eliminate air pockets. Carefully prune plants to remove dead or broken branches and hand-rake bed areas to smooth even surfaces.

3.10 SOIL SAVER

- A. Install Soil Saver in areas shown on Drawings and on slopes greater than 3:1 ratio in accordance with manufacturer's direction.

3.11 MULCH TOP DRESSING

- A. After planting has been completed and approved by Owner, top dress bed areas with mulch, 2 inches deep. Delay this operation until near final acceptance.

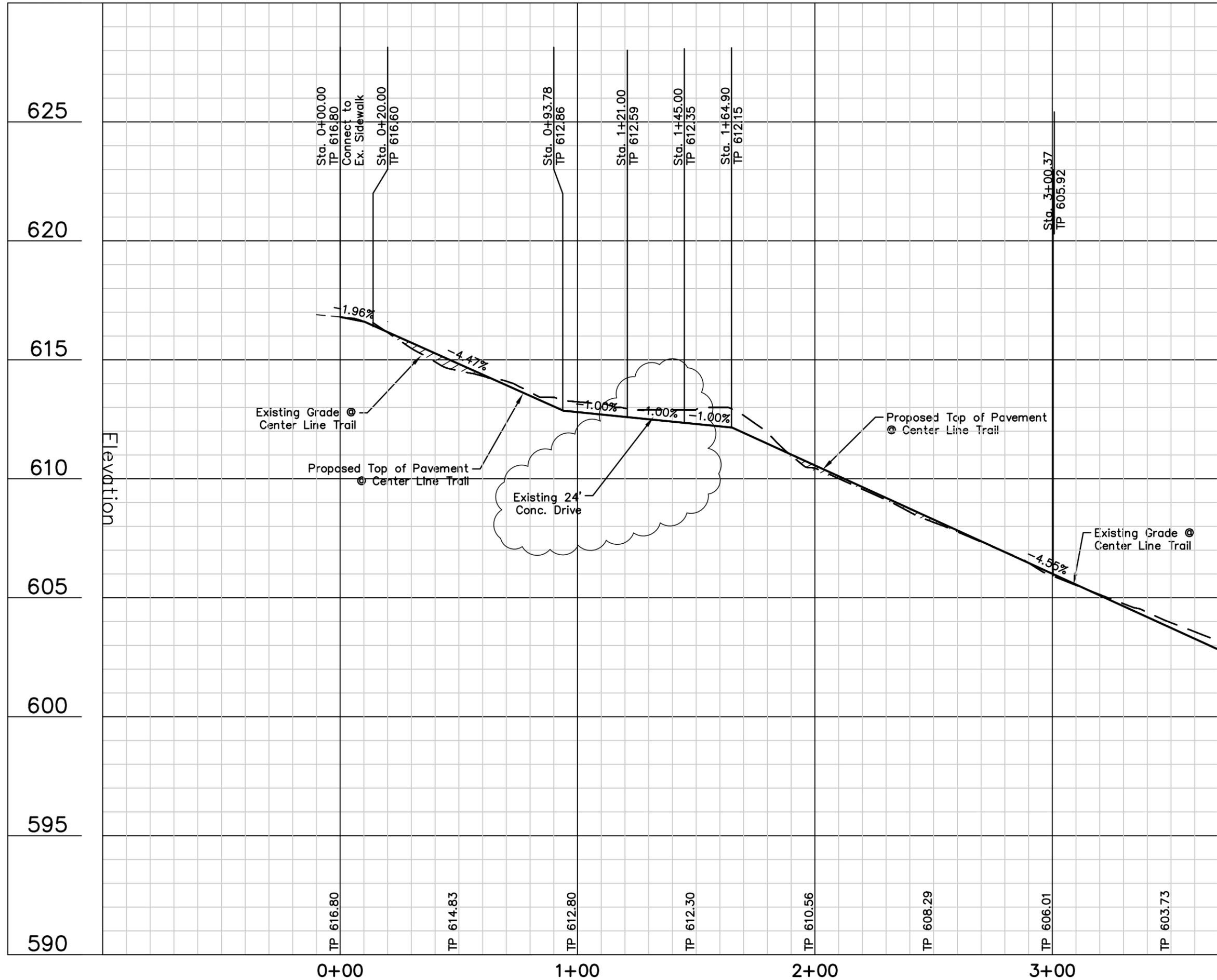
3.12 CLEAN UP

- A. Keep premises neat and orderly including organization of storage areas. Remove trash and debris from excavated planting areas, preparing beds, or planting plants from site daily as work progresses. Keep paved areas clean by sweeping or hosing.

3.13 EXTRA MATERIALS REQUIRED

- A. Contractor to install two @Tregator irrigation bags per new and relocated tree.
- B. Provide four additional @Tregator bags for Owner attic stock.

END OF SECTION 02009





TREEGATOR® ORIGINAL

SLOW RELEASE WATERING BAG FOR SHADE TREES

BENEFITS:

- *Ideal for newly planted shade or street trees.*
- *Reduces transplant and drought shock.*
- *100% water absorption with no run-off.*
- *Install and fill in minutes with no tools required.*
- *Deep water saturation with every fill.*
- *Fill just 1 to 2 times per week, or as needed.***
- *Promotes deep root growth.*
- *Non-invasive design will not harm existing landscape.*
- *Can be used with nutrient / chemical additives.***
- *Zip multiple bags together to accommodate large trees.*
- *Made in the U.S.A. with a 5-year limited warranty.*

**REFER TO WATERING CAPACITY / FREQUENCY CHART SHOWN BELOW

DESCRIPTION:

If you plant shade trees, you need a Treegator® Original Slow Release Watering Bag! Golf courses, parks, cities, nurseries, landscapers, DOT's, resorts and homeowners all love its simple, affordable patented tree watering technology. Makes anyone a watering professional. Perfect for newly planted or established trees up to 8" in caliper, with branches beginning at least 25 inches from the ground or higher. Save time, water, effort and trees!

SPECS:

Single bag fits min. 1 inch to max. 4 inch caliper tree with branches at least 25" from the ground or higher.
 Use a Double Bag setup (2 single bags zipped together back-to-back) to water 4 inch to 8 inch caliper trees.
 Made of green polyethylene with nylon webbing, black polyprop straps and green nylon zippers.
 2 water release points per bag.
 Bag is empty in approximately 5 to 9 hours.
 UV stabilized to withstand exposure to sunlight.
 Fill opening fits up to 3" diameter hose.

DIRECTIONS FOR USE:

Place around tree trunk, with the zippers on uphill side of tree.
 Wrap both sides around trunk until zippers meet and zip together from bottom to top.
 Lift tag to expose fill opening at top of bag.
 Insert hose into fill opening and begin filling with water.
 Fill bag to 1/4 capacity,
 Gently lift up on straps at top of bag to expand bottom.
 Fill to desired level and let empty.
 Continuously waters for approximately 5 to 9 hours.

MEASUREMENTS:

Full - 30" tall x 18" wide (at base)

WATERING CAPACITY / FREQUENCY CHART:

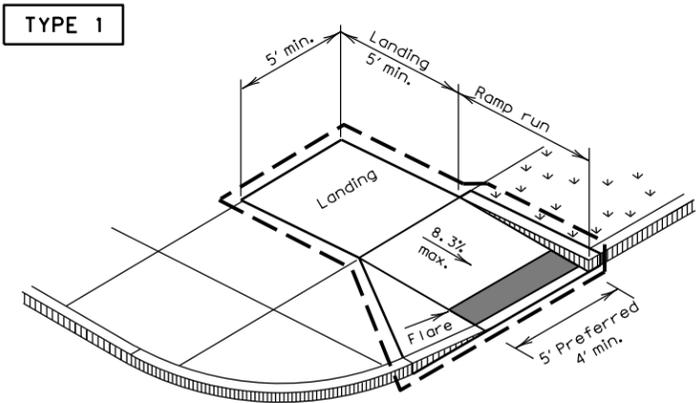
Treegator® Original Bag Setup	Trunk Caliper (diameter)	Approx. Water Capacity (per single bag)	Recommended Fills per Week
 Single Bag Setup	1 to 2 inch (3 to 5 cm)	15 gallons (56.78 liters)	1 Fill per Week
	2 to 3 inch (5 to 8 cm)	14.75 to 14.25 gallons (55.84 to 53.94 liters)	2 Fills per Week
 Double Bag Setup* (2 single bags)	0.00 inch (stand-alone†)	25 gallons (94.63 liters)	Varies based on application
	4 to 5 inch (10 to 13 cm)	23.50 gallons (89.95 liters)	1 Fill per Week
	5 to 8 inch (13 to 20 cm)	22.75 to 21.5 gallons (86.11 to 81.38 liters)	2 Fills per Week

*Double Bag setup is two (2) single Treegator® Original bags zipped together back-to-back.

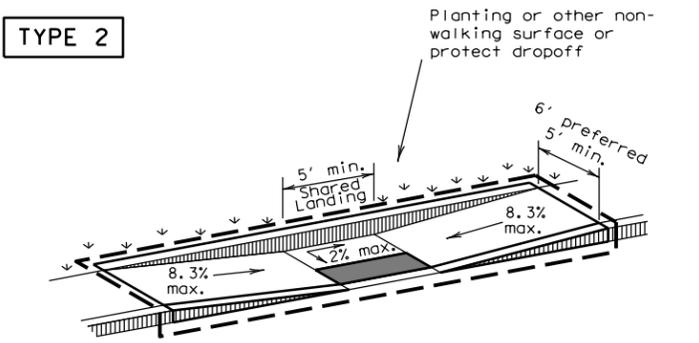
†When watering older established trees with fully developed root systems, a Double Bag setup can also be used as a stand-alone watering solution (i.e. not wrapped around a trunk)

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

DATE: FILE:

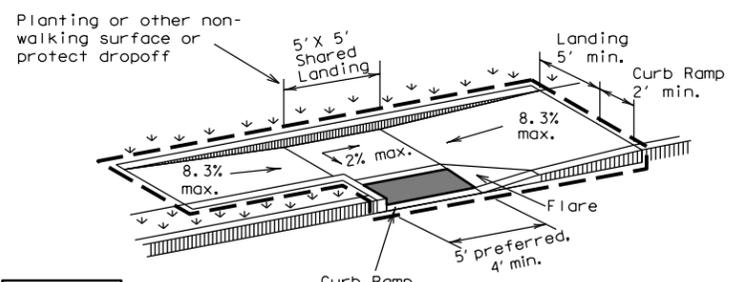


PERPENDICULAR CURB RAMP

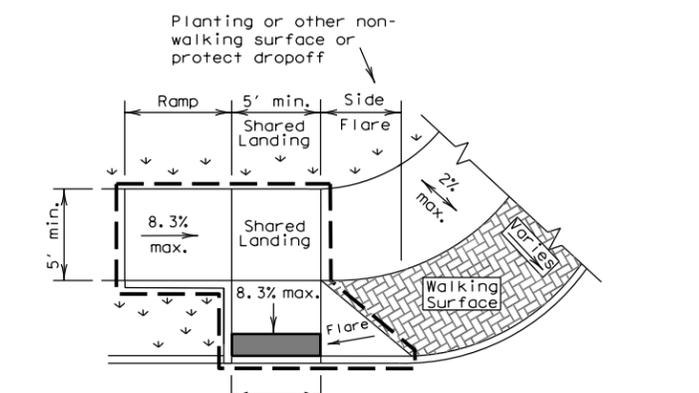


PARALLEL CURB RAMP

(Use only where water will not pond in the landing.)

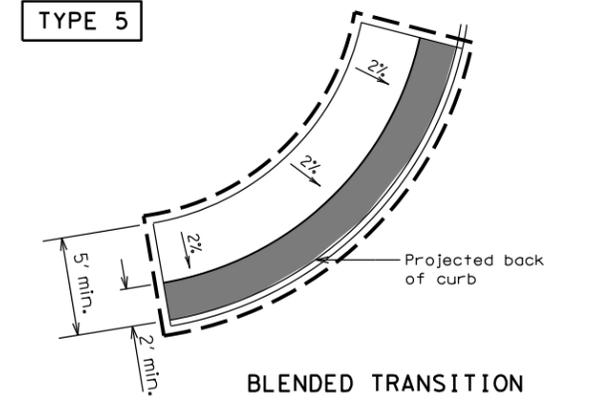


TYPE 3

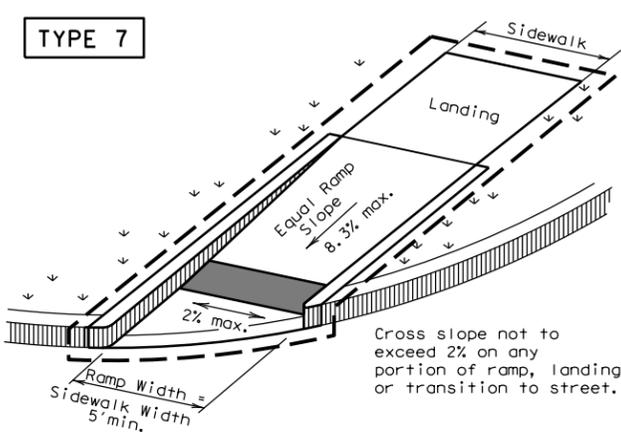


TYPE 6

COMBINATION CURB RAMPS

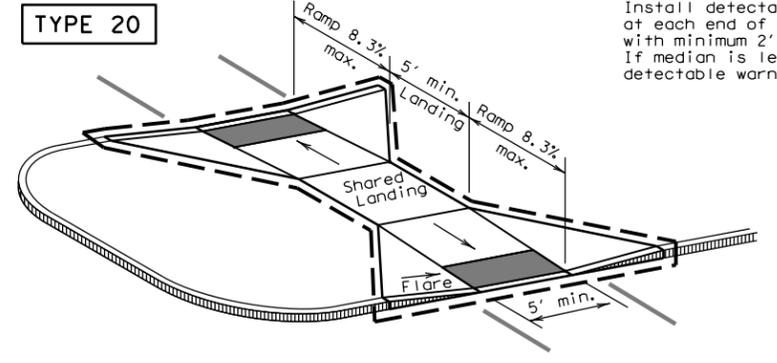


BLENDED TRANSITION

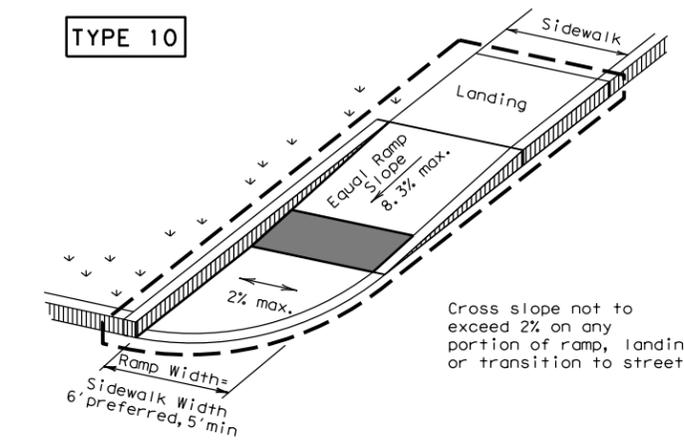


(Sidewalk set back from curb)

DIRECTIONAL RAMPS WITHIN RADIUS

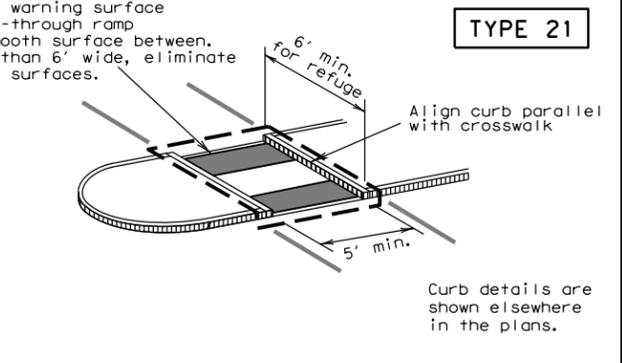


CURB RAMPS AT MEDIAN ISLANDS

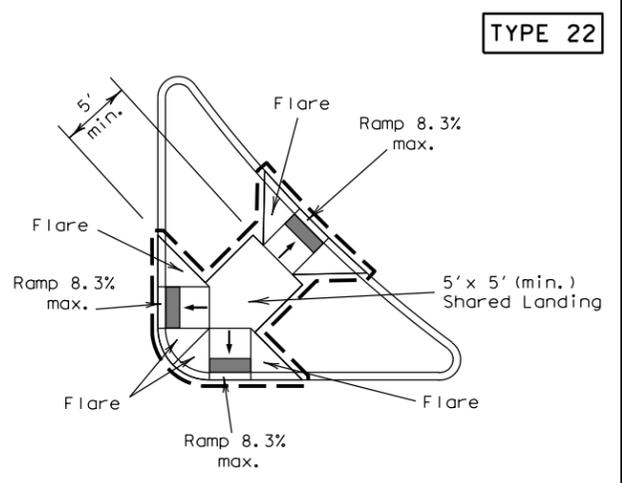


(Sidewalk adjacent to curb)

Cross slope not to exceed 2% on any portion of ramp, landing or transition to street.

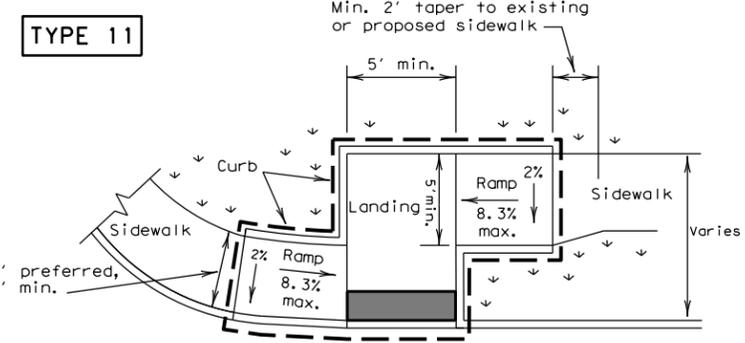


TYPE 21



TYPE 22

COMBINATION ISLAND RAMPS



OFFSET PARALLEL CURB RAMP

NOTES / LEGEND:

See General Notes on sheet 2 of 4 for more information.

Denotes planting or non-walking surface not part of pedestrian circulation path.

--- Ramp Limits of Payment

■ Detectable Warning Surface

PEDESTRIAN FACILITIES
CURB RAMPS

PED-12A

FILE: ped12A.dgn	DN: TxDOT	CK: PK	DW: TxDOT	CK: HD
© TxDOT March 2002	CONT	SECT	JOB	HIGHWAY
REVISIONS				
VP June 13, 2012	DIST	COUNTY	SHEET NO.	