

## ADDENDUM NUMBER 02

Project	LIPSEY'S	Date	03.17.2026
Project Location	HIGHLAND ROAD, ST. GEORGE, LA	Architect's Project Number	24.154
Owner/Client	LIPSEY'S		
To	ARKELE CONSTRUCTORS	Attention	NICK ZAEFF
<p>This Addendum will become part of the Contract Documents. The Contractor shall promptly inform subcontractors and all others performing or supplying any of the Work of all relevant contents of this Addendum. In case of conflicting provisions with previous addenda or communications, provisions in this Addendum supersede only those conflicting issues. It is the responsibility of the Contractor to notify all subcontractors from whom it accepts bids of all changes in the drawings and specifications covering this project. Receipt shall be acknowledged by inserting the addendum number and its date in the bid form.</p>			
Distribution	ARKELE, OWNER, CONSULTANTS		
Prepared by	Lori Prochaska	Date	03.17.2026
Instructions / Description / References / Dates			

### GENERAL:

Responses to RFI-01 and RFI-02 are attached.

### PRIOR APPROVALS:

### SPECIFICATIONS:

### DRAWINGS:

Delete the previously issued sheets and replace them with the attached:

G0.00.V1 TITLE SHEET  
 C3.01 GRADING & DRAINAGE PLAN

Add the following sheets:

C7.01	SUGGESTED EROSION CONTROL PLAN	CS.09	PM-01
CS.01	C-TTC-00 (A)	CS.10	PM-05
CS.02	C-TTC-00 (B)	CS.11	PM-08
CS.03	C-TTC-00 (C)	CS.12	HW90CMP
CS.04	C-TTC-00 (D)	CS.13	MC-01
CS.05	C-TTC-01	CS.14	MC-01
CS.06	C-TTC-02	CS.15	MC-01
CS.07	C-TTC-03	CS.16	MC-01
CS.08	C-TTC-09	CS.17	CB-ADJUST
		CS.18	CB-2TOP02
		CS.19	PC-01

				ARKEL CONSTRUCTORS LLC Request for Information	Bid RFI No: 1 Date Submitted:
<b>Project:</b> Lipsey's New Headquarters <b>A/E:</b> Ritter Maher <b>Contractor:</b> Arkel Constructors					
Item No.	Division/ Spec Section	Drawing Page	Detail Reference	Question	Response
1				Please provide type of pipe to be used for storm drainage.	<p><b>Acceptable Materials.</b></p> <p>When an item for storm drain pipe is identified in the Contract Documents, the Contractor may furnish pipe in accordance with LaDOTD Section 701. Where LaDOTD Section 701 applies, only the following pipe materials are permitted for storm drainage on this project unless a written alternate is approved by the Engineer and the permitting authority:</p> <p>Reinforced Concrete Pipe (RCP) conforming to ASTM C76/C76M (or as required by LaDOTD), or</p> <p>Thermoplastic/A200/HDPE (corrugated/plastic) pipe conforming to the applicable LaDOTD/plastic-pipe standard (and ASTM product standards), and installed per LaDOTD Section 1006 or 1016 (as applicable).</p> <p>Bidder shall assume RCP as the pipe material when (a) making connections to the public LADOTD subsurface drainage system and (b) open culverts, unless an approved alternate is provided by addendum.roduct</p> <p><b>Product Listing / Qualification.</b></p> <p>All proposed pipe products and drainage structures shall be listed on the LaDOTD Qualified Products List (QPL), or the East Baton Rouge Parish QPL / Standard Products List, or shall be otherwise specifically approved in writing by the Engineer prior to procurement. Products not on the LaDOTD QPL must be submitted as a formal alternate with full manufacturer documentation and will be considered at the Engineer/Owner/Agency's discretion.</p>
2				Please provide information for sewer the lift station.	<p>The sanitary lift station (LS) and force main (FM) are intended as a package pump station sized to service the warehouse. Final pump selection, station manufacturer, and force main diameter/routing are still under review by the Owner's civil/MEP team and will be issued in a subsequent set.</p> <p><b>For bidding purposes :</b> Contractor shall include a Lift Station &amp; Force Main Allowance (lump sum) to provide a package pump station and a 4' force main, 300 LF to the receiving manhole, including all excavation, connections, electrical stub, testing, permits, and startup. Final equipment and connection details will be furnished prior to construction.</p>
3		C4.01		Should we use the details for the Highland Rd right turn lane for the St. George turn lane as well?	Yes, for bidding, use the Highland Road right-turn lane typical sections and details shown on C4.01 as the basis for the St. George turn lane. Important: final use of this detail is subject to formal acceptance/approval by the City of St. George (jurisdictional review).
4				What will the contraction joint spacing be for the paving to account for the dowel baskets?	<p>Concrete pavement construction shall be performed in accordance with ACI-330 (guide for Design and Construction of Concrete Parking Lots). Areas of heavy-duty paving shall be constructed in accordance with ACI-325 (Guide for Construction of Concrete Pavements).</p> <p>(-) Spacing: Maximum 12.5 ft O.C. (transverse and longitudinal) for 5" &amp; 6" pavement thickness. Maximum 15.0 ft O.C. for 7" and 8" pavement thickness.</p> <p>(-) Depth: Saw/groove to <math>\geq \frac{1}{4}</math> of slab thickness; early-entry initial cut per ACI requirements.</p> <p>(-) Timing: Saw as soon as the slab can be cut without raveling/spalling (follow guidance on current/expected site conditions) and before uncontrolled shrinkage cracking.</p> <p>(-) Dowel / load transfer: Where required, provide dowels per ACI Dowels to be true/perpendicular, greased on one side and secured during placement.</p> <p>(for 8-in slab:1" dia., 6" embed, spaced 12" O.C.)  (for 7-in slab:7/8" dia., 6" embed, spaced 12" O.C.)  (for 6-in slab:3/4" dia., 6" embed, spaced 12" O.C.)  (for 5-in slab:5/8" dia., 5" embed, spaced 12" O.C.)</p> <p>Submittal: Contractor to submit joint/dowel layout and sawing procedure for Engineer review prior to paving.</p>
5				What will the expansion joint spacing be for the paving to account for the dowel baskets?	<p>Provide full-depth isolation/expansion joints where the slab abuts fixed objects (i.e. buildings, pole foundations, inlets, Manholes, curb terminations.,etc.)</p> <p>(-) Spacing: Maximum 60.0 ft. across pavement.</p>
6				Please clarify what type of reinforcing will go in the 3" architectural wythe in the insulated panels.	6x6 - W3.5xW3.5 WWF
7				Please confirm the architectural wythe is 3" concrete and the rigid insulation is 1" thick as shown below. I noticed the "2" insulation as provided w/Thermomass" note on the architectural drawing on A2/AW3.02	Yes, the architectural wythe is 3", and the insulation thickness is 1" thick.
8				Are there Mitigation Credits for this project already, or is that something the Site Contractor will have to deal with?	<p>The floodplain &amp; fill mitigation for Lot 10 was completed as part of EBR Development Project SD-2023-3391. The floodplain &amp; fill mitigation for the access road improvements on Lot 9-D s being permitted through the City of St. George as part of the project.</p> <p>Contractor should identify line-items or allowances that assume on-site compliance wna didentify a separate line item for mitigation credit work if they anticipate providing mitigation services.</p>
9				Can we use pre-cast concrete inlets?	<p>Precast inlets are acceptable for this project. Contractor may furnish either cast-in-place inlets or precast inlets in accordance with LADOTD Standard Specifications and Standard Plans, subject to the submittal and approval requirements in accordance with the below.</p> <p>(-) LADOTD Standard Specifications: Section 701 (Culverts &amp; Storm Drains) and Section 702 (Manholes, Junction Boxes, Catch Basins, and Endwalls).</p> <p>(-) LADOTD Standard Plans: PC-01 – Precast Catch Basins and Manholes, and applicable gutter/inlet standard plan indexes.</p> <p>NOTE: Drainage structures shall be listed on the LaDOTD Qualified Products List (QPL), or the East Baton Rouge Parish QPL / Standard Products List,</p>
10				Will an erosion plan be provided?	Yes, Please see the added sheet, C7.0

Item No.	Division/ Spec Section	Drawing Page	Detail Reference	Question	Response
11				Is the 60" with Headwalls RCP or Box Culverts?	60" RCP with 90 degree headwalls, RE: LADOTD HW-90RCP2
12				Clarify that structure 3-1 is the box on the southwestern corner of the property? A Curb Inlet	Confirming that Structure A3-1 is a proposed curb inlet located on the western side of the truck exit drive at Highland Road (Southwest corner of Lot 10)
13				Provide details for Culvert D101	Proposed 60 RCP pipe information provided on SHT C3.01, RE: Drainage Pipe Data). Headwalls at the upstream and downstream end will be in accordance with LADOTD HW-90RCP2
14				I was reviewing the civil plans for this project and noticed on sheet C6.02, detail #14, it says that all drop inlets are to be either bricked or cast-in-place. No precast allowed. Is this definitive, or will precast boxes be allowed?	Precast inlets are acceptable for this project. Re: RFI 01, #9
15				Please provide a detail for the slab block out at columns in the office area.	See 10/S3.01, which applies at the office. 19/S3.03 applies at the warehouse. We will update our details so that this is more clear.
16				Please confirm normal weight concrete is to be used for slab on deck, not lightweight.	Normal-weight
17				The elevations on the grading plan do not match with the structural/architectural design along the north wall of the warehouse, especially in the NW corner.	Acknowledged. The project team is reviewing elevation conflicts between the grading plan and the building elevations along the north wall (NW corner).
18				The civil drawings reference sheet CP-01, but it is not provided.	CP-01 is a reference to LADOTD CP-01 - Portland Cement Concrete Pavement Details. Please find included the 3 CP-01 standard plan sheets.
19				Please provide a plan showing existing grades. The current grading sheet lacks grades on the south end of the project.	Existing survey and model files (CAD + LandXML) have been provided for bidding. The LandXML file contains existing surface data and a preliminary grading surface prepared for design coordination only. The Contractor shall field-verify all existing elevations, utilities, structures and boundaries prior to bidding and prior to commencing work.
20				Please confirm the size of the force main piping, currently shown to be 1/4".	Please refer to RFI 01, #2.  Materials / installation: For bidding purposes assume AWWA-rated pressure pipe or equivalent acceptable to the Engineer; Bedding/embedment per the Geotechnical Report and manufacturer recommendations.

Project: Lipsey's New Headquarters		Request for Information		Bid RFI No: 2	
A/E: Ritter Maher				Date Submitted: 3/16/2026	
Contractor: Arkel Constructors					
Item No.	Division/Spec Section	Drawing Page	Detail Reference	Question	Response
1	C6.01		Paving	Please clarify the required reinforcement in all types of paving.	<p>Per 3/17/26 "Lipsey's Geotech Discussion" conference call. The 4" aggregate base recommendation has been replaced with slab-on-compacted grade recommendation (no aggregate base) and includes required geotech acceptance prior to paving. An official revised memo is expected to be incorporated for documentation purposes.</p> <p>As a result of pavement slab-on-compacted grade and in accordance with pavement reinforcing required to follow ACI-302/ACI-325, distributed reinforcing is being added to all paving sections as follows:</p> <p>(-) 5" (Parking Stalls):          --&gt; Distributed reinforcement: 6x6-W2.9 x W2.9, ASTM A1064/A1064M in upper 1/3          --&gt; Dowel/Load transfer: Per RFI 01, #4 &amp; #5.          --&gt; Spacing: : Per RFI 01, #4 &amp; #5.</p> <p>(-) 6" (Vehicle Aisles):          --&gt; Distributed reinforcement: 6x6-W2.9 x W2.9, ASTM A1064/A1064M in upper 1/3          --&gt; Dowel/Load transfer: Per RFI 01, #4 &amp; #5.          --&gt; Spacing: : Per RFI 01, #4 &amp; #5.</p> <p>(-) 7" (Entrance Drive/Truck Routes):          --&gt; Distributed reinforcement: 6x6-W4.0 x W4.0, ASTM A1064/A1064M in upper 1/3          --&gt; Dowel/Load transfer: Per RFI 01, #4 &amp; #5.          --&gt; Spacing: : Per RFI 01, #4 &amp; #5.</p> <p>* Intall 24" wide non-woven geotextile fabric centered on all contraction and isolation</p>
2			Tilt Wall	Is there a spec on the form liner pattern for the tilt wall panels available? I did not see a specific pattern called out on the drawings or in the 03 47 13 tilt-up concrete specs.	The basis of design is Fitzgerald Pattern 14331 Fluted Rib Formliner.
3	C3.01		Concrete	It was mentioned at the pre-bid meeting about having cast-in-place stairs at the building stoops or some type of stepping system on the side of the building along plan northeast side to accommodate for the roughly 4'-0" drop from finish floor. Do you have a typical detail in mind to reference for that?	GC to provide stairs similar to A2/AW4.30 with a concrete 5' x 5' level landing at the base of the stair connected to a 5' wide ADA curb ramp to the driveway.
4	A1.21		cast in place concrete	Sheet A1.21 and A4.02, the monument stairs in the office gallery 113 along the warehouse tilt wall panels appears to have some type of stair base/step seating scenario. Will this be built up wood construction, cold form steel or concrete with foam and topping slab (see yellow highlighted area)?	Foam and topping slab. Details will be issued in Volume 2 Bid Set.
5	A1.21		cast in place concrete	See sheet A1.21. Will the yellow area below receive concrete locker bases, something like a 4" housekeeping pad under the lockers?	A housekeeping pad is not required under the lockers.
6	S2.03		cast in place concrete	See attached S2.03 with three clouds around pier caps or grade beams. What are they? I need dimensions and reinforcing requirements.	
7	Civil Paving			Please clarify the required joint spacing for each paving thickness for the following joint types: • Longitudinal Key Joint - Detail 6/C6.01	Please refer to RFI 01, #4
8	Civil Paving			Sidewalk to Paving Connection Detail 7 on Sheet C6.03 shows conflicting conditions: • Section C indicates a sidewalk turndown where sidewalk meets paving. • Section B indicates a 6" pin-on curb at the same condition.	<p>Please price the Sidewalk Turndown Condition (Section C).</p> <p>In addition, please remove identified 1/2" redwood Expansion Joint and replace with:          Joint Filler: 3/4" full-depth premolded compressible joint filler conforming to ASTM D1752 installed full thickness + recessed 1/2" below finished slab surface. Install filler per manufacturer's instructions and recess to receive joint sealant</p> <p>Sealant: After joint filler installation and concrete curing, please install joint sealant compatible with Joint Filler.</p>

Item No.	Division/ Spec Section	Drawing Page	Detail Reference	Question	Response
9				Please confirm which condition should be included in our pricing Sidewalk Isolation Joint at Building Section D appears to indicate an isolation/expansion joint where the sidewalk meets building foundations. However, the detail appears to be incomplete and does not specify the joint material. Please confirm the required joint material at this location.	Please use: Joint Filler: 3/4" full-depth premolded compressible joint filler conforming to ASTM D1752 installed full thickness + recessed 1/2" below finished slab surface. Install filler per manufacturer's instructions and recess to receive joint sealant  Sealant: After joint filler installation and concrete curing, please install joint sealant compatible with Joint Filler.
10	CIP Concrete			Please confirm whether a continuous perimeter footing is required where the tilt-up panels bear. If a perimeter footing is required, please provide: • Footing dimensions • Reinforcement requirements • Whether footing size/reinforcing changes based on panel thickness	
11	CIP Concrete			<b>Pier Cap / Footing Schedule</b> The plans appear to be missing a footing or pier cap schedule. Pier caps shown on Sheet S2.05 (where the office foundations meet the warehouse foundations) are not referenced by any detail. Please confirm whether these pier caps are intended to match the interior footing details shown in Details 12, 16, and 20 on Sheet S3.02.	
12	CIP Concrete			<b>Capillary Barrier at Building Foundations</b> Volume 1 of the Project Manual indicates that floor slab support (capillary barrier) is to include 4" base course meeting ACI 302 material specifications (Page 101 of 174). Please confirm if this required and the location of the capillary barrier.	
13	CIP Concrete			Confirm the foundation detail between the office and warehouse.	
14	Earthwork			Please clarify the subgrade preparation required at the building pad. The Geotech report references a 3' undercut/buffer, but also indicates that passing a proof roll is sufficient.	Contractor to refer to outcome of 3/17/26 "Lipsey's Geotech Discussion" conference call.



**LIPSEY'S**  
AIM HIGHER

# LIPSEY'S NEW HEADQUARTERS

HIGHLAND ROAD  
ST. GEORGE, LA 70809

VOLUME 1  
ISSUED FOR BID



All drawings and written material appearing herein constitute original and unpublished work of the architect and may not be duplicated used or disclosed without written consent of architect. Do not scale drawings. Use given dimensions only. If not shown, verify correct dimensions with the architect. Contractor shall check and verify all dimensions and conditions at job site. Any and all quantities which are included within this material are approximate and for estimating purposes only. Contractor shall be responsible for verifying actual quantities when constructing project.

KEY PLAN:

## INDEX OF DRAWINGS

<b>GENERAL</b>	<b>STRUCTURAL</b>
G0.00.V1 TITLE SHEET	S0.01 GENERAL NOTES
<b>CIVIL</b>	S0.02 GENERAL NOTES AND WIND DIAGRAMS
C0.01 GENERAL NOTES	S1.01 OVERALL FOUNDATION PLAN
C1.01 DEMOLITION PLAN	S1.02 OVERALL MEZZANINE FLOOR FRAMING PLAN
C2.01 SITE PLAN	S1.03 OVERALL ROOF FRAMING PLAN
C3.01 GRADINGS & DRAINAGE PLAN	S2.01 PARTIAL FOUNDATION PLAN - AREA A
C4.01 PAVING PLAN	S2.02 PARTIAL FOUNDATION PLAN - AREA B
C5.01 UTILITY PLAN	S2.03 PARTIAL FOUNDATION PLAN - AREA C
C6.01 SITE DETAILS	S2.04 PARTIAL FOUNDATION PLAN - AREA D
C6.02 SITE DETAILS	S2.05 FOUNDATION PLAN - OFFICE
C6.03 SITE DETAILS	S2.10 MEZZANINE FLOOR FRAMING PLANS
C7.01 SUGGESTED EROSION CONTROL PLAN	S2.11 SECOND FLOOR FRAMING PLAN - OFFICE
	S2.12 THIRD FLOOR FRAMING PLAN - OFFICE
<b>CIVIL SUPPLEMENT</b>	S2.20 ROOF FRAMING PLAN - OFFICE
CS.01 C-TTC-00 (A)	S2.21 PARTIAL ROOF FRAMING PLAN - AREA A
CS.02 C-TTC-00 (B)	S2.22 PARTIAL ROOF FRAMING PLAN - AREA B
CS.03 C-TTC-00 (C)	S2.23 PARTIAL ROOF FRAMING PLAN - AREA C
CS.04 C-TTC-00 (D)	S2.24 PARTIAL ROOF FRAMING PLAN - AREA D
CS.05 C-TTC-01	S3.01 FOUNDATION DETAILS
CS.06 C-TTC-02	S3.02 FOUNDATION DETAILS
CS.07 C-TTC-03	S3.03 FOUNDATION DETAILS
CS.08 C-TTC-09	S3.04 FOUNDATION DETAILS
CS.09 PM-01	S4.01 FRAMING DETAILS
CS.10 PM-05	S4.02 FRAMING DETAILS
CS.11 PM-08	S4.03 FRAMING DETAILS
CS.12 HW90CMP	S4.11 FRAMING DETAILS
CS.13 MC-01	S4.12 FRAMING DETAILS
CS.14 MC-01	S4.13 FRAMING DETAILS
CS.15 MC-01	S4.21 TYPICAL BUILDING SECTION
CS.16 MC-01	S5.01 PANEL DETAILS
CS.17 CB-ADJUST	S5.02 PANEL DETAILS
CS.18 CB-2T0P02	S5.03 PANEL DETAILS
CS.19 PC-01	S5.04 PANEL DETAILS
	S5.11 PANEL ELEVATIONS
	S5.12 PANEL ELEVATIONS
	S5.13 PANEL ELEVATIONS
	S5.14 PANEL ELEVATIONS
	S5.15 PANEL ELEVATIONS
	S5.16 PANEL ELEVATIONS
	S6.01 BRACE ELEVATIONS & DETAILS
	S6.02 BRACE DETAILS

## PROJECT DIRECTORY

**ARCHITECT:**  
RITTER MAHER ARCHITECTS, LLC  
2987 GOVERNMENT STREET, 2nd FLOOR  
BATON ROUGE, LA 70806  
P 225.383.4321  
PROFESSIONAL OF RECORD: STEVE MAHER, FAIA  
CONTACT: LORI PROCHASKA  
LPROCHASKA@RITTERMAHER.COM

**INTERIOR DESIGN:**  
RITTER MAHER ARCHITECTS, LLC  
2987 GOVERNMENT STREET, 2nd FLOOR  
BATON ROUGE, LA 70806  
P 225.383.4321  
CONTACT: ALAINA BRUCE, NCIDQ, IDA  
ABRUCE@RITTERMAHER.COM

### WAREHOUSE ARCHITECT:

POWERS BROWN ARCHITECTS  
2100 TRAVIS STREET, SUITE 501  
HOUSTON, TX 77002  
P 225.224.0457  
CONTACT: KRISTEN STAPPER  
STAPPER@POWERSBROWN.COM

### CIVIL:

HEBRON ENGINEERING SERVICES, LLC  
14481 OLD HAMMOND HWY  
BATON ROUGE, LA 70816  
P 225.964.0730  
CONTACT: BRANDON HEBRON, PE, LSI, PMP  
BRANDON@HEBRON@HESCONNECTS.COM

### MEP ENGINEERS:

SALAS O'BRIEN  
5215 ESSEN LANE, SUITE 100  
BATON ROUGE, LA 70800  
P 225.766.8002  
JACOB TRUAX, PE  
JACOB.TRUAX@SALASOBRIEN.COM

### GEOTECHNICAL:

TERRACON  
2822-B O'NEAL LANE  
BATON ROUGE, LA 70816  
P 225.752.0095  
CONTACT: RYAN POINDEXTER, PE  
RYAN.POINDEXTER@TERRACON.COM

### STRUCTURAL ENGINEERS:

PINNACLE STRUCTURAL ENGINEERS  
1801 CAMELLIA BLVD, SUITE 201  
BATON ROUGE, LA 70508  
P 348.305.0789  
HEATH MICHEL, PE  
HM@PINNACLESTRUCTURAL.COM

### LANDSCAPE:

CARBO  
6633 GOVERNMENT STREET  
BATON ROUGE, LA 70806  
P 225.302.7452  
ZACHARY BROUSSARD  
ZBROUSSARD@CARBO.LA.COM

### SURVEY:

LANDSOURCE  
6730 EXCHEQUER DRIVE  
BATON ROUGE, LA 70809  
P 225.752.0095  
CONTACT: DAVID PATTERSON, PLS  
PATTERSON@LANDSOURCE.COM

## VICINITY MAP, N.T.S.



## PROJECT DESCRIPTION

THE PROJECT NEW CONSTRUCTION FOR LIPSEY'S. THE PROJECT CONSISTS OF A ONE STORY WAREHOUSE BUILDING WITH AN ADJACENT, THREE STORY OFFICE BUILDING. BOTH BUILDINGS ARE TYPE IIB CONSTRUCTION, FULLY SPRINKLERED, THE BUILDINGS ARE SEPARATED BY A 3 HOUR RATED FIRE WALL. THE WAREHOUSE UTILIZES TILT-WALL CONSTRUCTION AND THE OFFICE UTILIZES STRUCTURAL STEEL FRAME CONSTRUCTION.

THE PROJECT IS DIVIDED INTO TWO VOLUMES. VOLUME 1 IS A SITE PACKAGE COMPRISED OF THE CIVIL AND STRUCTURAL SCOPE. VOLUME 2 IS A BUILDING PACKAGE AND IS COMPRISED OF ARCHITECTURAL (OFFICE AND WAREHOUSE), FIRE PROTECTION, PLUMBING, MECHANICAL, ELECTRICAL, AND LANDSCAPE.

SEAL:



### REVISION SCHEDULE

NO.	DATE	DESCRIPTION
11.18.2025	SD	
01.16.2026	100% DP	
02.27.2026	ISSUED FOR BID	
1.03.17.2026	ADDENDUM 2	

## LIPSEY'S NEW HEADQUARTERS

HIGHLAND RD, ST. GEORGE, LA

RMA PROJECT NO.: 24.154

TITLE SHEET

G0.00.V1

**ITTER MAHER ARCHITECTS**  
 2987 Government Street | Baton Rouge, LA 70806  
 P 225.383.4321  
 RITTERMAHER.COM

CONSULTANT:  
  
**HEBRON ENGINEERING SERVICES, LLC**  
 Brandon.Hebron@HESconnects.com | 225.964.0730

All drawings and written material appearing herein constitute original and unpublished work of the architect and may not be duplicated used or disclosed without written consent of architect. Do not scale drawings. Use given dimensions only. If not shown, verify correct dimensions with the architect. Contractor shall check and verify all dimensions and conditions of job site. Any and all quantities which are included within this material are approximate and for estimating purposes only. Contractor shall be responsible for verifying actual quantities when constructing project.

KEY PLAN:

STRUCTURE DESIGNATION	STRUCTURE TYPE	DETAIL	STRUCTURE INVERT	TOP
A1-1	GRATE INLET	702-12	17.83'	24.30'
A1-2	GRATE INLET	702-12	18.82'	24.24'
A1-3	GRATE INLET	702-12	19.50'	23.77'
A2-1	CURB INLET	702-12	14.42'	23.56'
A2-2	GRATE INLET	702-12	15.50'	19.75'
A3-1	CURB INLET	702-01	19.83'	24.36'
B1-1	GRATE INLET	702-12	8.08'	24.89'
B1-2	GRATE INLET	702-12	14.99'	25.28'
B1-3	GRATE INLET	702-12	16.00'	25.28'
B1-4	GRATE INLET	702-12	17.18'	25.09'
B1-5	GRATE INLET	702-12	17.58'	25.37'
B1-6	GRATE INLET	702-12	18.06'	22.50'
B1-7	GRATE INLET	702-12	19.00'	22.50'
B2-1	GRATE INLET	702-12	7.26'	20.83'
B2-2	GRATE INLET	702-12	18.44'	22.85'
B3-1	GRATE INLET	702-12	5.75'	19.59'
B3-2	CURB INLET	702-01	13.23'	19.23'
B3-3	CURB INLET	702-01	13.92'	20.69'
B3-4	CURB INLET	702-01	14.62'	20.56'
B3-5	CURB INLET	702-01	15.31'	21.08'
B3-6	CURB INLET	702-01	16.00'	23.03'

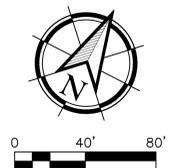
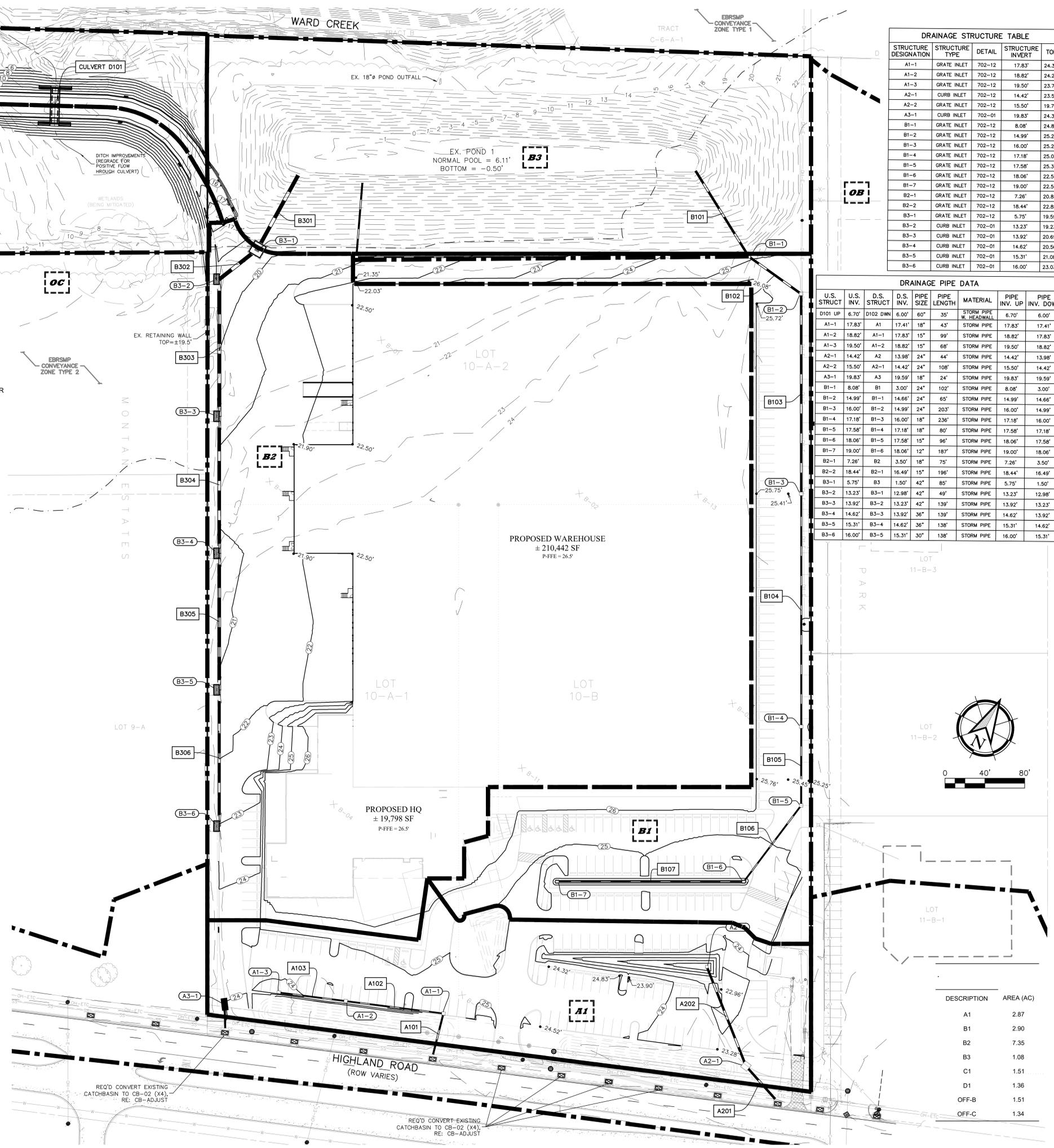
U.S. STRUCT	U.S. INV.	D.S. STRUCT	D.S. INV.	PIPE SIZE	PIPE LENGTH	MATERIAL	PIPE INV. UP	PIPE INV. DOWN
D101 UP	6.70'	D102 DWN	6.00'	60"	35'	STORM PIPE W. HEADWALL	6.70'	6.00'
A1-1	17.83'	A1	17.41'	18"	43'	STORM PIPE	17.83'	17.41'
A1-2	18.82'	A1-1	17.83'	15"	99'	STORM PIPE	18.82'	17.83'
A1-3	19.50'	A1-2	18.82'	15"	68'	STORM PIPE	19.50'	18.82'
A2-1	14.42'	A2	13.98'	24"	44'	STORM PIPE	14.42'	13.98'
A2-2	15.50'	A2-1	14.42'	24"	108'	STORM PIPE	15.50'	14.42'
A3-1	19.83'	A3	19.59'	18"	24'	STORM PIPE	19.83'	19.59'
B1-1	8.08'	B1	3.00'	24"	102'	STORM PIPE	8.08'	3.00'
B1-2	14.99'	B1-1	14.66'	24"	65'	STORM PIPE	14.99'	14.66'
B1-3	16.00'	B1-2	14.99'	24"	203'	STORM PIPE	16.00'	14.99'
B1-4	17.18'	B1-3	16.00'	18"	236'	STORM PIPE	17.18'	16.00'
B1-5	17.58'	B1-4	17.18'	18"	80'	STORM PIPE	17.58'	17.18'
B1-6	18.06'	B1-5	17.58'	15"	96'	STORM PIPE	18.06'	17.58'
B1-7	19.00'	B1-6	18.06'	12"	187'	STORM PIPE	19.00'	18.06'
B2-1	7.26'	B2	3.50'	18"	75'	STORM PIPE	7.26'	3.50'
B2-2	18.44'	B2-1	16.49'	15"	196'	STORM PIPE	18.44'	16.49'
B3-1	5.75'	B3	1.50'	42"	85'	STORM PIPE	5.75'	1.50'
B3-2	13.23'	B3-1	12.98'	42"	49'	STORM PIPE	13.23'	12.98'
B3-3	13.92'	B3-2	13.23'	42"	139'	STORM PIPE	13.92'	13.23'
B3-4	14.62'	B3-3	13.92'	36"	139'	STORM PIPE	14.62'	13.92'
B3-5	15.31'	B3-4	14.62'	36"	138'	STORM PIPE	15.31'	14.62'
B3-6	16.00'	B3-5	15.31'	30"	138'	STORM PIPE	16.00'	15.31'

- GENERAL GRADING NOTES:**
- LOUISIANA LAW REQUIRES A MINIMUM OF 48 HOURS NOTICE TO UNDERGROUND UTILITY OWNERS BEFORE YOU PERFORM ANY DIGGING OR DEMOLITION AS REQUIRED BY THE "LOUISIANA UNDERGROUND UTILITIES AND FACILITIES DAMAGE PREVENTION LAW". CONTRACTORS SHALL LOUISIANA ONE CALL AT 1-800-272-3020.
  - CONTRACTOR SHALL VERIFY BUILDING AND PARKING LOT LAYOUT WITH THE ARCHITECT PRIOR TO FORMING OF BUILDINGS, WALKS AND PARKING LOT AREAS.
  - CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL EXISTING UTILITIES WITHIN WORK AREAS PRIOR TO EXCAVATION.
  - ALL PAVEMENT GRADES SHOWN ARE TOP OF CONCRETE UNLESS NOTED. TOP OF CURBS IS 6-INCHES HIGHER THAN ELEVATION SHOWN.
  - ALL MANHOLE AND INLET TOP ELEVATIONS LISTED ARE APPROXIMATE. CONTRACTOR IS RESPONSIBLE FOR SETTING ALL TOP ELEVATIONS FLUSH WITH FINISH GRADE AND SLOPED IF PAVEMENT IS TO BE SLOPED.
  - CONTRACTOR SHALL BACK FILL AGAINST TOP OF CURBS AT 3:1 SLOPE TO EXISTING GRADE UNLESS NOTED OTHERWISE.
  - SLOPE OF PAVING SHALL NOT EXCEED 2% AT HANDICAP ACCESSIBLE SPACES.
  - CONTRACTOR SHALL GRADE PAVEMENT AROUND SIDEWALKS & CURBS FOR POSITIVE DRAINAGE TO AN INLET OR DESIGNATED DRAINAGE AREA.
  - THE CONTRACTOR MUST HAVE WRITTEN APPROVAL FROM THE CITY ENGINEER AND THE PROJECT ENGINEER BEFORE ANY CHANGE IN DESIGN IS MADE.
  - THE CONTRACTOR SHALL NOT ENTER UPON NOR CAUSE DAMAGE TO ANY ADJACENT PROPERTIES WITHOUT WRITTEN PERMISSION FROM SAID PROPERTY OWNERS.
  - ALL FILL LIFTS SHALL BE COMPACTED TO A MINIMUM DENSITY OF 95% OF THE STANDARD PROCTOR DENSITY (ASTM D-698) WITH SUITABLE FILL MATERIAL ACCEPTABLE TO TESTING LABORATORY. MAXIMUM LOOSE LIFT TO BE 8".

DESCRIPTION	AREA (SF)	% OF SITE
<b>TOTAL SITE AREA</b>	<b>743,707</b>	<b>100%</b>
<b>PRE-DEVELOPMENT</b>		
<b>PERVIOUS AREA:</b>	<b>743,707</b>	<b>100.0</b>
EX. UNIMPROVED	741,251	99.7
EX. DELTA N.G. STATION	2,456	0.3
<b>POST-DEVELOPMENT</b>		
<b>IMPERVIOUS AREA:</b>	<b>453,099</b>	<b>60.9</b>
BLDG FOOTPRINT	232,656	31.3
VEHICULAR USE AREA	199,062	26.8
SIDEWALKS	18,925	2.5
EX. DELTA N.G. STATION	2,456	0.3
<b>PERVIOUS AREA:</b>	<b>290,608</b>	<b>39.1</b>

Description	Elevation (NAVD '88) (FT)	Freeboard (FT)	Controlling Elevation (NAVD '88)
FEMA Base Flood Elevation (BFE) (COSG 25-08-0171)	20.00	1	21.00
Community Determined Flood Elevation (COSG 25-08-0171)	18.80	1	19.80
Maximum Record Inundation	-	-	-
Street Cross-Section Elevation (Lowest) (Landscape Survey)	21.52	1	22.52
Controlling Sanitary Sewer Manhole Rim (Landscape Survey)	21.97	1	22.97

Natural Ground Ranges from 24' (Highland) to 6' (Lot 9-D)  
 Lowest parking area elevation, BFE-2' (UDC 7:15.21 H)



DESCRIPTION	AREA (AC)
A1	2.87
B1	2.90
B2	7.35
B3	1.08
C1	1.51
D1	1.36
OFF-B	1.51
OFF-C	1.34

SEAL



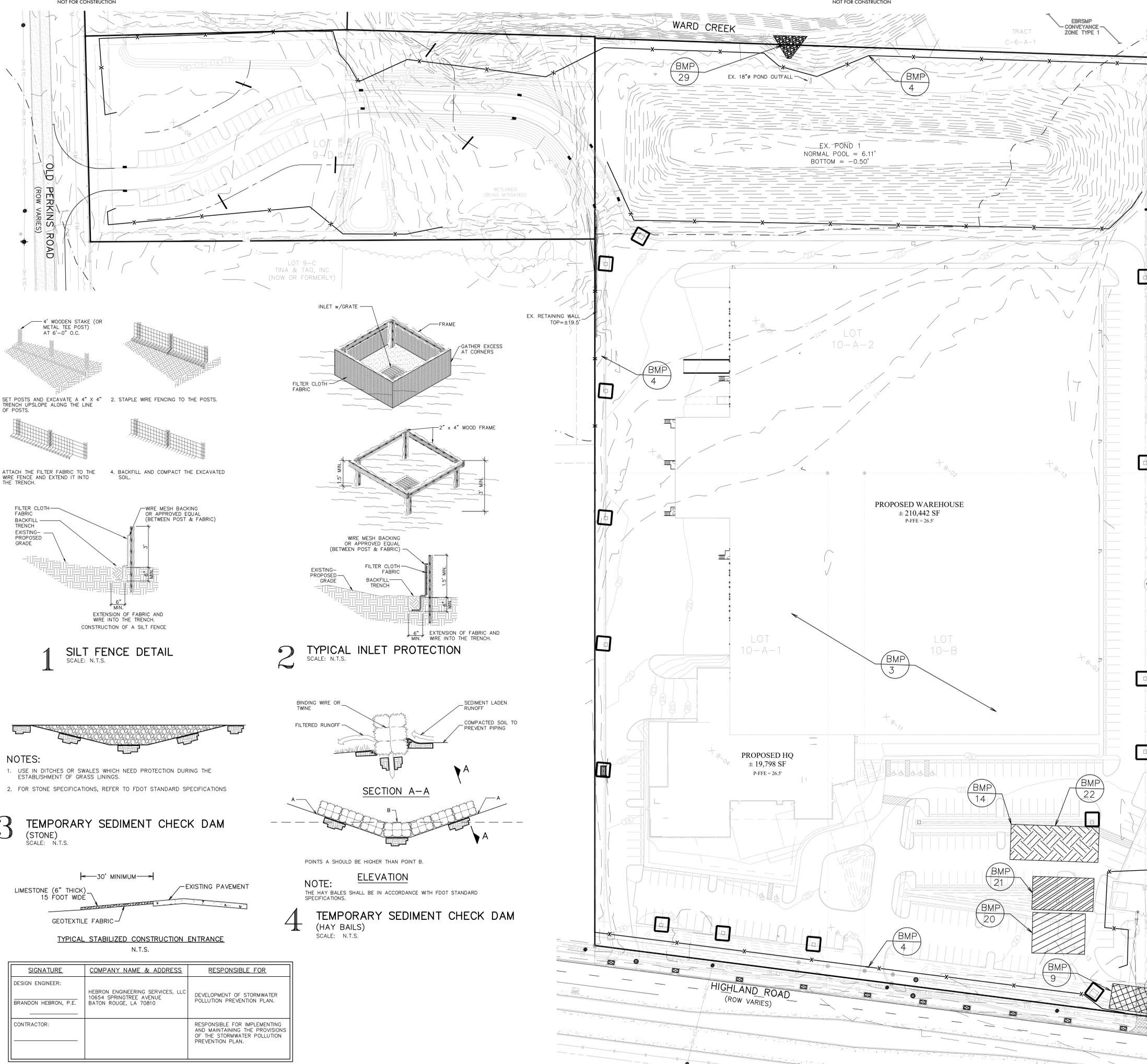
BRANDON S. HEBRON  
 LICENSE NO. 98319  
 PROFESSIONAL ENGINEER IN  
 CIVIL ENGINEERING  
 02/27/26

REVISION SCHEDULE

NO.	DATE	DESCRIPTION
11.18.2025	SD	
01.16.2026	100% DD	
02.27.2026	ISSUED FOR BID	
03.16.2026	ADDENDUM #1	

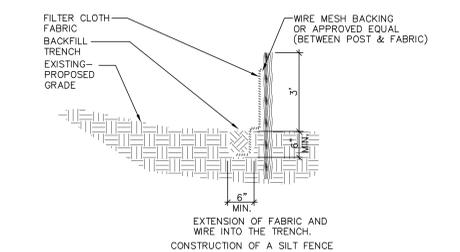
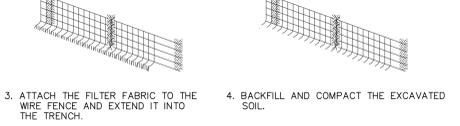
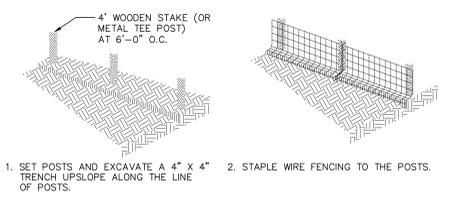
**LIPSEY'S NEW HEADQUARTERS**  
 HIGHLAND ROAD, ST. GEORGE, LA  
 RMA PROJECT NO.: 24.154

**GRADING & DRAINAGE PLAN**  
**C3.01**

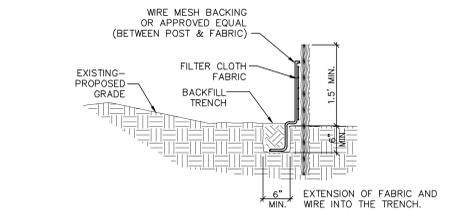
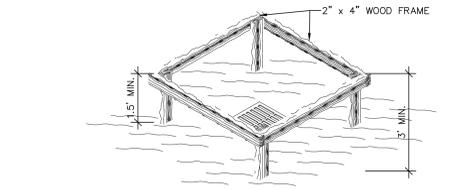
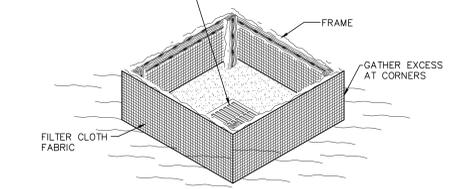


MINIMUM REQ'D BMP'S	BMP NUMBER	BMP NAME
	1	MULCHING
X	2	EROSION CONTROL MATS
X	3	VEGETATION/SEEDING
X	4	SILT FENCE
X	5	STRAW BALE DIKE
	6	TRIANGULAR SEDIMENT FILTER DIKE
	7	DIVERSION DIKE
X	8	INTERCEPTOR SWALE
X	9	STABILIZED CONSTRUCTION ENTRANCE
X	10	CHECK DAMS
X	11	DUST CONTROL
X	12	INLET PROTECTION
X	13	DEWATERING OPERATIONS
X	14	MATERIAL DELIVERY AND STORAGE
X	15	SPILL PREVENTION AND CONTROL
	16	LIME STABILIZATION
	17	SAND BAG BERM
	18	SEDIMENT BASIN
X	19	STONE OUTLET SEDIMENT TRAP
X	20	VEHICLE AND EQUIPMENT CLEANING
X	21	VEHICLE AND EQUIPMENT FUELING
X	22	SOLID WASTE MANAGEMENT
X	23	HAZARDOUS WASTE MANAGEMENT
X	24	CONCRETE WASTE MANAGEMENT
	25	SANDBLASTING WASTE MANAGEMENT
	26	CONTAMINATED SOIL MANAGEMENT
	27	SANITARY/SEPTIC WASTE MANAGEMENT
X	28	PIPE SLOPE DRAIN
	29	PERMANENT STRUCTURE CONTROLS
	30	TEMPORARY SEDIMENT TANK

- NOTES:**
- CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING THE PROVISIONS OF THE STORM WATER POLLUTION PREVENTION PLAN (S.W.P.P.P.)
  - UNCONTAMINATED CONSTRUCTION AND DEMOLITION (C.&D.) WASTE, SUCH AS CONCRETE AND WOOD COLLECTED DURING CHANNEL CLEARING MAY BE STORED IN NEAT PILES PROVIDED STORM WATER RUNOFF WILL NOT BE BLOCKED OR CONTAMINATED. STOCKPILED MATERIAL MUST BE REMOVED AND DISPOSED OF AT AN APPROVED L.D.E.Q. DISPOSAL SITE. (BMP-22)
  - ALL HAZARDOUS WASTE MATERIALS COLLECTED OR UTILIZED MUST BE STORED, USED, AND DISPOSED OF IN THE MANNER SPECIFIED BY L.D.E.Q. REGULATIONS AND BY THE MANUFACTURER. (BMP-23)
  - A STABILIZED CONSTRUCTION ENTRANCE MUST BE PROVIDED BY THE CONTRACTOR AT ALL SITE ACCESS POINTS TO MINIMIZE VEHICLE TRACKING OF MUD AND SEDIMENTS ONTO STREETS. STREETS ADJACENT TO SITE ENTRANCE AND EXITS MUST BE KEPT CLEAN OF EXCESS MUD, DIRT OR MATERIALS TRACKED FROM THE SITE. STABILIZED CONSTRUCTION ACCESS LOCATION AS SHOWN ON THE S.W.P.P.P. ARE ONLY SUGGESTIONS AND SHALL BE CONTROLLED BASED UPON ACCESS UTILIZED BY THE CONTRACTOR. (BMP-9)
  - THE CONTRACTOR MUST IMPLEMENT "GOOD HOUSEKEEPING" MEASURES TO KEEP THE CONSTRUCTION SITE IN A NEAT AND ORDERLY MANNER. (BMP-14, 21 & 22)
  - ALL EXPOSED DISTURBED SURFACES MUST BE SEEDED AND MULCHED TO ESTABLISH PERMANENT STABILIZATION. (BMP-3)
  - ALL INTERCEPTOR SWALES SHALL DRAIN THROUGH EITHER A HAYBALE OR SILT FENCE FILTER BEFORE DISCHARGING TO OUTFALL DRAIN.
  - SEE STANDARD PLAN 903-01 FOR DETAIL DESCRIPTION OF BMP'S.
  - SEE LADOTD STANDARD DETAILS EC-01 AND EC-02 FOR SILT FENCE INSTALLATION GUIDELINES.



**1 SILT FENCE DETAIL**  
SCALE: N.T.S.



**2 TYPICAL INLET PROTECTION**  
SCALE: N.T.S.

- NOTES:**
- USE IN DITCHES OR SWALES WHICH NEED PROTECTION DURING THE ESTABLISHMENT OF GRASS LININGS.
  - FOR STONE SPECIFICATIONS, REFER TO FDOT STANDARD SPECIFICATIONS

**3 TEMPORARY SEDIMENT CHECK DAM (STONE)**  
SCALE: N.T.S.

**ELEVATION**  
NOTE: THE HAY BALES SHALL BE IN ACCORDANCE WITH FDOT STANDARD SPECIFICATIONS.

**4 TEMPORARY SEDIMENT CHECK DAM (HAY BALES)**  
SCALE: N.T.S.

SIGNATURE	COMPANY NAME & ADDRESS	RESPONSIBLE FOR
DESIGN ENGINEER: BRANDON HEBRON, P.E.	HEBRON ENGINEERING SERVICES, LLC 10654 SPRINGTREE AVENUE BATON ROUGE, LA 70810	DEVELOPMENT OF STORMWATER POLLUTION PREVENTION PLAN.
CONTRACTOR:		RESPONSIBLE FOR IMPLEMENTING AND MAINTAINING THE PROVISIONS OF THE STORMWATER POLLUTION PREVENTION PLAN.

NOT FOR CONSTRUCTION

**ITTER MAHER ARCHITECTS**  
2987 Government Street | Baton Rouge, LA 70806  
p 225.383.4321  
RITTERMAHER.COM

CONSULTANT:

**HEBRON ENGINEERING SERVICES, LLC**  
Brandon.Hebron@HESconnects.com | 225.964.0730

All drawings and written material appearing herein constitute original and unpublished work of the architect and may not be duplicated used or disclosed without written consent of architect. Do not scale drawings. Use given dimensions only. If not shown, verify correct dimensions with the architect. Contractor shall check and verify all dimensions and conditions of job site. Any and all quantities which are included within this material are approximate and for estimating purposes only. Contractor shall be responsible for verifying actual quantities when constructing project.

KEY PLAN:

SEAL

REVISION SCHEDULE

NO.	DATE	DESCRIPTION
11.18.2025	SD	
01.16.2026	100% DD	
02.27.2026	ISSUED FOR BID	
03.16.2026	ADDENDUM #1	

**LIPSEY'S NEW HEADQUARTERS**  
HIGHLAND ROAD, ST. GEORGE, LA

RMA PROJECT NO.: 24.154

**SUGGESTED EROSION CONTROL PLAN**

# LaDOTD STANDARD PLANS & SPECIAL DETAILS

SHEET NO.

STD. No.

DESCRIPTION

100 - 107	TTC-00 (A-D), TTC-01, TTC-02, TTC-03, TTC-09	TEMPORARY TRAFFIC CONTROL (8 SHEETS)
108 - 110	PM-01, PM-05, PM-08	RAISED TRAFFIC MARKERS AND PAVEMENT MARKINGS (3 SHEETS)
111	HW-90RCP1	STRAIGHT HEADWALL FOR RCP ON A 90° CROSSING
112 - 115	MC-01	FRAME AND GRATE DETAILS (4 SHEETS)
116	CB-ADJUST	ADJUSTMENT/CONVERSION OF EXISTING CATCH BASIN
117	CB-2TOP02	DOUBLE OPEN TOP CATCH BASIN
118	PC-01	PORTLAND CEMENT CONCRETE PAVEMENT DETAILS

**GENERAL PROVISIONS**

- All temporary traffic control (TTC) devices used shall be in accordance with the Louisiana Standard Specifications for Roads and Bridges, the MUTCD, and shall meet the NCHRP Report 350 or MASH requirements for Test Level 3 devices where applicable.
- Materials used for TTC shall be in accordance with the Louisiana Standard Specifications for Roads and Bridges and, when applicable, the LADOTD QPL.
- No TTC shall be erected without the approval of the Engineer and until work is about to begin, unless they are covered.
- No lane closures, lane shifts, diversions, or detours shall occur without the approval of the Engineer.
- Responsibility is hereby placed upon the contractor for the installation, maintenance, and operation of all TTC devices called for in these plans or required by the Engineer for the protection of the traveling public as well as all LADOTD and construction personnel.
- The contractor shall also be responsible for the maintenance of all permanent signs, pavement markings, and traffic signals left in place as essential to the safe movement and guidance of traffic within the project limits unless noted in the plans.
- The DTOE shall serve as a technical advisor to the Engineer for all traffic control matters.
- The Chief Construction Engineer or his appointed designee shall approve all signs and situations not addressed in the plans based on the recommendations of the Project Engineer and the DTOE. All changes shall be noted in all project traffic control diaries.
- The Chief Construction Engineer or his appointed designee shall approve all design speeds of diversions or shifts if it differs from design plans, based on the recommendations of the Project Engineer and the DTOE.
- All temporary traffic control plans shall comply with the Transportation Management Plan.
- Any additional signs shown in the MUTCD and required by the Engineer shall be installed under Item 713-01-00100.
- Neither work activity nor storage of equipment, vehicles, TMAs, or materials shall occur within the buffer space.
- When a work area has been established on one side of the roadway only, there shall be no conflicting operations or parking on the opposite shoulder within 500 feet of the work area.
- A lighting plan shall be submitted to the Engineer 30 days prior to night work for approval. (See section 105.20 of the Louisiana Standard Specifications for Roads and Bridges.)
- Parking of vehicles or unattended equipment, or storage of materials, within the clear zone shall not be permitted unless protected by guard rail or barriers. If the clear zone is not defined on the plan sheets, the Engineer shall verify.
- Immediately upon removal of existing guard rail, the contractor shall install and maintain an NCHRP Report 350 or MASH approved device to protect the blunt end of the bridge or column until new guard rail is installed. After removal of the existing guard rail, new guard rail should be installed within seven (7) days. On non-NHS routes with shoulders less than 8 feet wide: If an NCHRP 350 Report Test Level 3 or MASH device is required but the field conditions of the roadway cannot support a Test Level 3 device, then a Test Level 2 device can be substituted in its place upon approval by the Engineer.
- All costs associated with crash devices are to be included in Item 713-01-00100.
- Sight distance should be considered when placing traffic control devices.
- On all mainline Interstate, a minimum of 1.5 feet of paved shoulder on the left and right side shall be maintained at all times.
- On Interstates, a minimum of 11 foot lanes shall be maintained. On all other roadways, a 10 foot minimum travel lane should be maintained where practical.

- TTC Standards are not drawn to scale.
  - The contractor shall develop an internal traffic control plan approved by the Engineer prior to each phase.
  - Truck restrictions such as (but not limited to) restricting lanes, oversize loads or times of travel, may be required for narrow lanes or other field conditions.
- PAVEMENT MARKINGS (see QPL)

- All pavement markings within the limits of the project that are in conflict with the project signing or the required traffic movements shall be removed from the pavement by blast cleaning or grinding. (Existing striping shall not be painted over with black paint or covered with tape.)
- If special pavement markings are needed, they shall be reflectorized, removable, and accompanied by the proper signage.
- Temporary Raised Pavement Markers may be added to supplement temporary striping in areas of transition, in tapers, in diversions, and in other areas of need as shown in the plans or as directed by the Engineer.
- Materials and placement of temporary pavement markings shall conform to Section 713 of the Louisiana Standard Specifications for Roads and Bridges. If no pay item exists for temporary markings they shall be installed under item 713-01-00100.
- Temporary markings installed in the permanent configuration shall comply with LADOTD pavement marking standard plans, MUTCD, and/or the permanent striping plans.

PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS)

- PCMS shall be used on all Interstate Highways and on all other roadways (where space is available) with an ADT greater than 20,000.
- When used in advance of a lane closure or a lane shift, the PCMS should be placed on the right hand side of the road a minimum distance of 2 miles in advance of the taper for interstates and to be determined by the Engineer on other highways.
- For interstates and multi-lane highways, if vehicles are queuing beyond the 2 mile PCMS, an additional PCMS should be placed on the right hand side of the road approximately 5 miles in advance of the taper or at the end of the queue, whichever is greater.
- PCMS messages shall conform to EDSM VI.2.1.10 or shall be approved by the DTOE. Messages shall be no more than 3 lines and 2 screens.
- PCMS should be placed as far from the traveled lane as possible. They shall be shielded by guard rail or barriers. If this is not possible they shall be delineated with one drum at each corner.
- If the PCMS has to be placed on the shoulder then the contractor shall install a shoulder closure.
- When the PCMS is not displaying a work zone appropriate message pertaining to the ongoing construction project it shall be shielded by guard rail or barriers, or removed from the clear zone.

ABBREVIATIONS

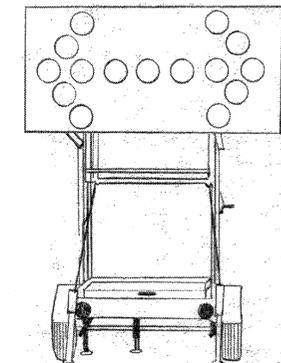
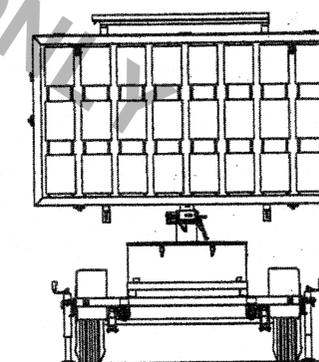
- AASHTO ..... American Association of State Highway and Transportation Officials
- ADT ..... Average Daily Traffic
- AGCI ..... Associated General Contractors of America
- ANSI ..... American National Standards Institute
- ATSSA ..... American Traffic Safety Services Association
- B.O.P. .... Beginning of Project
- DTOE ..... District Traffic Operations Engineer
- E.O.P. .... End of Project
- LADOTD ..... Louisiana Department of Transportation and Development
- MASH ..... AASHTO Manual for Assessing Safety Hardware
- MUTCD ..... Manual on Uniform Traffic Control Devices
- NCHRP ..... National Cooperative Highway Research Program
- NHS ..... National Highway System
- PCMS ..... Portable Changeable Message Sign
- QPL ..... Qualified Products List
- TMA ..... Truck Mounted Attenuator
- TMC ..... Traffic Management Center
- TTC ..... Temporary Traffic Control
- TTC Standards .. Temporary Traffic Control Standard Plans

SPEED LIMITS

- The Engineer may approve a 10 mph drop in the speed limit for posted speeds of 45 mph or greater and for any construction, maintenance, or utility operation that requires one or more of the following:
  - (A) The condition of the traveled way is degraded due to milled surfaces or uneven travel lane lines greater than 1.5 inches.
  - (B) Work is in progress in the immediate vicinity of the travel way requiring lane closures or lane width reductions less than 11 feet.
  - (C) Workers present on the shoulder within 2 feet of the edge of the traveled way without barrier protection.
- The reduced speed zone shall only apply to those portions of the project limits affected. The Engineer may allow SPEED LIMIT WHEN FLASHING signs to supplement reduced speed zones.
- If the speed limit is reduced, speed limit signs shall be placed:
  - (A) beyond major intersections;
  - (B) at one mile intervals in rural areas;
  - (C) at half mile intervals in urban areas.
- At the end of the reduced speed zone, a speed limit sign displaying the original speed limit prior to construction shall be installed.
- For all other speed limit reductions not listed above the Project Engineer and the DTOE shall recommend the speed reduction to the Chief Construction Engineer or his appointed designee for approval.
- If the speed limit is reduced more than 10 mph, placement of the signs shall be re-evaluated according to the MUTCD.

FLASHING ARROW BOARDS

- All Flashing Arrow Boards shall be 4 feet by 8 feet and Type C.
- Flashing Arrow Boards should be placed on the shoulder. When there is no shoulder or median area, the arrow board shall be placed within the closed lane behind the channelizing devices and as close to the beginning of the taper as practical.
- Flashing arrow boards shall be delineated with retroreflective TTC devices.
- At no time shall the arrow board encroach in the traveled way. When Flashing Arrow Board signs are not being used, they shall be shielded by guard rail or barriers, or removed.
- Arrow boards shall only be used for lane reduction tapers and shall not be used for lane shifts.

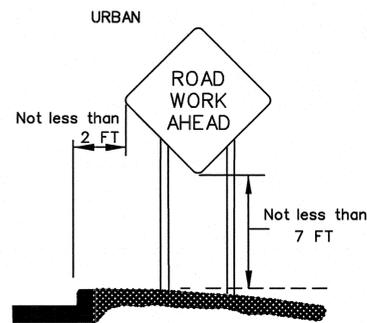


ALL TTC STANDARDS SHOW MINIMUM CONSTRUCTION SIGNING.  
ALL SITUATIONS SHALL BE REVIEWED AND/OR DESIGNED BY THE ENGINEER.  
CONTRACTORS ARE RESPONSIBLE FOR COMPLYING WITH ALL TTC STANDARDS.

SHEET NUMBER	PARISH	DESIGNED BY	DATE
	COL VIN	J. COL VIN	02/13/2013
FEDERAL PROJECT	CHECKED BY	DATE	SHEET
	P. ALLAIN		
STATE PROJECT	DETAILS BY	DATE	SHEET
	M. D. DOROGNE		
	CHECKED BY	DATE	SHEET
	J. COL VIN		
	REVISION DESCRIPTION	DATE	BY
	APPROVED BY	DATE	DATE: 3-12-13
	CHIEF ENGINEER		
TEMPORARY TRAFFIC CONTROL GENERAL NOTES SHEET TTC-00 (A)			
CS-01			

**SIGNS**

- All signs used for temporary traffic control shall follow the plans, the LADOTD TTC Standards, and the MUTCD.
- Signs shown in the TTC illustrations are typical and may vary with each specific condition.
- One Type B High Intensity light shall be used to supplement the first sign (or pair of signs) that gives warning about a lane closure during nighttime operations (see QPL).
- Mesh rollup signs shall not be allowed on any project.
- Contractor shall use caution not to damage existing signs which remain in place. Any LADOTD signs damaged by work operations shall be replaced by the contractor under item 713-01-00100.
- All signs (permanent and temporary) shall be removed or completely covered with a strong, lightweight, opaque material when no longer applicable. (Burlap is not an acceptable material to cover signs).
- At no time shall signs warning against a particular operation be left in place once the operation has been completed or where the condition has been removed.
- Warning signs used for temporary traffic controls shall meet the following guidelines unless otherwise noted in the plans:
  - (A) size shall be 48 inches by 48 inches.
  - (B) see the Louisiana Standard Specifications for Roads and Bridges and the QPL for sheeting information.
  - (C) lateral distance of signs shall be a minimum of 6 feet from the edge of shoulder or edge of pavement if no shoulder exists, and 2 feet from the back of curb in urban areas (see diagram).
- When portable sign frames are not in use they shall be moved to an area inaccessible to traffic and not visible to the driver.
- Left side mounted signs will not be required for roadways with a center left turn lane and for undivided roadways.
- Vinyl rollup signs may be used if work zone is in place for 12 hours or less, there are no more than 2 lanes in each direction and if signs meet all size, color, retroreflectivity, and NCHRP 350 Report or MASH requirements.
- All signs shall be visible to the drivers (i.e. no obstructions such as on street parking or other traffic control devices shall block the sign).
- On divided highways, signs shall be placed on the right and the left as shown on the TTC standards.
- 1 foot portable sign stands may be used if the work zone is in place for 12 hours or less, the preconstruction posted speed is less than 45 mph and there are no more than 2 lanes in each direction.
- Sign posts:
  - Signs measuring 10 square feet or less shall be mounted on 1 rigid post
  - Signs over 10 square feet shall be mounted on 2 rigid posts
  - Signs over 20 square feet shall be mounted on at least 3 rigid posts
- Rigid sign supports shall be driven to a minimum depth of 3 feet. (If splicing is required, see Allowable Lap Splice U-channel post.)
- For sign height, see the Rural and Urban diagrams:



**LANE CLOSURES**

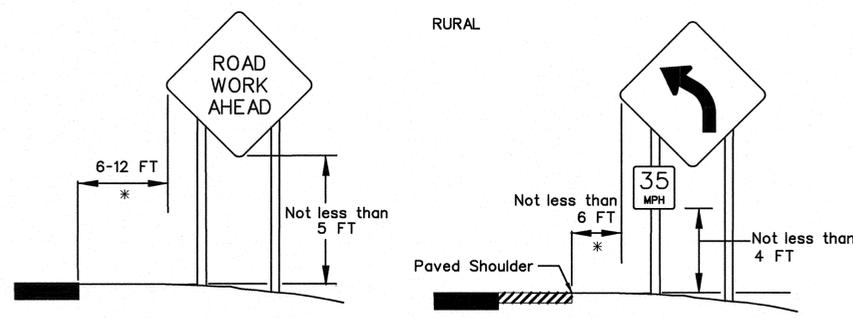
- All proposed lane, road, or shoulder closures shall be reviewed by the DTOE and approved by the Engineer.
- Two lane, two-way highways shall have a maximum work area of two miles; all other roadways shall have a four mile maximum work area.
- A queue analysis shall be performed prior to approval of lane closures on all Interstates according to EDSM VI.1.1.4.
- Closure plans and times shall be turned in to the Engineer for review according to the following:
  - (A) 5 working days minimum if traffic control plan has been approved or is contained in the plans.
  - (B) 10 working days minimum and a traffic control plan must be submitted for lane closures not addressed in the plans.
- Weekly updates to the DTOE, Project Engineer, the LADOTD TMC operator, and the regional TMC operator (if applicable) will be required for all ongoing lane closures to update the closure status.
- Daily updates to the DTOE, Project Engineer, and TMC operator (if applicable) will be required for all projects where active closures are in place.

**FLAGGERS**

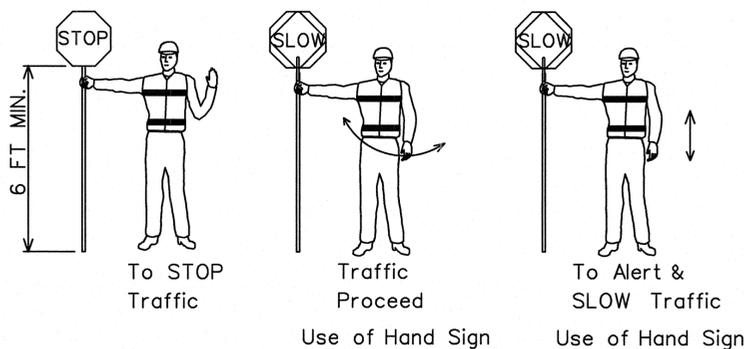
- All flaggers shall be qualified.
- The contractor shall be responsible for training or assuring that all flaggers are qualified to perform flagging duties.
- A Qualified Flagger is one that has completed courses such as those offered by ATSSA, AGC, or other courses approved by the LADOTD Work Zone Task Force. The contractor shall be responsible for getting the flagger course approved.
- When utilized, a flagger shall use a minimum 18 inch octagonal shape sign on a minimum 6 foot stop/slow paddle and wear ANSI Class 2 Lime Green vest during day time operations and ANSI Class 3 Lime Green ensemble during night operations.
- In all flagging operations, the flagger must be visible from the flagger advance warning sign.
- Flaggers shall not be used on the Interstate.

**REFERENCES**

- The contractor shall be responsible for understanding all rules and requirements in the current edition of the following documents:
  - 1) Louisiana Standard Specifications for Roads and Bridges. <http://www.dotd.la.gov/highways/specifications/>
  - 2) Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD). <http://mutcd.fhwa.dot.gov/>
  - 3) LADOTD Qualified Products List (QPL) Manual. <http://www.dotd.la.gov/highways/construction/lab/qpl/tableofcontents.shtml>
  - 4) LADOTD Engineering Directives and Standards Manual (EDSM) VI.1.1.4 - Queue Analysis for Interstate Lane Closures. <http://webmail.dotd.la.gov/ppmemos.nsf>
  - 5) National Cooperative Highway Research Program (NCHRP) Report 350: "Guidelines for Work Zones Traffic Control Devices". [http://onlinepubs.trb.org/Onlinepubs/nchrp/nchrp\\_rpt\\_350-a.pdf](http://onlinepubs.trb.org/Onlinepubs/nchrp/nchrp_rpt_350-a.pdf)
  - 6) NCHRP Report 475: "A Procedure for Assessing and Planning Nighttime Highway Construction and Maintenance". [http://onlinepubs.trb.org/Onlinepubs/nchrp/nchrp\\_rpt\\_475.pdf](http://onlinepubs.trb.org/Onlinepubs/nchrp/nchrp_rpt_475.pdf)
  - 7) NCHRP Report 476: "Guidelines for Design and Operation of Nighttime Traffic Control for Highway Maintenance". [http://onlinepubs.trb.org/Onlinepubs/nchrp/nchrp\\_rpt\\_476.pdf](http://onlinepubs.trb.org/Onlinepubs/nchrp/nchrp_rpt_476.pdf)
  - 8) NCHRP Report 498: "Illumination Guidelines for Nighttime Highway Work". [http://onlinepubs.trb.org/Onlinepubs/nchrp/nchrp\\_rpt\\_498.pdf](http://onlinepubs.trb.org/Onlinepubs/nchrp/nchrp_rpt_498.pdf)
  - 9) American Association of State Highway and Transportation Officials (AASHTO) Roadside Design Guide.
  - 10) American Traffic Safety Services Association (ATSSA) Quality Guidelines for Work Zone Traffic Control Devices and Features.
  - 11) U.S. Department of Transportation Federal Highway Administration Traffic Control Handbook for Mobile Operations at Night. <http://www.dot.state.il.us/blr/I023.pdf>
  - 12) LADOTD Engineering Directives and Standards Manual (EDSM) VI.2.1.10 - PCMS Approved Construction Message Policy. <http://webmail.dotd.la.gov/ppmemos.nsf>



\* If lateral distance is not practical, the sign may be placed no less than 2 feet.

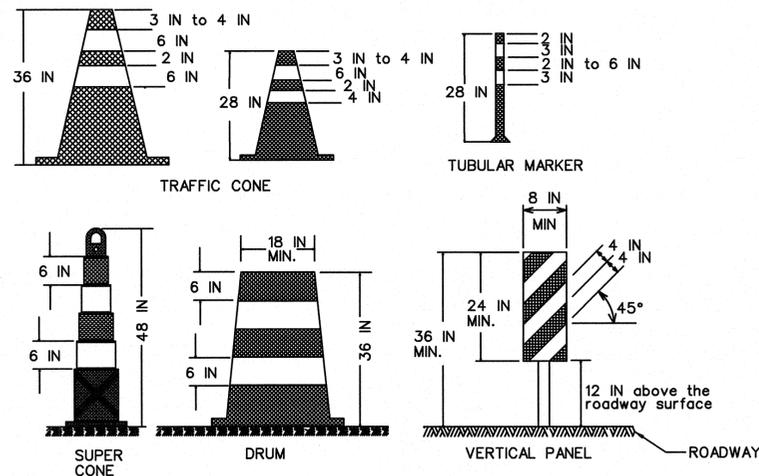


ALL TTC STANDARDS SHOW MINIMUM CONSTRUCTION SIGNING. ALL SITUATIONS SHALL BE REVIEWED AND/OR DESIGNED BY THE ENGINEER. CONTRACTORS ARE RESPONSIBLE FOR COMPLYING WITH ALL TTC STANDARDS.

SHEET NUMBER	PARISH	DESIGNED BY	DATE
		J. COLVIN	02/13/2013
FEDERAL PROJECT	STATE PROJECT	CHECKED BY	SHEET
		P. ALLAIN	3
REVISION DESCRIPTION		DATE	DATE
		3/12/13	
APPROVED BY		DATE	
CHIEF ENGINEER			
		TEMPORARY TRAFFIC CONTROL GENERAL NOTES SHEET TTC-00 (B)	
CS-02			

**CHANNELIZING DEVICES**

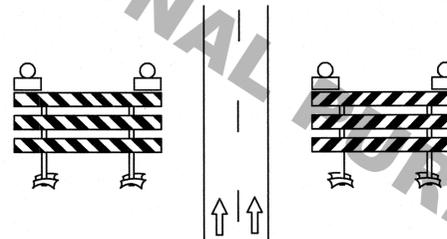
- The following devices may be used as channelizing devices: Tubular Markers, Vertical Panels, Cones, Drums, and Super Cones.
- 28 inch traffic cones are not allowed on:
  - Interstates
  - Highways with speeds greater than 40 mph.
- During nighttime operations 28 inch and 36 inch cones are not allowed.
- Retroreflective material pattern used on super cones shall match that used on drums.
- Tangent Areas:**
  - Standard Spacing:** See Standard Device Spacing and Buffer Space table.
  - Daylight Operations:** Drums and super cones are spaced at standard spacing. All other devices are at 1/2 standard spacing.
  - Nighttime Operations:** Drums and supercones at standard spacing are the only devices allowed.
- Taper Areas:**
  - Standard Spacing:** See Standard Device Spacing and Buffer Space table.
  - Daylight Operations:** Drums are spaced at standard spacing. All other devices are 1/2 standard spacing.
  - Nighttime Operations:** Drums (at standard spacing) are the only devices allowed.
- Type C steady burn lights shall be used on all channelizing devices in the taper as well as the first two devices in the tangent at night, (see the QPL).
- Typical channelizing device lateral placement (do not include when it is used as a divider for opposing directions of traffic) shall be 2 feet off the lane line in the closed lane or shoulder.
- Devices may be adjusted laterally to accommodate ongoing work in the immediate vicinity but must be returned to the closed lane after the work activity has moved.
- Channelizing devices on the lane line shall be of the same type.
- Channelizing devices in each taper shall be of the same type.



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**TYPE III BARRICADES**

- Only Type III barricades shall be used.
- All barricades shall use Type 3 High Intensity Sheeting on both sides of the barricade.
- All barricades shall be a minimum of 8 feet in length and must meet NCHRP Report 350 or MASH requirements.
- When used for overnight closures, two Type B High Intensity lights shall supplement all barricades that are placed in a closed lane or that extend across a highway. Two Type A Low Intensity lights may be used in urban areas if approved by the Engineer (see QPL).
- When signs and lights are to be mounted to a barricade, they must meet NCHRP Report 350 or MASH requirements.
- A truck with a TMA may be substituted for a barricade when workers are present.
- Barricades shall be placed:
  - at the beginning of a closed lane or shoulder and at 1,000 foot intervals where no active work is ongoing and the lane must remain closed. A minimum of 2 barricades shall be placed if the lane or shoulder closure is less than 2,000 feet. (One barricade shall be placed at the beginning of the lane closure after the buffer space and one shall be placed in the middle of the lane closure.)
  - before each or group of unfilled holes or holes filled with temporary material.
  - before uncured concrete.
  - in the closed lane on each side of every intersection and crossover. (Do not block sight distance.)
  - in front of piles of material (dirt, aggregate, broken concrete), culverts, and equipment which is near the work zone.



**TTC for DROP-OFFS**

**NON-INTERSTATE**

Average Drop-off	> 45 MPH	≤ 45 MPH
≤ 3 IN	Low Shoulder Sign (Optional)	Low Shoulder Sign (Optional)
> 3 IN	Shoulder Drop Off Sign & Edge Lines or Shoulder Drop Off Sign & Channelizing Device	Shoulder Drop Off Sign
> 6 IN	No Shoulder Sign, Edge Lines & Vertical Panel	No Shoulder Sign & Channelizing Device
> 10 IN	Concrete Barrier & Edge Lines	No Shoulder Sign & Vertical Panel

**INTERSTATE**

Average Drop-off	Requirement
≤ 2 IN	Low Shoulder Sign (Optional)
> 2 IN	Shoulder Drop Off Sign & Edge Lines or Shoulder Drop Off Sign & Channelizing Device
> 6 IN	Shoulder Drop Off Sign, Concrete Barrier & Edge Lines

- If a portable concrete barrier will be required then the deflection shall be considered in the design.
- For Interstate ramps, refer to non-Interstate drop offs.

**STANDARD DEVICE SPACING AND BUFFER SPACE**

SPEED LIMIT (prior to construction) MPH	MERGING TAPER LENGTH (L) Lane Width (FT)				STANDARD DEVICE SPACING IN FEET		BUFFER SPACE FT
	9	10	11	12	Along Taper	Along Tangent	
25	94	105	115	125	20	40	155
30	135	150	165	180	40	80	200
35	184	205	225	245	40	80	250
40	240	267	294	320	40	80	305
45	405	450	495	540	40	80	360
50	450	500	550	600	40	80	425
55	495	550	605	660	40	80	495
60	540	600	660	720	40	80	570
65	585	650	715	780	40	80	645
70	630	700	770	840	40	80	730

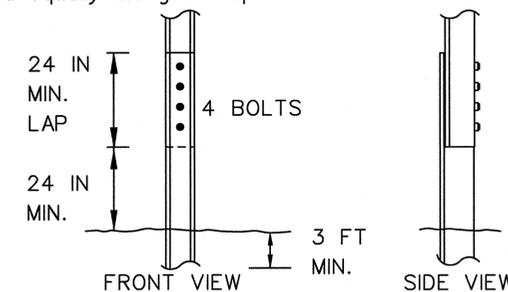
SPEED LIMIT (prior to construction) MPH	SHIFTING TAPER LENGTH (1/2)(L) Lane Width (FT)				STANDARD DEVICE SPACING IN FEET		BUFFER SPACE FT
	9	10	11	12	Along Taper	Along Tangent	
25	47	53	58	63	20	40	155
30	68	75	83	90	40	80	200
35	92	103	113	123	40	80	250
40	120	134	147	160	40	80	305
45	203	225	248	270	40	80	360
50	225	250	275	300	40	80	425
55	248	275	303	330	40	80	495
60	270	300	330	360	40	80	570
65	293	325	358	390	40	80	645
70	315	350	385	420	40	80	730

SPEED LIMIT (prior to construction) MPH	SHOULDER TAPER LENGTH (1/3)(L) Lane Width (FT)				STANDARD DEVICE SPACING IN FEET		BUFFER SPACE FT
	9	10	11	12	Along Taper	Along Tangent	
25	32	35	39	42	20	40	155
30	45	50	55	60	40	80	200
35	62	69	75	82	40	80	250
40	80	89	98	107	40	80	305
45	135	150	165	180	40	80	360
50	150	167	184	200	40	80	425
55	165	184	202	220	40	80	495
60	180	200	220	240	40	80	570
65	195	217	239	260	40	80	645
70	210	234	257	280	40	80	730

- All termination and flagger tapers are 100 feet per lane. (MIN. 6 channelizing devices per lane equally spaced 20 feet apart.)
- See TTC Standards for flagger taper.
- See MUTCD for taper formulas.

**ALLOWABLE LAP SPLICE FOR U-CHANNEL POST**

- U-Channel posts may be spliced where long lengths are required. The upper section shall overlap the lower section by at least 24 inches. The bottom edge of the upper section of the splice shall be a minimum of 24 inches above the ground. The spliced sections shall be secured with at least four 5/16 inch diameter hex bolts spaced equally along the splice.



SHEET NUMBER

PARISH PROJECT

DESIGNED BY: J. COLVIN  
CHECKED BY: P. ALLAIN

FEDERAL PROJECT

DETAILED BY: M.D. ORDOGNE  
CHECKED BY: J. COLVIN

STATE PROJECT

DATE: 02/13/2013

REVISION DESCRIPTION

BY: [Signature]

DATE: 3/11/13

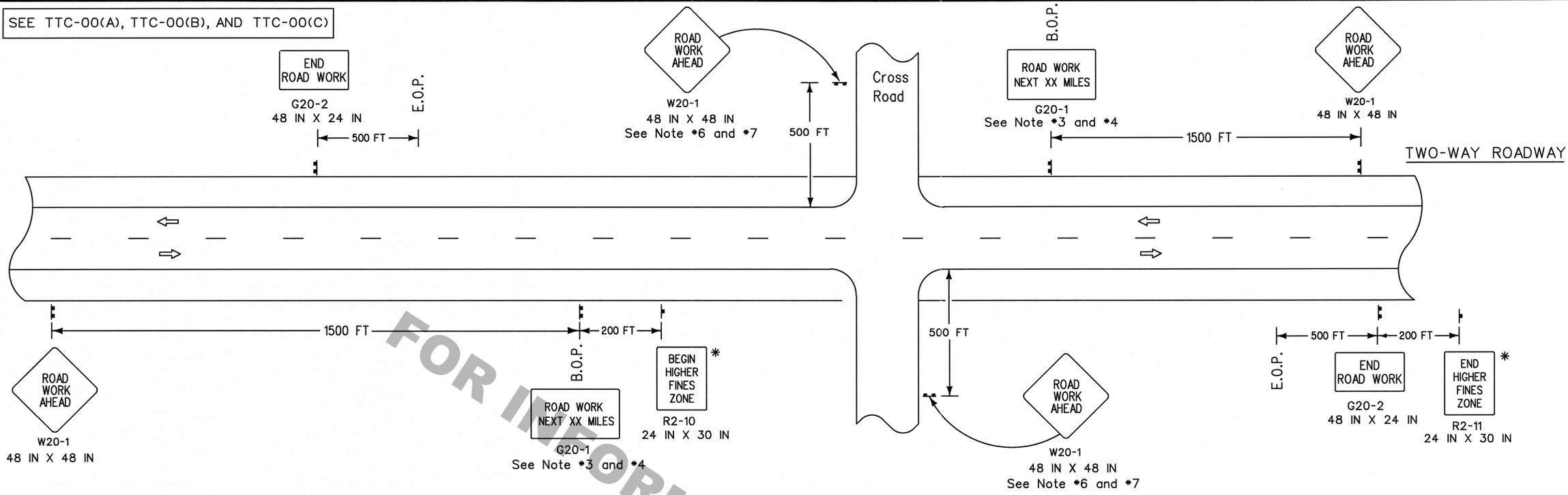
APPROVED BY: [Signature]  
CHIEF ENGINEER

TEMPORARY TRAFFIC CONTROL  
GENERAL NOTES SHEET

TTC-00 (C)

CS-03

SEE TTC-00(A), TTC-00(B), AND TTC-00(C)



\* For divided roadways with speeds  $\geq$  50 mph use larger sign, 36 IN X 48 IN.

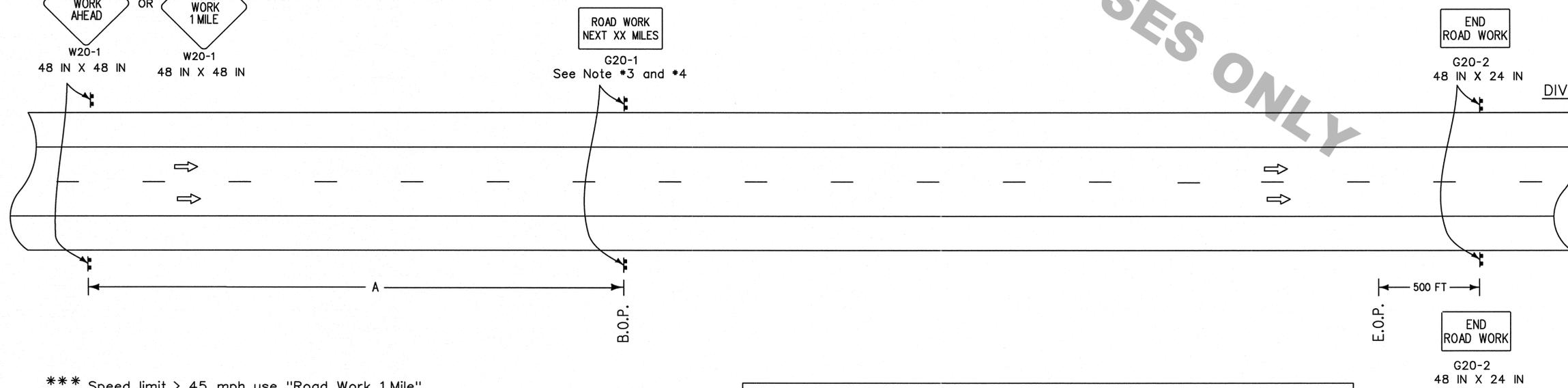
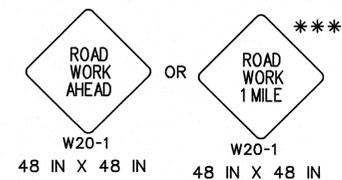
**NOTES**

This sheet shall be used with the Temporary Traffic Control General Notes Sheets TTC-00(A), TTC-00(B), TTC-00(C), and other Temporary Traffic Control Sheets as appropriate.

1. This layout represents the minimum traffic controls required for placement of "Road Work Next XX Miles" and "End Road Work" signs.
2. This layout does not replace other TTC Standard Sheets, but is intended as a supplement to the required signing.
3. The "Road Work Next XX Miles" sign shall be required on all projects. The distance on the "Road Work Next XX Miles" sign shall be stated to the nearest whole mile. This sign shall be placed at the Beginning of Project (B.O.P.) limits.
4. The "Road Work Next XX Miles" sign shall be a minimum of 60 inches by 36 inches for all multi-lane roadways and a minimum of 48 inches by 24 inches for two-lane roadways unless otherwise noted.
5. The "End Road Work" sign shall be placed 500 feet past the End of Project (E.O.P.) limits.
6. If "Road Work Ahead" sign is used on a cross road to warn of road work on another route, then "End Road Work" sign is not required.
7. When projects are separated by less than 1 mile, they shall be signed as one project; this may require coordination.

**LEGEND**

- ▬ Traffic Sign
- ⇒ Direction of Travel



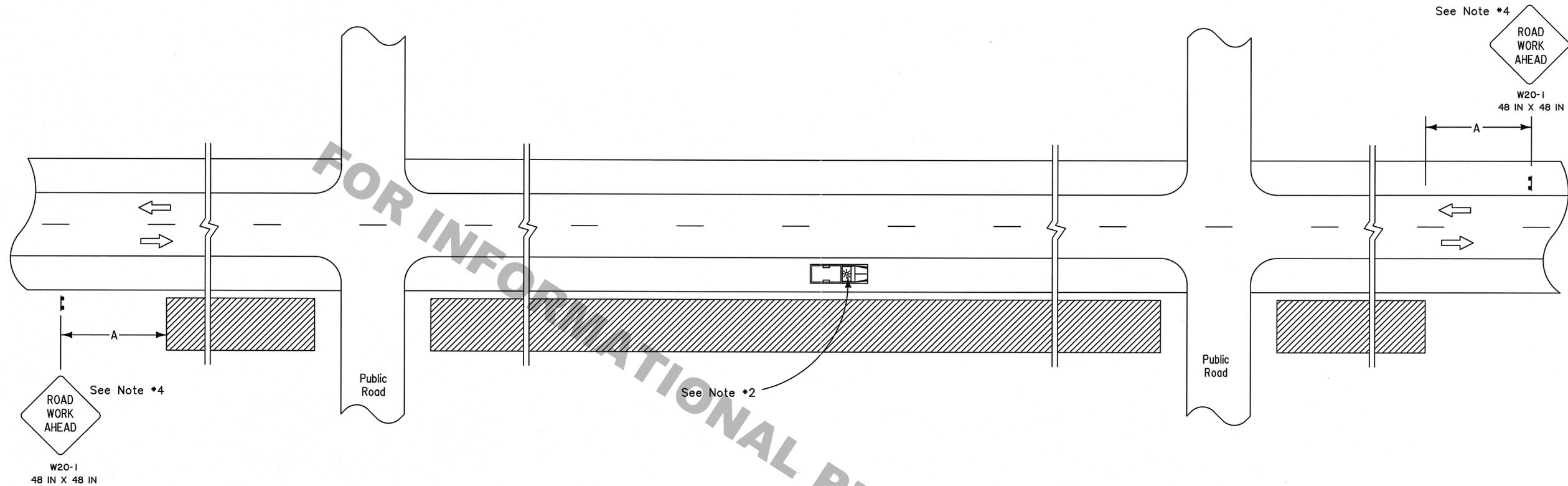
\*\*\* Speed limit > 45 mph use "Road Work 1 Mile"  
Speed limit  $\leq$  45 mph use "Road Work Ahead"

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SPEED LIMIT (prior to construction)	SPACING 'A'
$\leq$ 40 mph	1500 FT
45 mph	2640 FT
> 45 mph	5280 FT

- Sign spacing to be adjusted for Horizontal and Vertical curves.
- For work outside of the traveled way, see TTC-01 and TTC-02.

SHEET NUMBER: \_\_\_\_\_  
 PARISH: \_\_\_\_\_  
 FEDERAL PROJECT: \_\_\_\_\_  
 STATE PROJECT: \_\_\_\_\_  
 DESIGNED BY: J. COLVIN  
 CHECKED BY: P. ALLAIN  
 DETAILED BY: M.D. OROGNE  
 CHECKED BY: J. COLVIN  
 DATE: 02/13/2013  
 SHEET: \_\_\_\_\_  
 REVISION DESCRIPTION: \_\_\_\_\_  
 BY: \_\_\_\_\_  
 DATE: 3-11-13  
 APPROVED BY: \_\_\_\_\_  
 CHIEF ENGINEER: \_\_\_\_\_  
 MISSISSIPPI DEPARTMENT OF TRANSPORTATION  
 TEMPORARY TRAFFIC CONTROL LAYOUT FOR PLACEMENT OF ROAD WORK NEXT XX MILES AND END ROAD WORK SIGNS  
 TTC-00 (D)  
 CS-04



**LEGEND**

- Traffic Sign
- Work Area
- Direction of Travel
- Truck with Amber Light

SPEED LIMIT (prior to construction)	SPACING 'A'
≤ 40 mph	500 FT
45-50 mph	1000 FT
≥ 55 mph	1500 FT

**NOTES**

This sheet shall be used with the Temporary Traffic Control General Notes Sheets TTC-00(A), TTC-00(B) and TTC-00(C).

1. This layout represents the minimum traffic controls required for workers and equipment operating more than 15 feet from the travel way.
2. If the operation results in equipment or other vehicles being parked closer than 15 feet to the travelway, but not within the roadway, each vehicle shall have an amber light.
3. When a work area has been established on one side of the roadway only, there shall be no parking on the opposite shoulder within 500 feet of the work area.
4. Other signs may be used in place of the "Road Work Ahead" sign, such as W21-8 (Mowing), W21-7 (Utility), or W21-6 (Survey) when applicable.

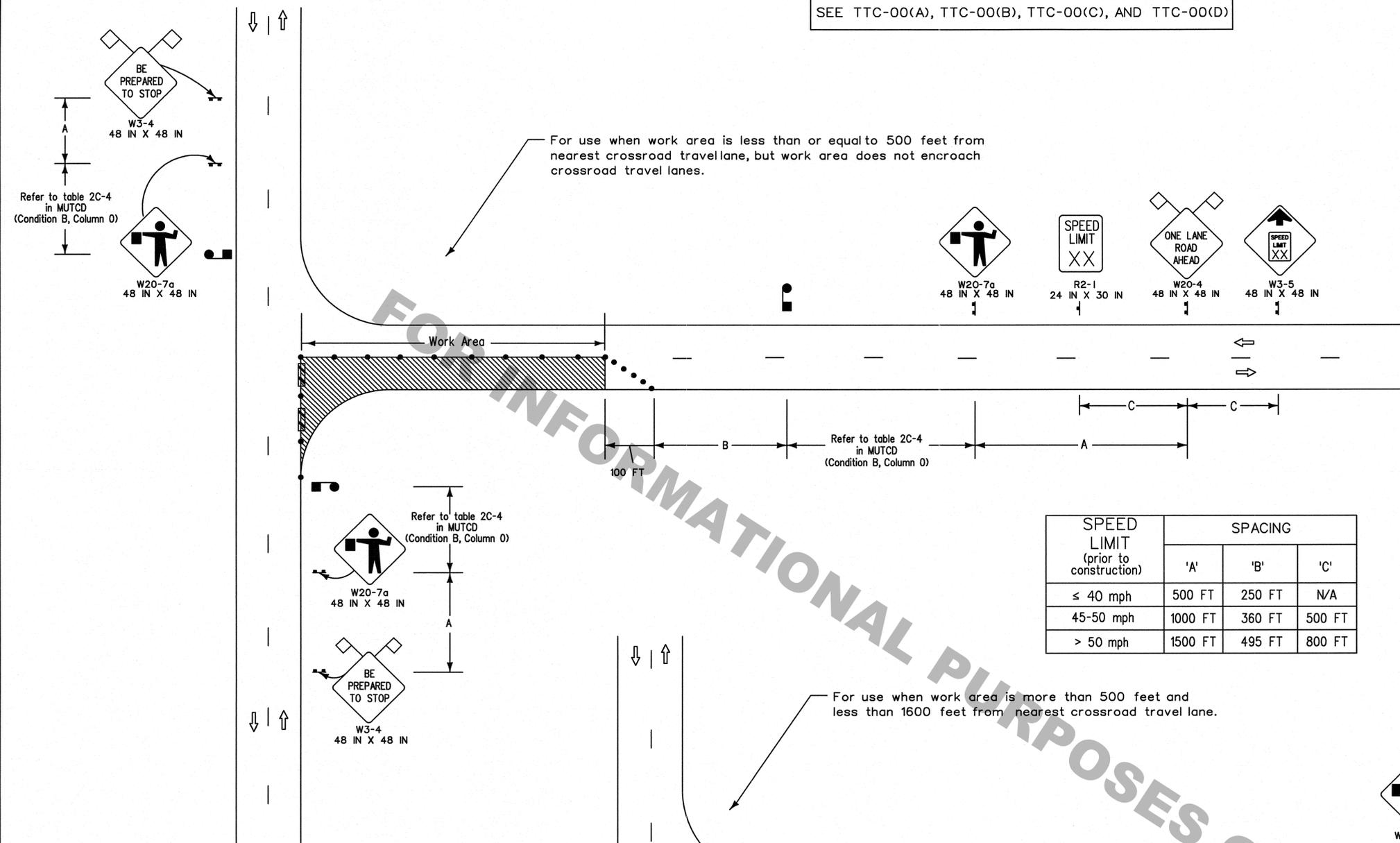
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 ALL SITUATIONS SHALL BE REVIEWED AND/OR DESIGNED BY THE ENGINEER.  
 CONTRACTORS ARE RESPONSIBLE FOR COMPLYING WITH ALL TTC STANDARDS.

FOR INFORMATIONAL PURPOSES ONLY

SHEET NUMBER		PARISH		FEDERAL PROJECT		STATE PROJECT	
DESIGNED BY	J. COLVIN	CHECKED BY	P. ALLAIN	DATE	02/13/2013	SHEET	
APPROVED BY		REVISION DESCRIPTION		DATE	3/12/13	BY	
TEMPORARY TRAFFIC CONTROL FOR WORK GREATER THAN 15 FEET FROM THE TRAVELED WAY							
TTC-01							
CS-05							



SEE TTC-00(A), TTC-00(B), TTC-00(C), AND TTC-00(D)

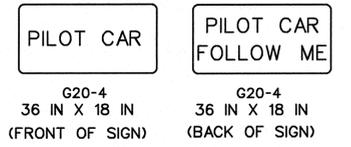


For use when work area is less than or equal to 500 feet from nearest crossroad travel lane, but work area does not encroach crossroad travel lanes.

For use when work area is more than 500 feet and less than 1600 feet from nearest crossroad travel lane.

SPEED LIMIT (prior to construction)	SPACING		
	'A'	'B'	'C'
≤ 40 mph	500 FT	250 FT	N/A
45-50 mph	1000 FT	360 FT	500 FT
> 50 mph	1500 FT	495 FT	800 FT

- PILOT CAR**
- If used, a pilot car shall guide a queue of vehicles through the work zone or diversion.
  - It shall be used in restricted visibility operations such as lime or cement stabilization, chip seals, or operations in hilly or curvy terrains, where flaggers cannot see each other (no clear line-of-sight).
  - The operation of the pilot vehicle shall be coordinated with flagging operations or other controls at each end of the one-lane section and all major driveways and street intersections.
  - The pilot car sign should be mounted 7 feet above roadway in a position visible to oncoming and following traffic.
  - The pilot car shall have an amber beacon light.
  - The sign mounted on the vehicle shall be two-sided.

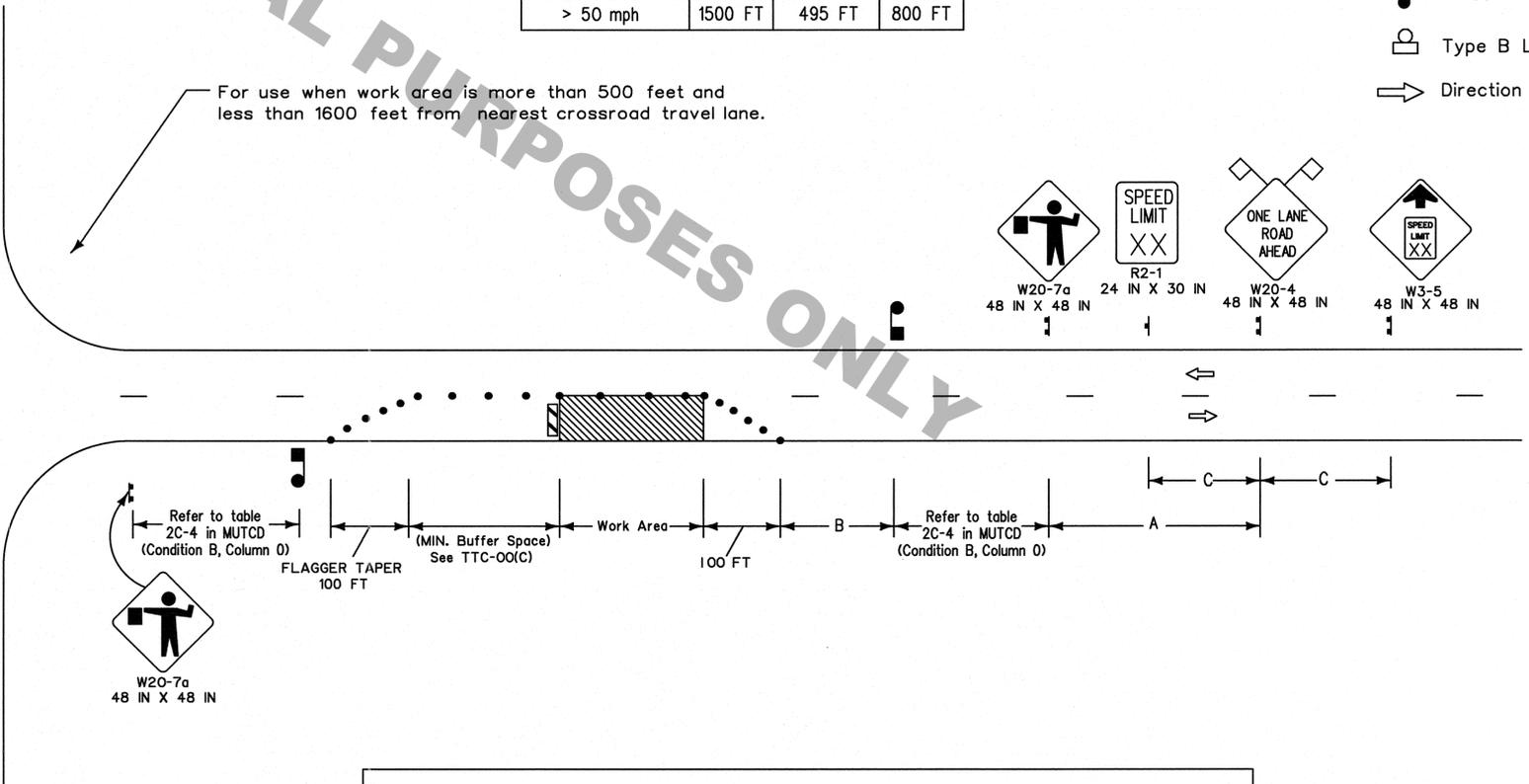


- LEGEND**
- ⬮ Traffic Sign
  - Channelizing Devices
  - ▨ Type III Barricades
  - ▨ Work Area
  - ♫ Flagger
  - ⬮ Type B Light
  - ➔ Direction of Travel

**NOTES**

This sheet shall be used with the Temporary Traffic Control General Notes Sheets TTC-00(A), TTC-00(B), TTC-00(C), and TTC-00(D).

1. This layout represents the minimum traffic controls required for lane closures on two-lane roads with two-way traffic less than 1600 feet from an intersection. For advance signing see TTC-00(D).
2. Visual or radio contact shall be required between flaggers at all times. The flagger shall be visible from flagger sign.
3. Only law officers shall direct traffic against a traffic signal indication.
4. If work area is greater than 1600 feet see TTC-04.
5. If a pilot car is required then the contractor is not required to have channelizing devices in the tangent section.



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STATE PROJECT: 02/13/2013

DESIGNED BY: J. COLVIN  
CHECKED BY: P. ALLAIN  
DATE: 3/2/13

REVISION DESCRIPTION: [Blank]

APPROVED BY: [Signature]

DATE: [Blank]

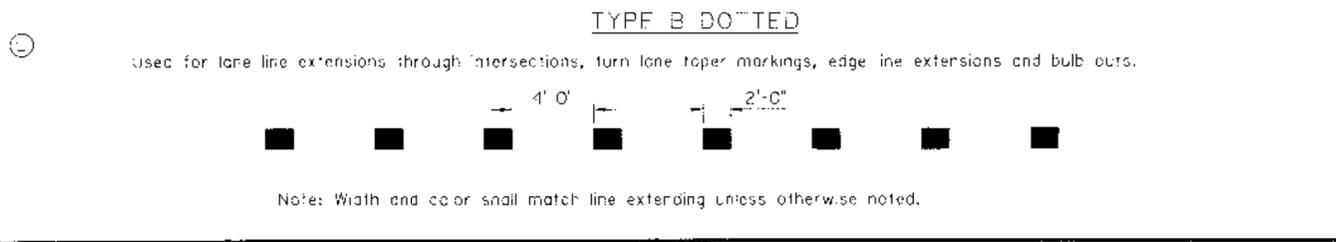
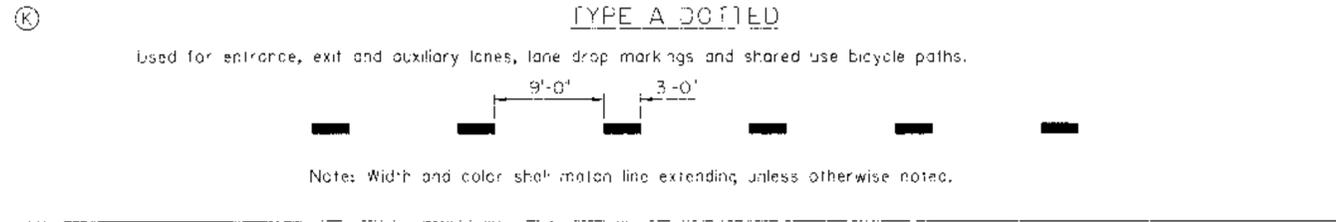
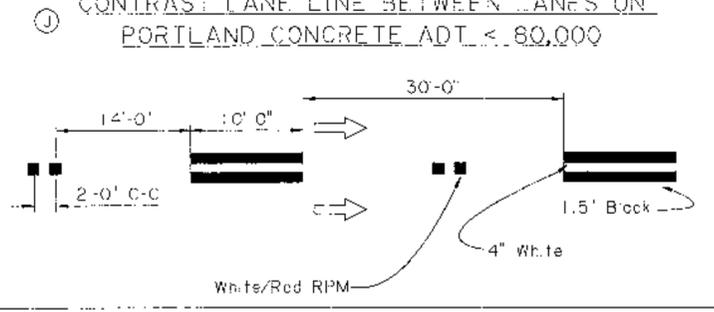
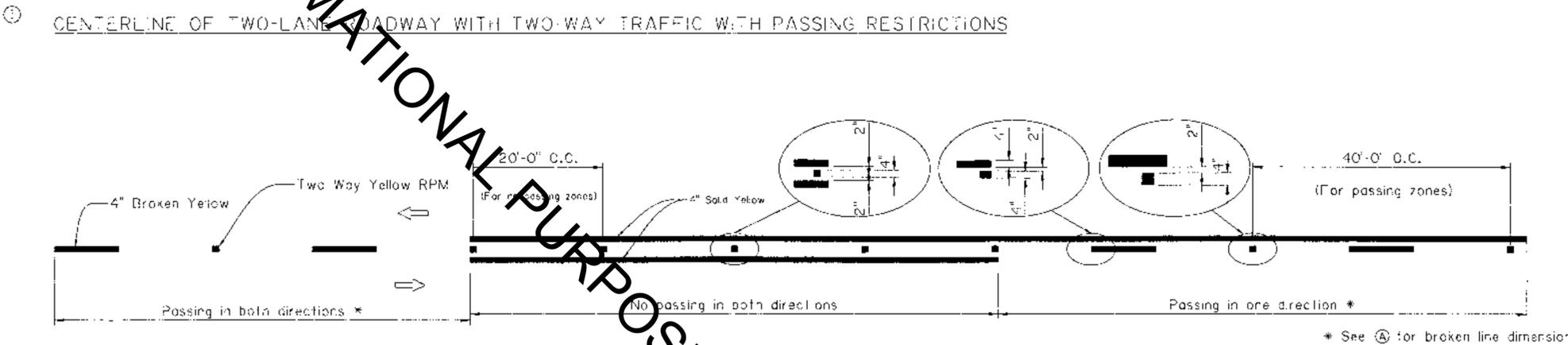
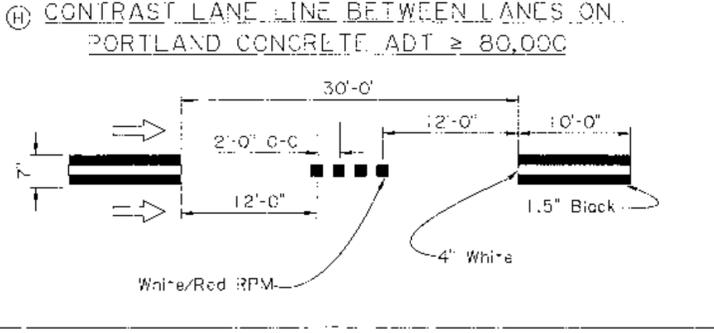
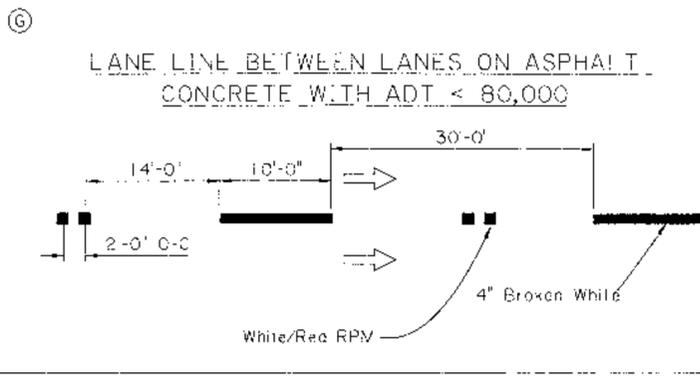
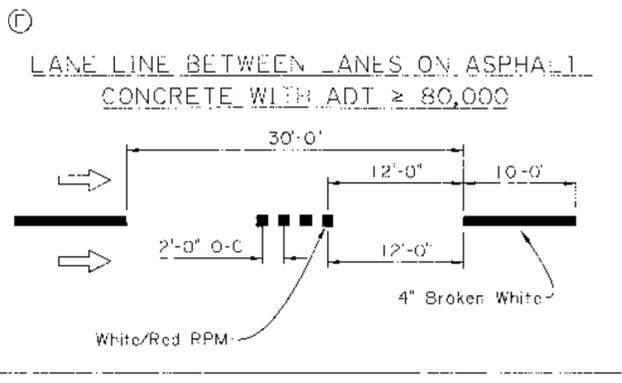
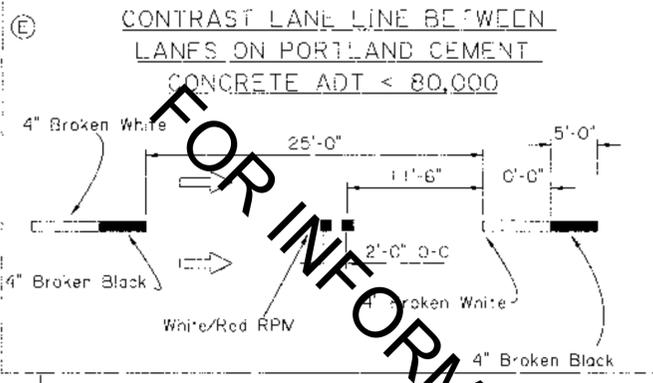
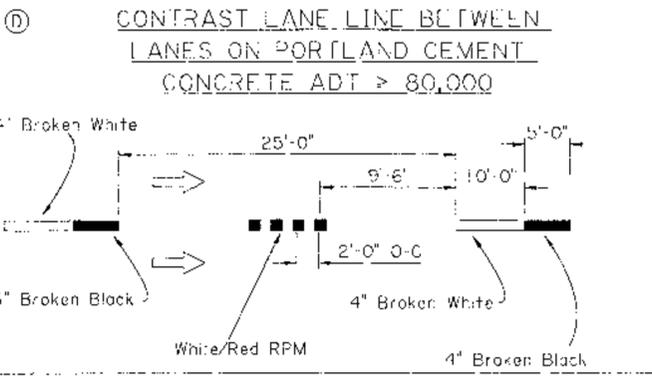
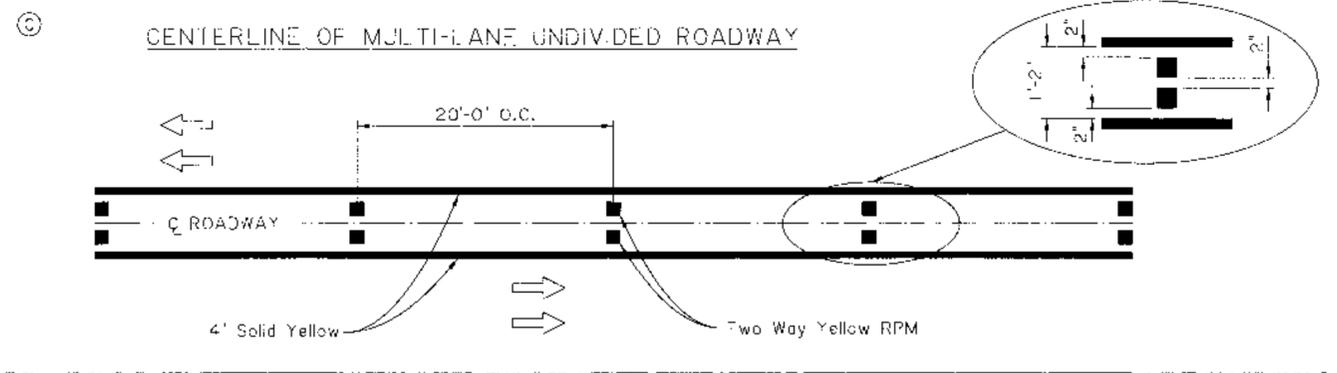
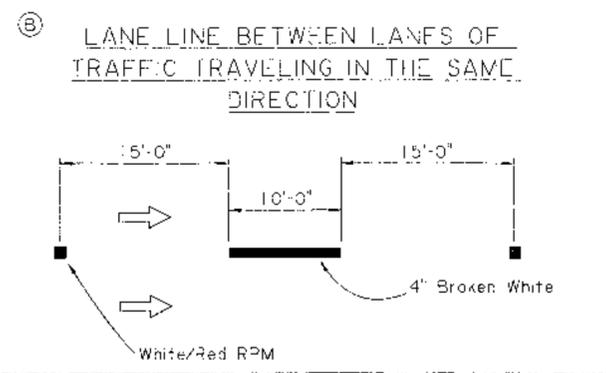
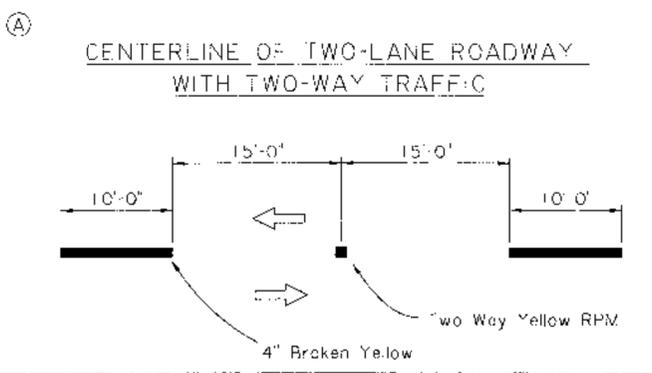
CHIEF ENGINEER: [Signature]

TEMPORARY TRAFFIC CONTROL LAYOUT FOR LANE CLOSURES ON TWO LANE ROADS WITH TWO-WAY TRAFFIC NEAR INTERSECTIONS (FLAGGING OPERATIONS) TTC-03

CS-07



\$\$\$----- SUBMITTAL STAGE -----\$\$\$  
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**GENERAL NOTES:**

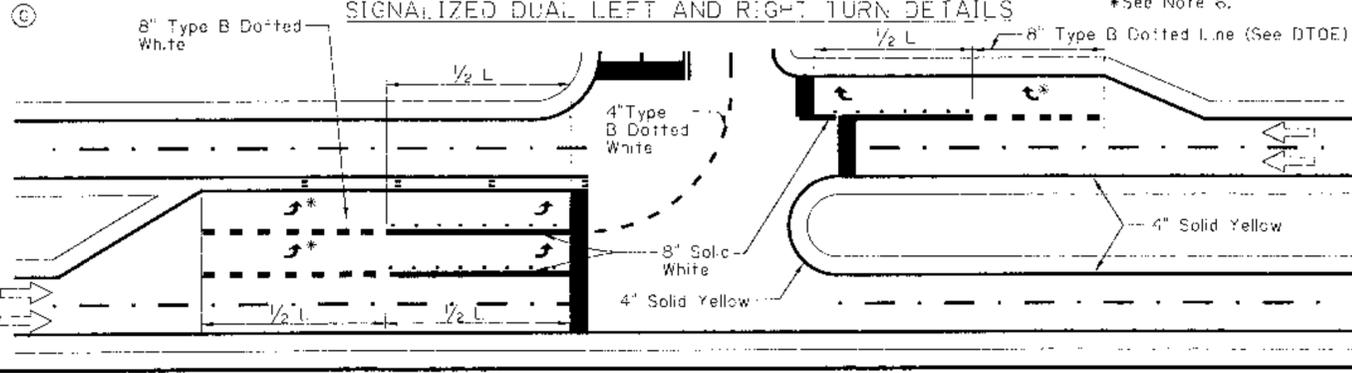
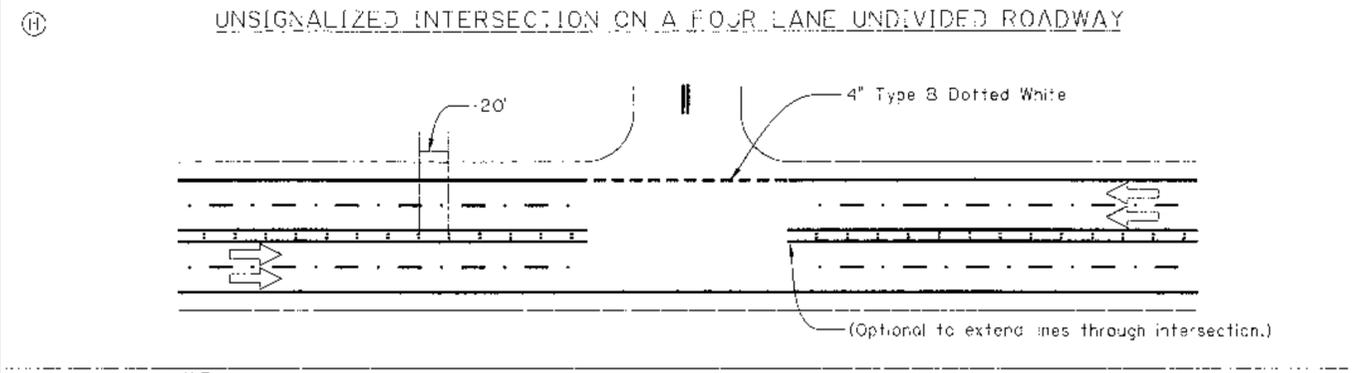
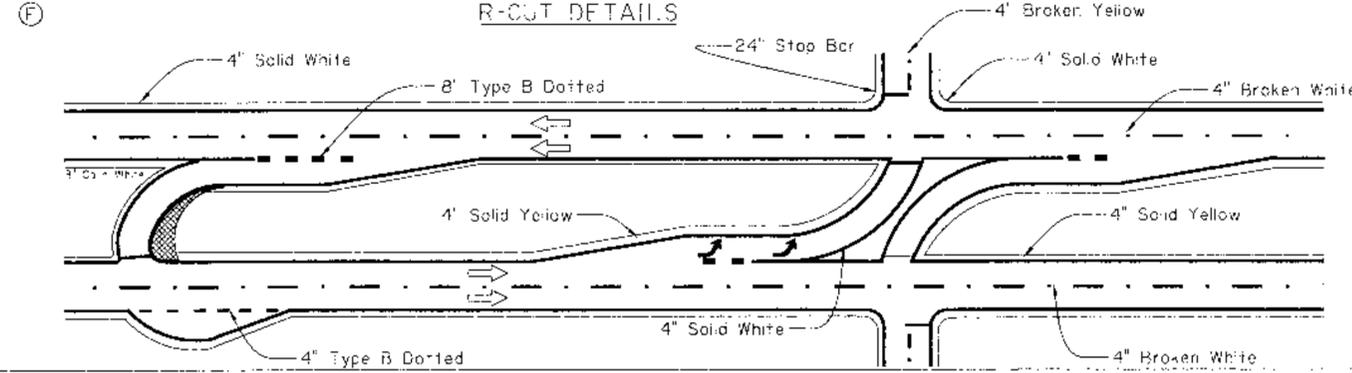
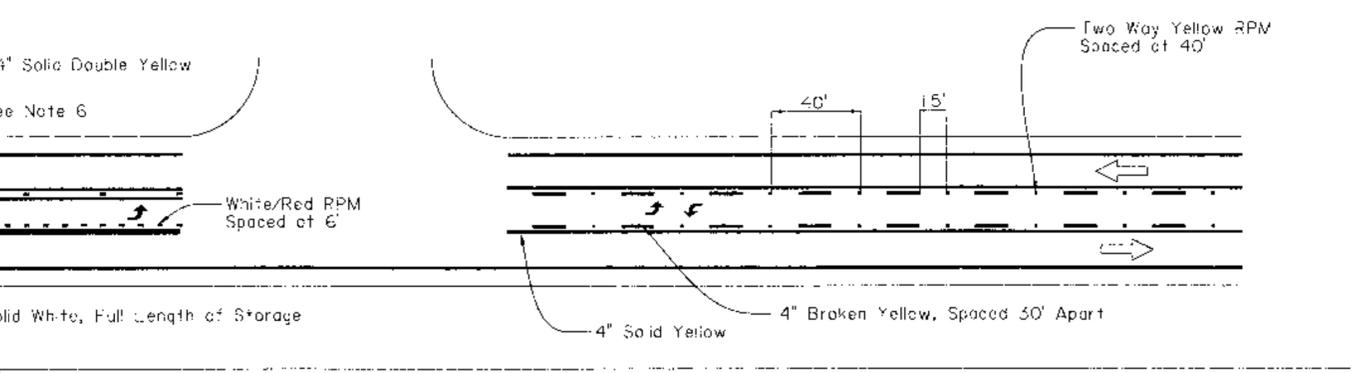
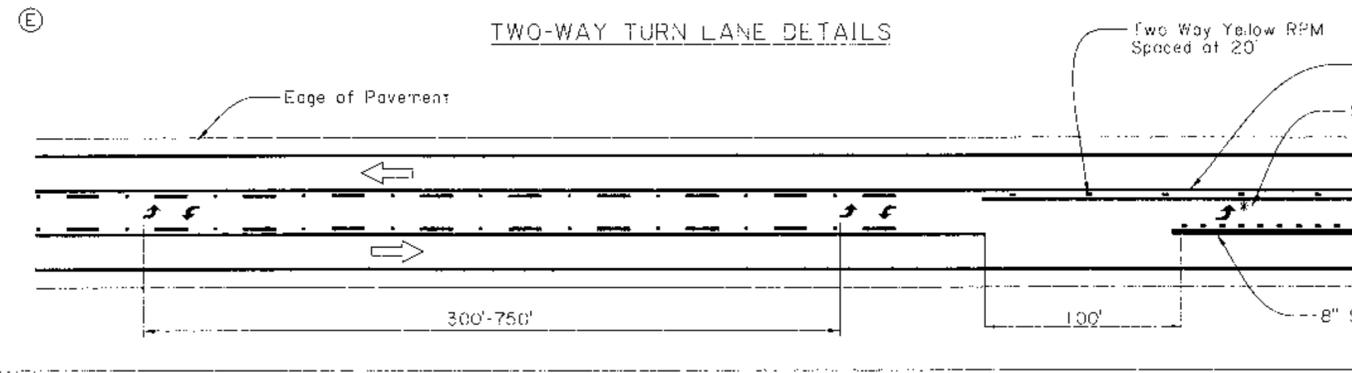
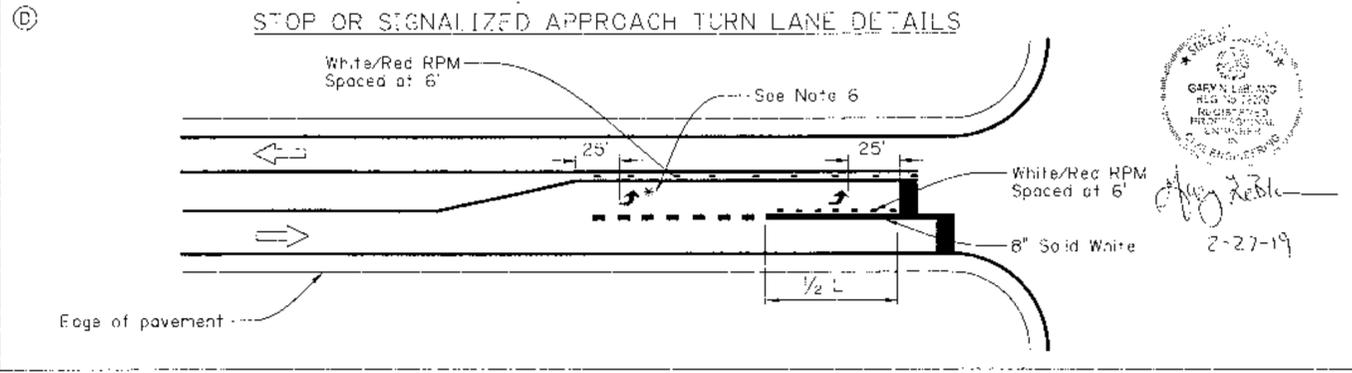
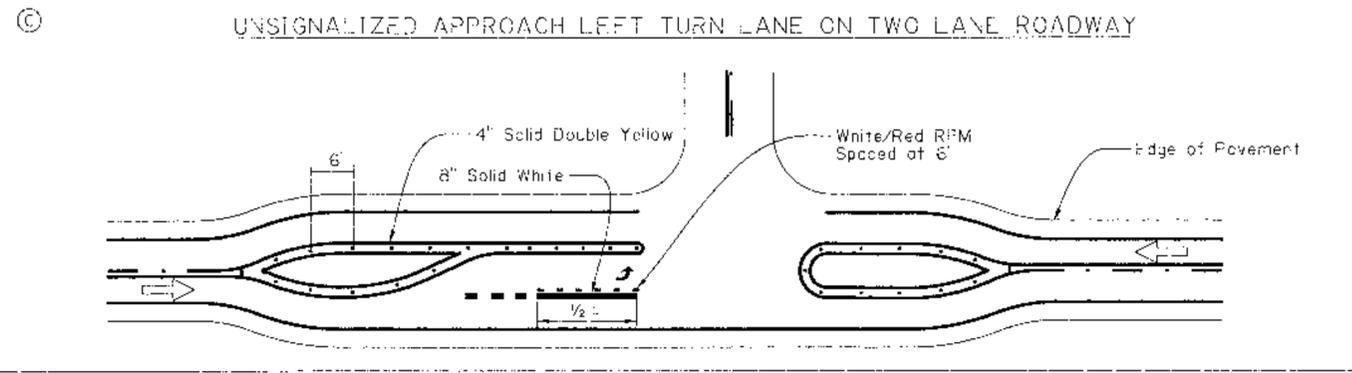
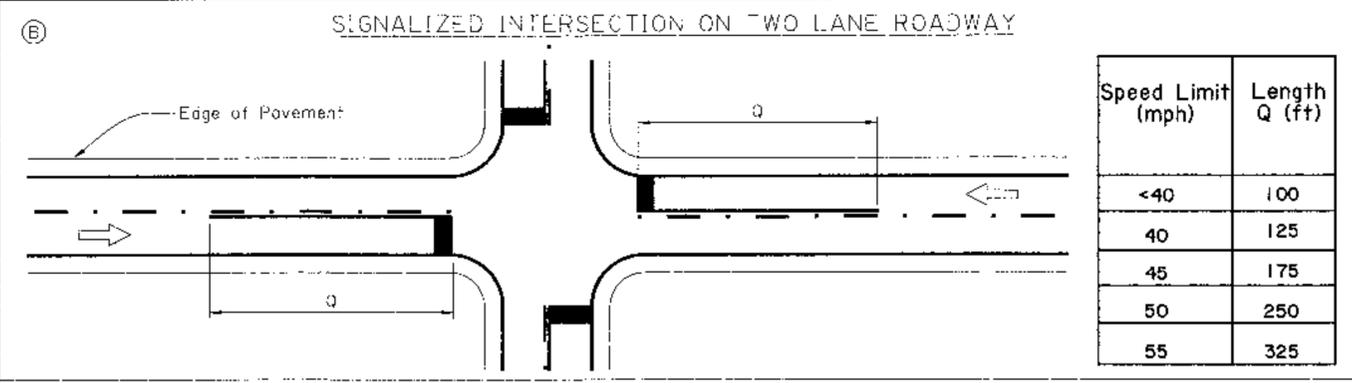
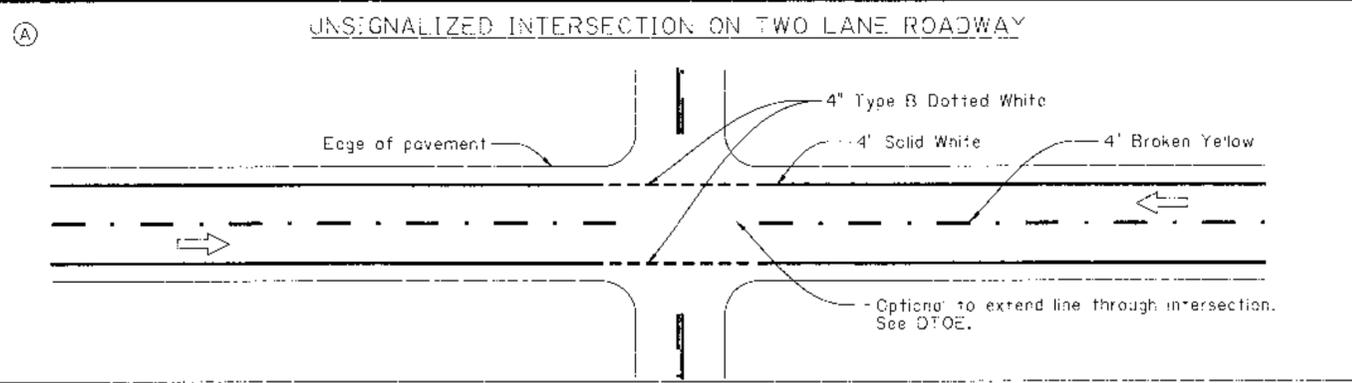
- 4" Edge lines shall be placed on all roadways.
- Place edge lines, centerlines and lane lines to avoid longitudinal joints as directed by the project engineer.
- Edge lines in a curb and gutter section should be kept out of the gutter and clear from debris.
- If rumble strips are used, striping details remain unchanged.
- Centerlines shall be placed on roadways with a traveled way width of 16 feet or greater.
- Where the clear width of a bridge is less than the clear width of the roadway, reflectorized pavement markers shall be placed adjacent to the edge line at 20' centers.
- ⇒ indicates the direction of travel (not a pavement marker).
- For non-interstate striping, use one Raised Reflectorized Pavement Marker.
- White Reflectorized Pavement Marker faces same direction traffic and red faces opposing traffic.

FOR INFORMATIONAL PURPOSES ONLY

GARY V. LEBLANC  
 REG. NO. 22330  
 PROFESSIONAL ENGINEER  
 CIVIL ENGINEERING  
 2-27-19

SHEET NUMBER	248184
DESIGNED BY	G. LEBLANC
CHECKED BY	J. COLVIN
DRAWN BY	K. WILLIAMS
DATE	2/28/19
PROJECT	PAVEMENT MARKING DETAILS
DATE	2/28/19
APPROVED BY	GARY V. LEBLANC
SCALE	AS SHOWN
PROJECT	PAVEMENT MARKING DETAILS
DATE	2-27-19
PROJECT	PAVEMENT MARKING DETAILS
PROJECT	PAVEMENT MARKING DETAILS

\$\$\$ this is the pathname including directory path and design file name \$\$\$ SUBMITTAL STAGE -----\$\$\$



- GENERAL NOTES:**
- If the minor street has edge lines, the edge lines on the major street shall wrap to meet the edge lines on the minor street.
  - Stop bars shall be 24". Stop bars shall not be placed at a distance greater than 30 feet or less than 4 feet from the nearest edge line. Stop bars at right turn lanes should be placed to provide adequate sight distance for right turning traffic.
  - The location of stop bars at left turn lanes should be determined by the turning radius needed by the same street vehicles.
  - See PM-01 for centerline and lane line details.
  - The ONLY word marking shall be used when a through lane terminates as a turn lane.
  - The asterisk (\*) indicates that 2nd arrow is optional. If more than two arrows are used, minimum spacing should be 150'.
  - Edge lines should not be broken for driveways.
  - ➡ indicates the direction of travel (not a pavement marker).
  - L equals the full length of turn lane.
  - Use of dotted lines require DT0E approval.

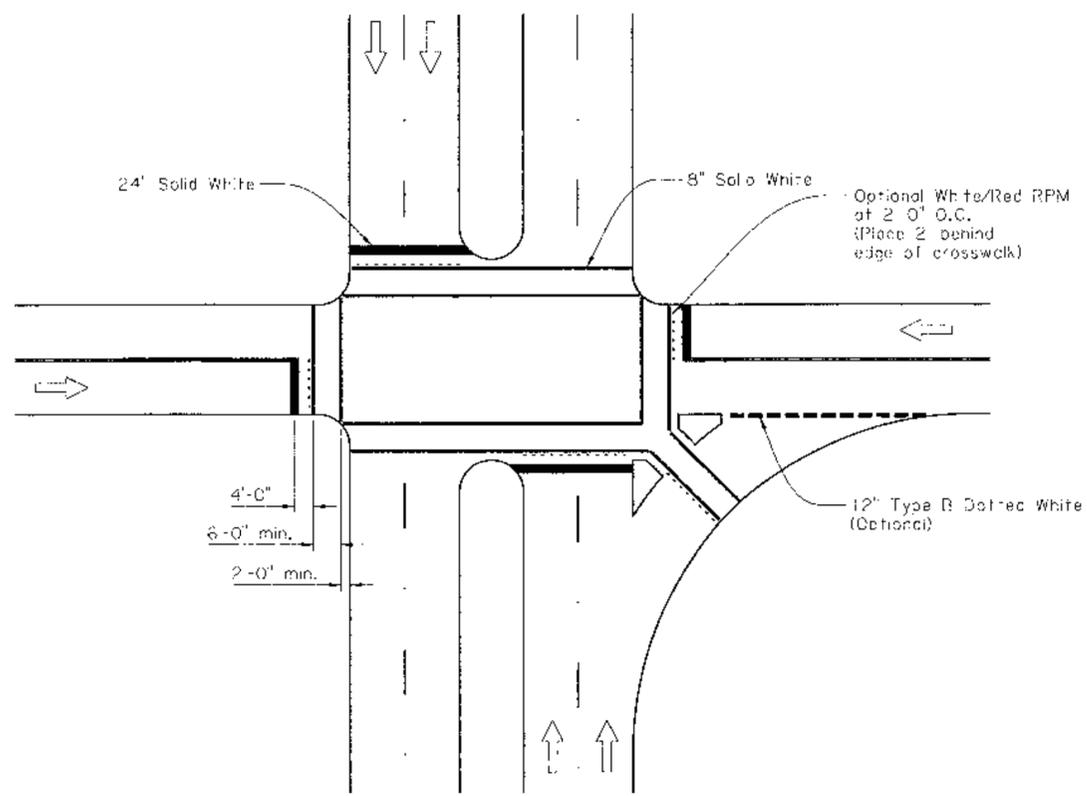


DESIGNED BY: G. WILLIAMS  
 CHECKED BY: J. COLVIN  
 DATE: 2-27-19

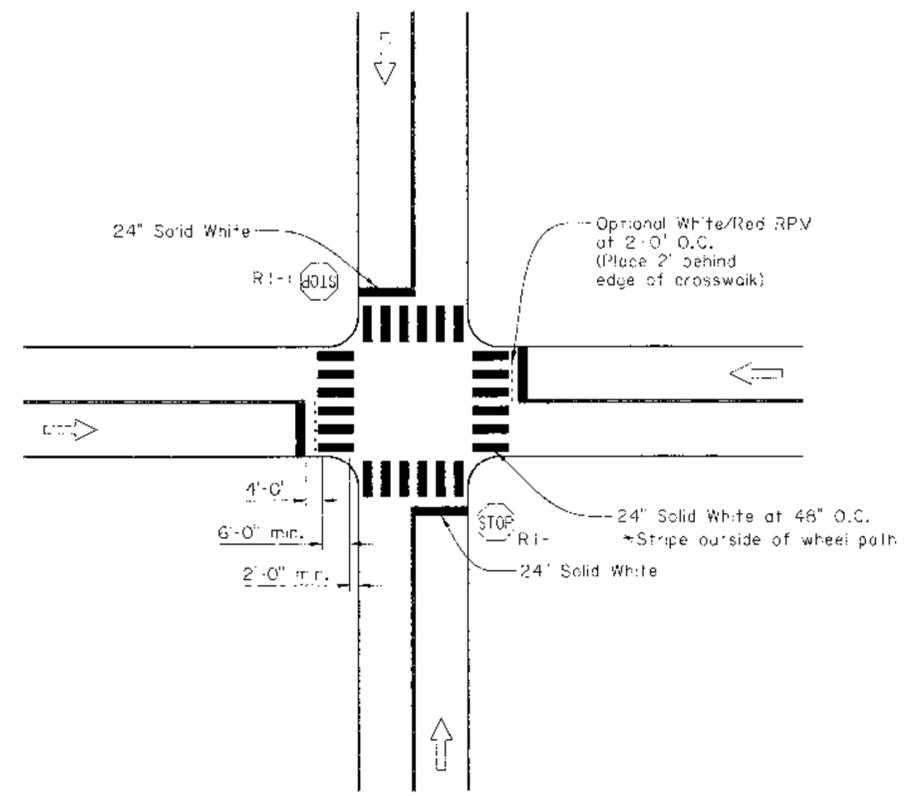
SHEET NUMBER: \_\_\_\_\_  
 PROJECT: \_\_\_\_\_  
 CONTROL SECTION: \_\_\_\_\_  
 STATE: \_\_\_\_\_  
 DATE: 2/28/19  
 APPROVED BY: \_\_\_\_\_  
 CHIEF ENGINEER: \_\_\_\_\_  
 PM-05  
 Typical Intersection Striping Layouts  
 PAVEMENT MARKING DETAILS  
 CS-10

\$\$\$ this is the pathname including directory path and design file name \$\$\$ 11:15  
 \$\$\$ SUBMITTAL STAGE -----\$\$\$  
 \$\$\$ DATES \$\$\$

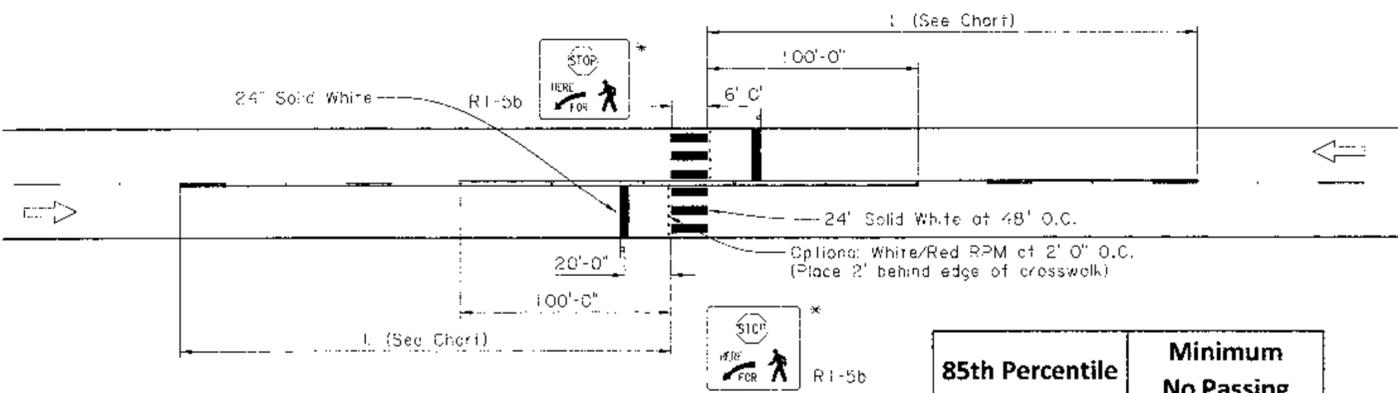
**(A) CROSSWALK MARKINGS AT SIGNALIZED INTERSECTION**



**(B) CROSSWALK MARKINGS AT UNSIGNALIZED INTERSECTION**



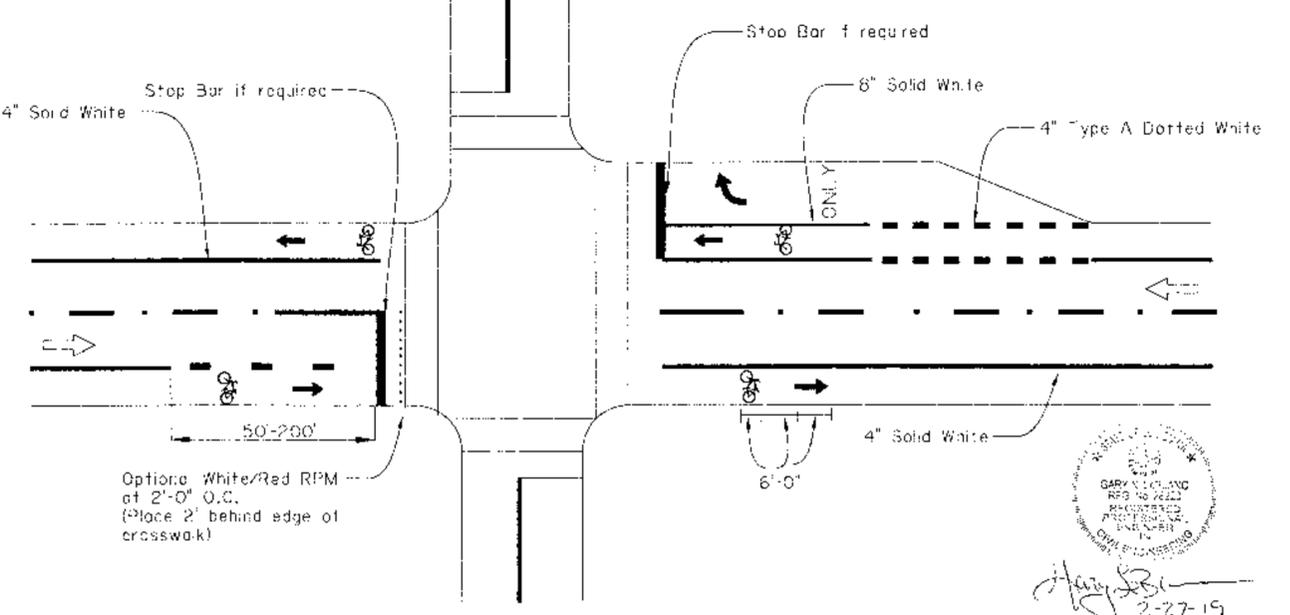
**(C) MID-BLOCK CROSSWALK MARKINGS**



85th Percentile or Speed Limit (mph)	Minimum No Passing on Approach (L in feet)
25	100
30	100
35	100
40	125
45	175
50	250
55	325
60	400
65	475
70	550

\*If within a school zone, sign may be changed to the In Street Schoolchildren Crossing (R1-6c) sign.

**(D) BIKE LANE AT INTERSECTION WITH RIGHT TURN LANE**

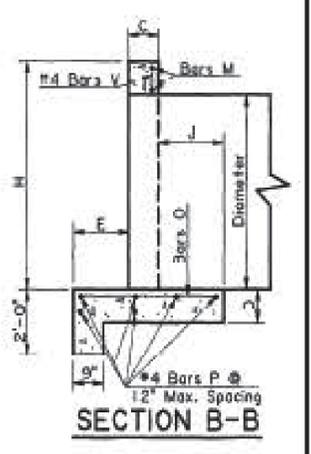
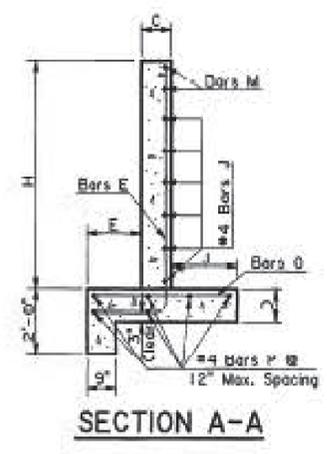
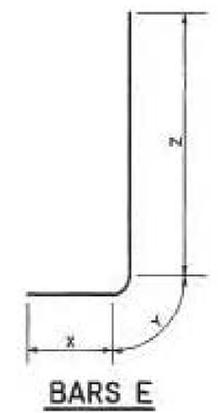


- GENERAL NOTES:**
1. All new and existing crosswalk placement shall require approval by the DTC and justification through an engineering study.
  2. If the width of the existing sidewalk is greater than 6 feet, the width of the crosswalk should match the width of the sidewalk.
  3. ⇨ indicates direction of travel (not a pavement marker).
  4. Bicycle pavement markings should be placed at the beginning of bike lanes, before and after each intersection with a minimum spacing of 100 feet in urban areas to a maximum of 1000 feet in suburban areas.

SHEET NUMBER  
 DATE: 3/28/19  
 APPROVED BY: [Signature]  
 CHECKED BY: G. LEBLANC  
 DESIGNED BY: J. COLVIN  
 DRAWN BY: G. LEBLANC  
 PROJECT: [Blank]  
 SECTION: [Blank]  
 PAVEMENT MARKING DETAILS  
 PN-08  
 Paved/Bike Lane Striping Layout  
 DATE: 2-27-19  
 GARY W. LEBLANC  
 PAVEMENT MARKING  
 CIVIL ENGINEERING  
 CS-11

OPENING		H	E	C	J	D	L	M	S	BARS E					#4 BARS J		BARS O		#4 BARS P		#4 BARS H	#4 BARS V	BARS M		CONC.	STEEL	OPENING		
Dis. ft.	No.	Lgth. ft.in.	No.	Lgth. ft.in.	Sp. in.	X ft.in.	Y ft.in.	Z ft.in.	No.	Lgth. ft.in.	No.	Lgth. ft.in.	No.	Lgth. ft.in.	No.	Lgth. ft.in.	No.	Lgth. ft.in.	CU. YDS.	LBS.	Area sq. ft.	Dis. in.							
4.4	1	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	4	11.0	12	0	0	0	4	11.0	2	11.0	2	11.0	4	11.0	4	11.0	1.2	120	11.0	11.0
4.4	2	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	4	11.0	12	0	0	0	4	11.0	2	11.0	2	11.0	4	11.0	4	11.0	1.2	120	11.0	11.0
4.4	3	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	4	11.0	12	0	0	0	4	11.0	2	11.0	2	11.0	4	11.0	4	11.0	1.2	120	11.0	11.0
4.4	4	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	4	11.0	12	0	0	0	4	11.0	2	11.0	2	11.0	4	11.0	4	11.0	1.2	120	11.0	11.0
4.4	5	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	4	11.0	12	0	0	0	4	11.0	2	11.0	2	11.0	4	11.0	4	11.0	1.2	120	11.0	11.0
4.4	6	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	4	11.0	12	0	0	0	4	11.0	2	11.0	2	11.0	4	11.0	4	11.0	1.2	120	11.0	11.0
4.4	7	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	4	11.0	12	0	0	0	4	11.0	2	11.0	2	11.0	4	11.0	4	11.0	1.2	120	11.0	11.0
4.4	8	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	4	11.0	12	0	0	0	4	11.0	2	11.0	2	11.0	4	11.0	4	11.0	1.2	120	11.0	11.0
4.4	9	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	4	11.0	12	0	0	0	4	11.0	2	11.0	2	11.0	4	11.0	4	11.0	1.2	120	11.0	11.0
4.4	10	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	4	11.0	12	0	0	0	4	11.0	2	11.0	2	11.0	4	11.0	4	11.0	1.2	120	11.0	11.0

FEDERAL PROJECT	STATE PROJECT	PARISH	SHEET NO.
			595



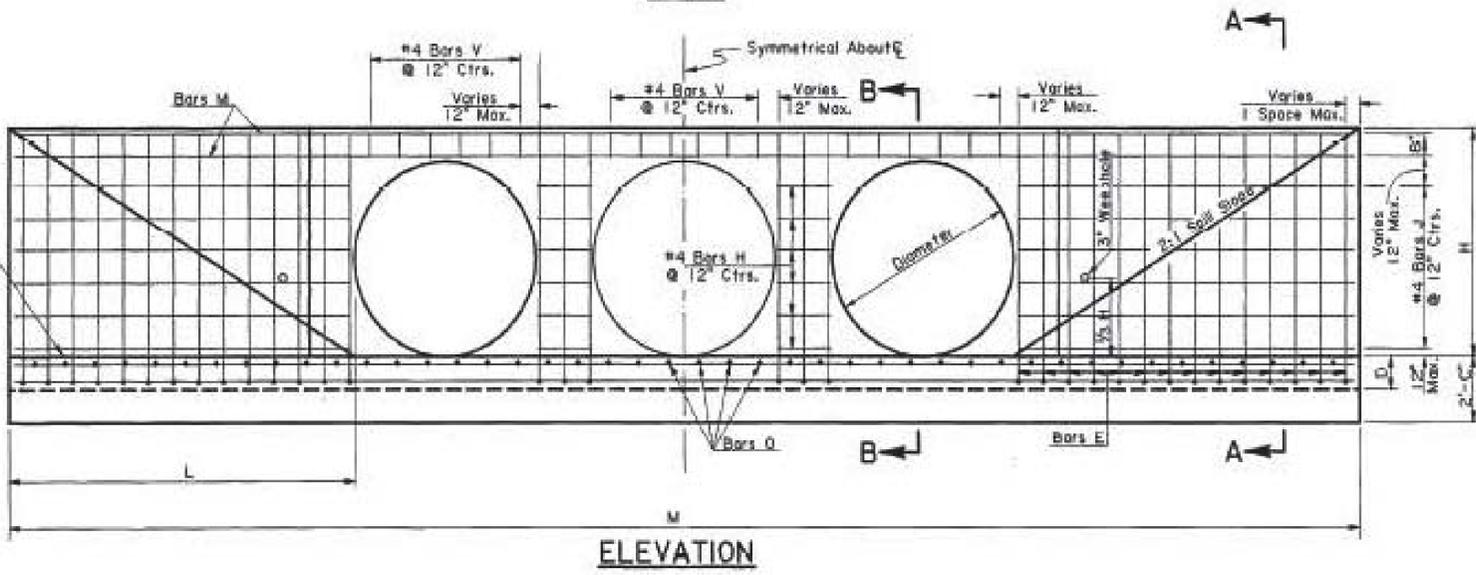
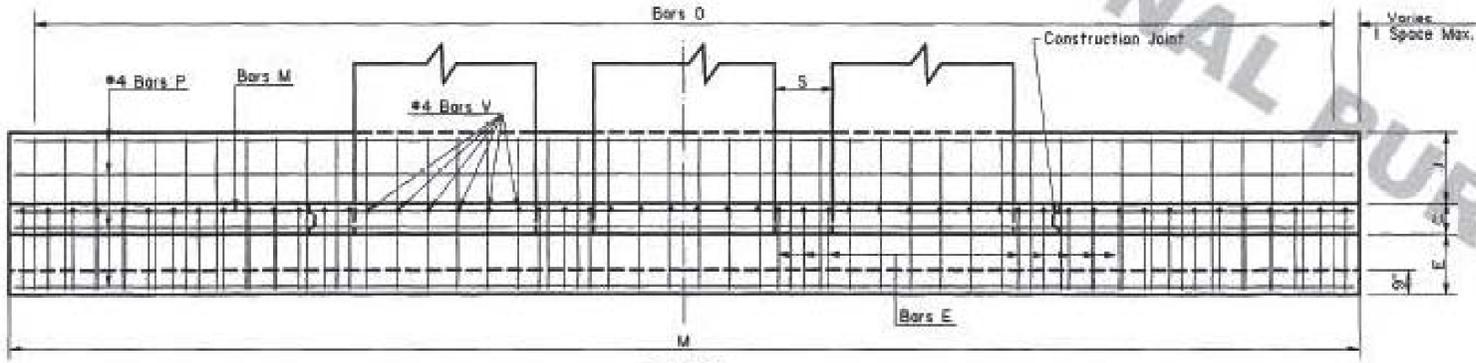
**GENERAL NOTES**

**DESIGN:** Method- Headwalls are designed as retaining walls according to current AASHTO working stress procedures. Walls are designed for a lateral earth pressure of 40 psf with 2.0 feet of surcharge. **Overturning-** A minimum safety factor of 2.0 is provided against overturning. The resultant of loads is within the middle third of the footing. **Sliding -** A minimum safety factor of 1.5 is provided against sliding. The coefficient of friction between the footing and soil is 0.5. **Foundation** The design soil bearing pressure is 1800 psf. When strength of the soil at the site is less than 1800 psf, bedding material shall be added under the footing as directed.

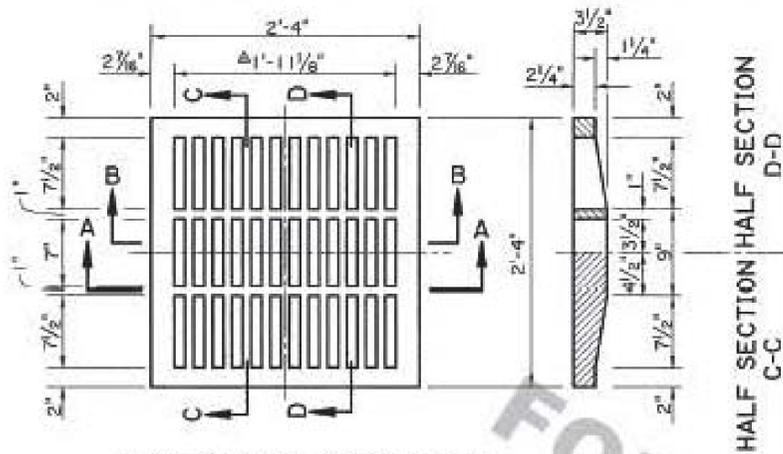
**MATERIALS:** **Concrete** All concrete shall be class A. All exposed edges shall be 3/8 inch chamfered. **Reinforcing Steel** - Reinforcement shall be Grade 60. Bar spacing dimensions are to bar centers. Steel required for lap apices not detailed shall not be measured for payment. Reinforcing steel shall have 2" cover unless otherwise specified. Steel and concrete quantities shown in table are for one headwall.

A 1'-6" square of geotextile fabric (see Section 1019 of the LA DOTD Standard Specifications) shall be placed in contact with concrete behind each weep hole in addition to approximately 2 cu.ft. of concrete sand (see Section 1003.02 of the LA DOTD Standard Specifications).

**CONSTRUCTION JOINTS:** All construction joints shown are optional. For details of keyed construction joints see Standard Plan CM-49. For construction joints without key, the joint surface shall be roughened. Hardened surface shall be cleaned, immediately before new concrete is placed, joint surface shall be saturated with W014F.

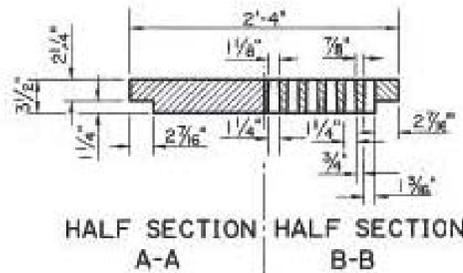


SPECIAL DETAIL NO. HW90CMP1		SHEET 1 OF 1	
<b>STRAIGHT HEADWALL FOR CMP ON A 90° CROSSING 15" THRU 54"</b>			
DATED January 6, 1995			
STATE OF LOUISIANA DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT			
11-14-97	Revised General Notes And Assigned Name: HW90CMP1	JCM	DESIGNED PAA
DATE	DESCRIPTION	BY	CHECKED PAA
			FILE hw90cmp.dgn
REVISIONS			
HYDRAULICS SECTION			



PLAN OF CAST IRON GRATE

2'-4" = 12 OPENINGS @ 1 1/8"  
11 BARS @ 7/8"

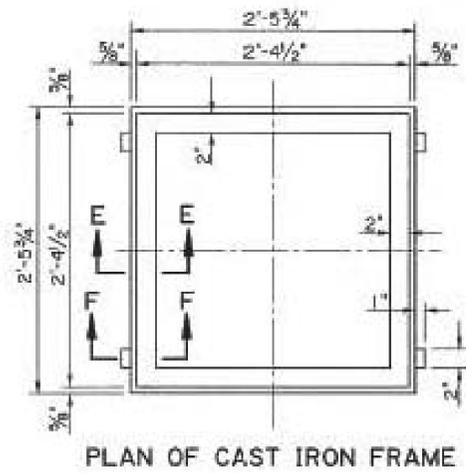


HALF SECTION A-A HALF SECTION B-B

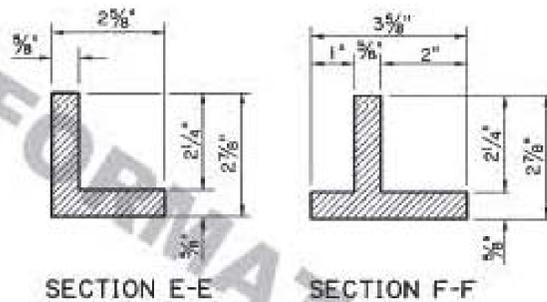
**TYPE "A"**

**CAST IRON GRATE & FRAME**

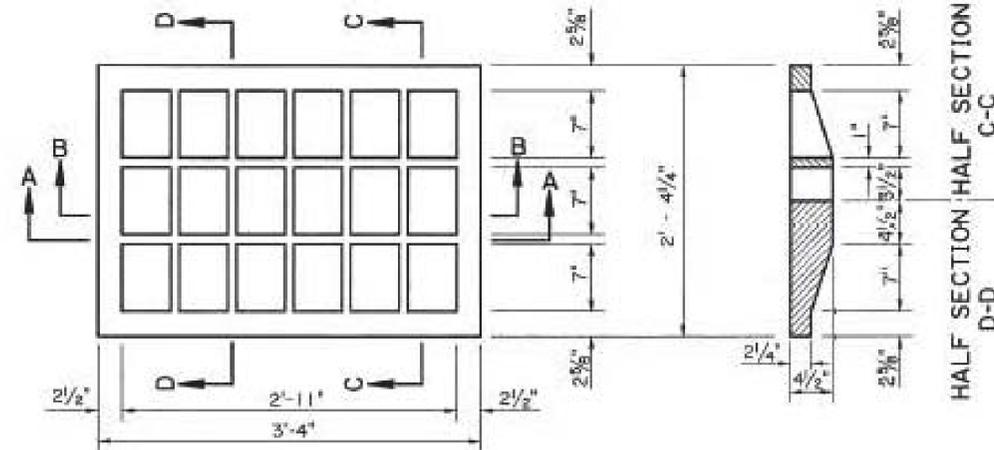
- NOTES: 1. WEIGHT OF CAST IRON GRATE = 334 LBS
- 2. WEIGHT OF CAST IRON FRAME = 90 LBS



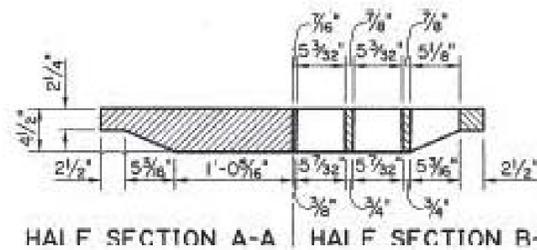
PLAN OF CAST IRON FRAME



SECTION E-E SECTION F-F



PLAN OF CAST IRON GRATE



HALF SECTION A-A HALF SECTION B-B

**TYPE "B"**

**CAST IRON GRATE**

- NOTES: 1. WEIGHT OF CAST IRON GRATE = 350 LBS
- 2. UNLESS OTHERWISE STATED, TYPE "E" FRAME WILL BE USED WITH THIS GRATE.

**TYPE "C"**

**STEEL DRAIN GRATE**

- NOTES: 1. GRATES TO BE GALVANIZED AFTER FABRICATION.
- 2. UNLESS OTHERWISE STATED, TYPE "E" FRAME IS TO BE USED WITH THESE GRATES. (SEE SHEET 2)
- 3. SUPPLIER OF GRATE ALSO IS TO FURNISH PRE-FITTED GRATE FRAME.

**WELDED & SEALED DRAIN GRATE**

CONTINUOUS WELD FOR FULL DEPTH EACH BEARING BAR TO END BARS AND CROSS BARS.

ALL BEARING BARS TO BE SET FLUSH ON GRATE FRAME.

WEIGHT OF DRAIN GRATE = 233 LBS. + 5%

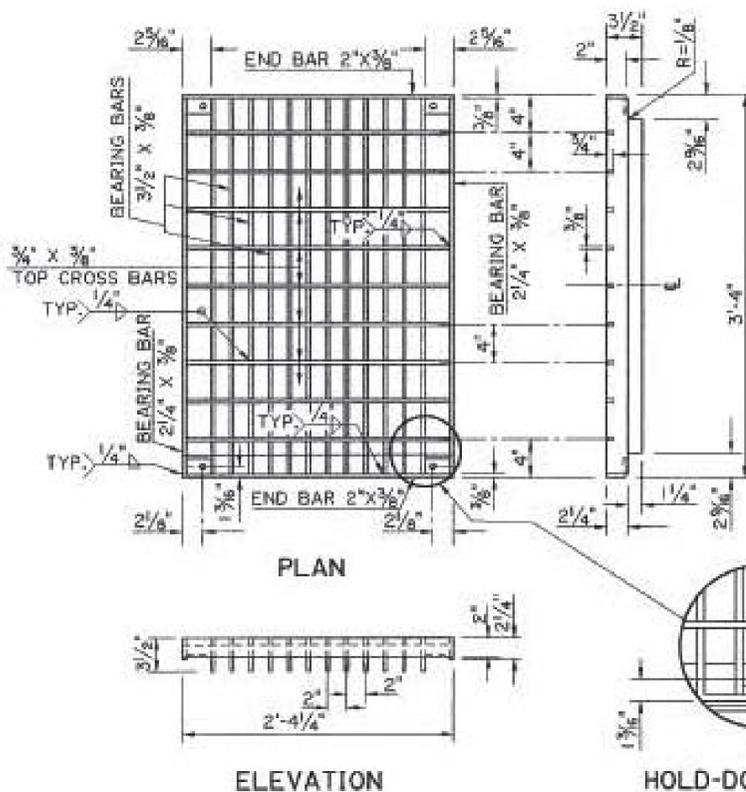
**RIVETED RETICULINE DRAIN GRATE ALTERNATE**

CONTINUOUS WELD FOR FULL DEPTH EACH BEARING BAR TO END BARS.

ALL BEARING BARS TO BE SET FLUSH ON GRATE FRAME.

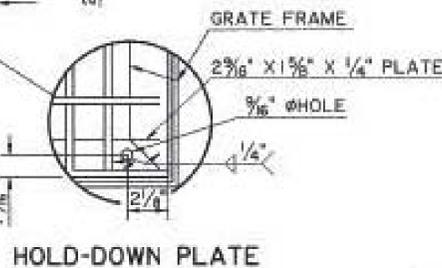
CENTER TO CENTER OF BEARING BARS EQUAL 2 5/8" PLUS BEARING BAR THICKNESS.

WEIGHT OF DRAIN GRATE = 266 LBS. + 5%

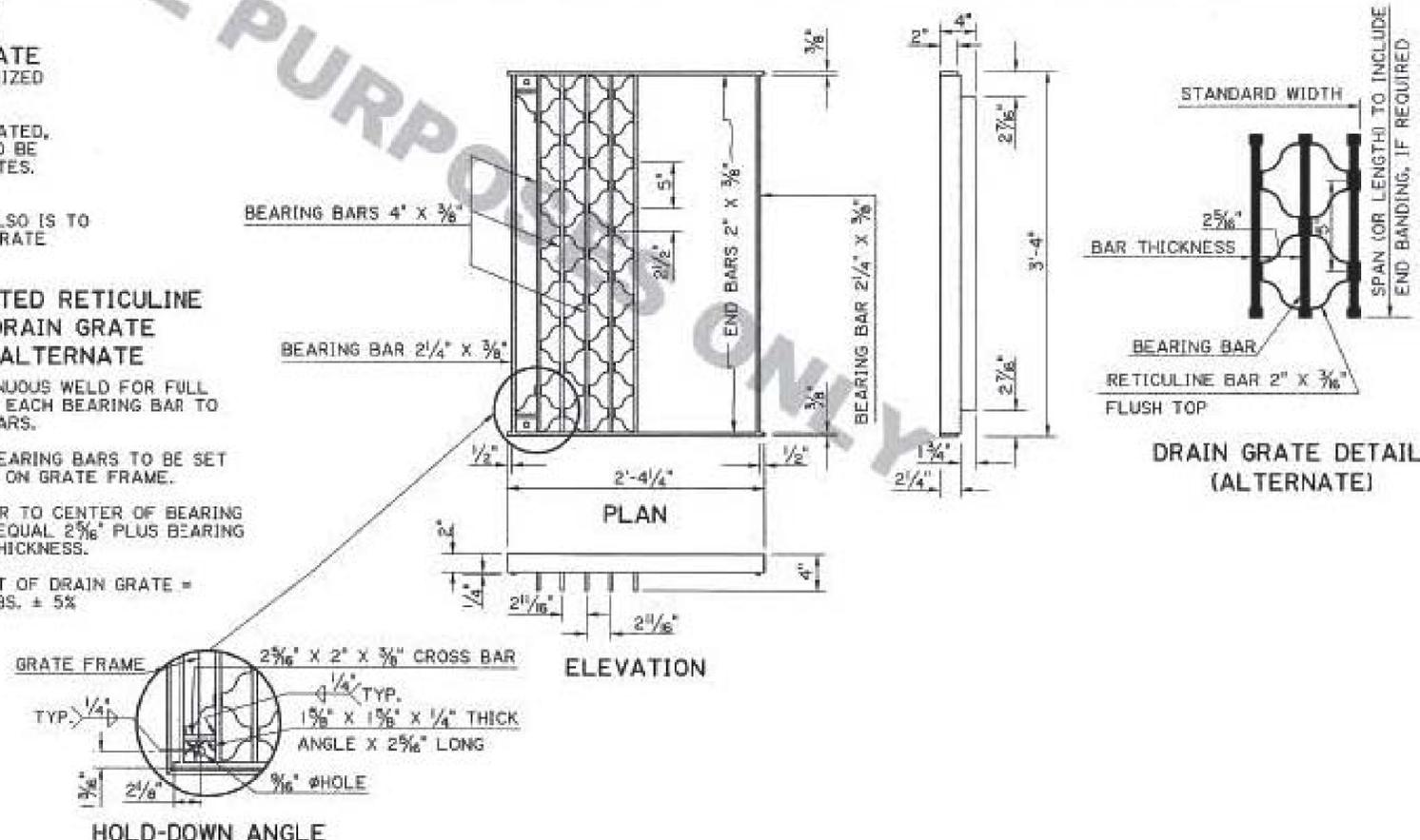


PLAN

ELEVATION

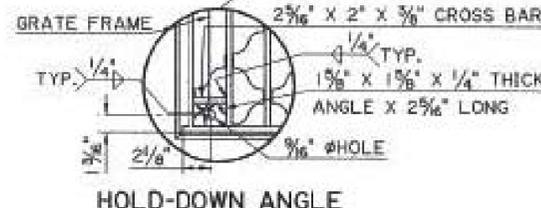


HOLD-DOWN PLATE



PLAN

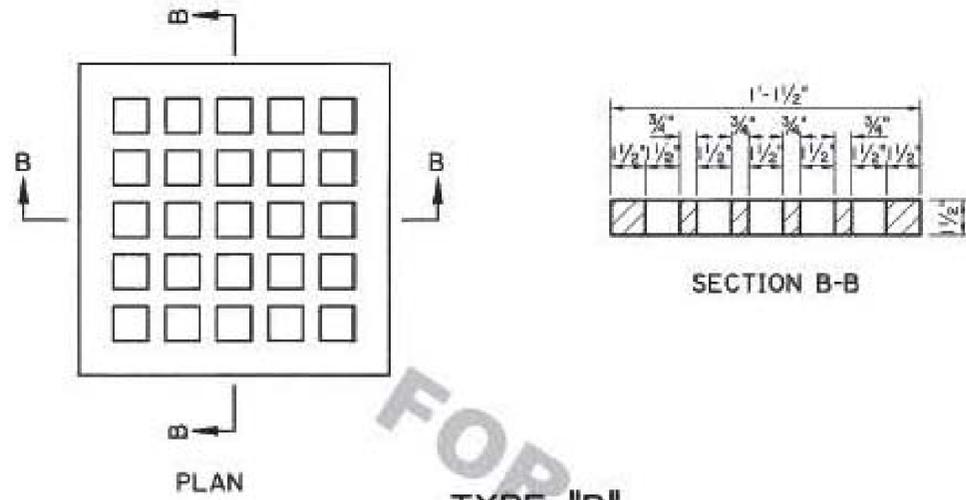
ELEVATION



HOLD-DOWN ANGLE

DRAIN GRATE DETAIL (ALTERNATE)

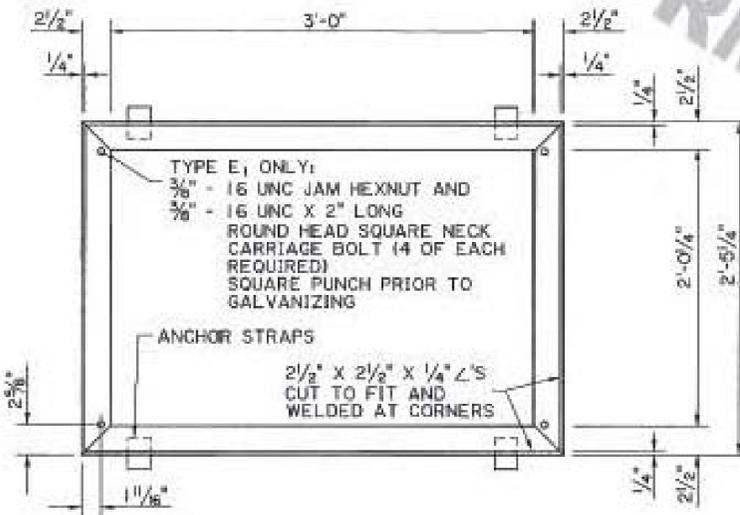
SHEET NUMBER		599	
DATE	8-15-77	DATE	4-16-72
DESIGNED	JCM	DESIGNED	JCM
CHECKED	JCM	CHECKED	JCM
APPROVED BY	Chief Engineer	APPROVED BY	Chief Engineer
DETAILS OF GRATES, GRATE FRAMES AND COVERS FOR CATCH BASINS AND MANHOLES			
STANDARD PLAN MC-01			
CS-13			



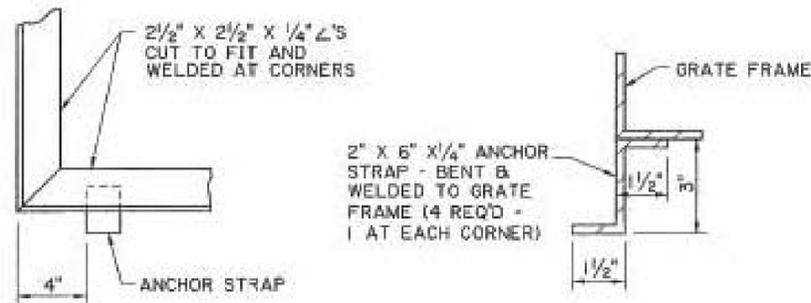
**TYPE "D"**

CAST IRON GRATE

WEIGHT OF CASTING = 49 LBS



PLAN

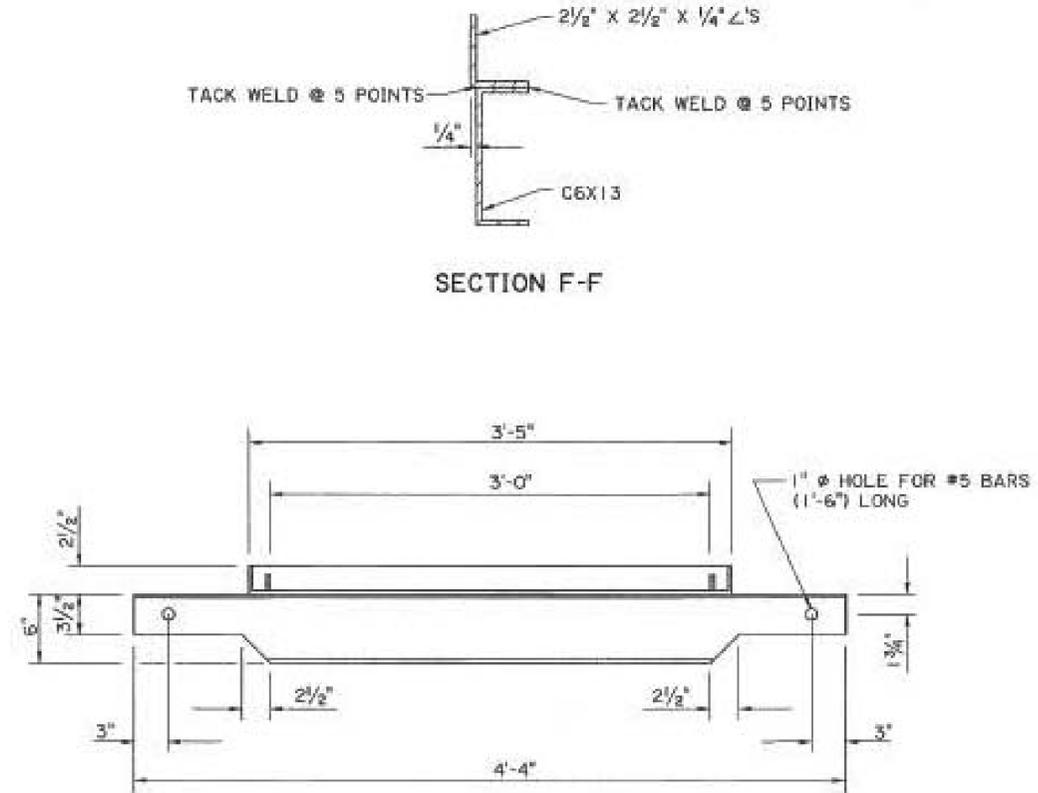


ANCHOR STRAP DETAILS

**TYPE "E" OR "E<sub>1</sub>"**

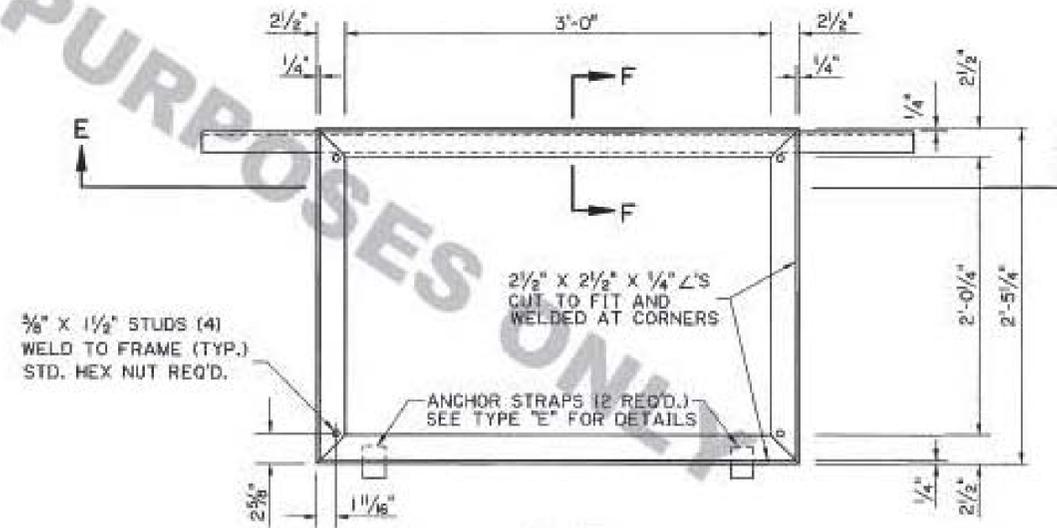
STEEL GRATE FRAME

- NOTES: 1. GRATE FRAME TO BE GALVANIZED AFTER FABRICATION  
2. WEIGHT OF GRATE FRAME = 52 LBS



SECTION F-F

SECTION E-E



PLAN

**TYPE "F"**

STEEL GRATE FRAME

- NOTES: 1. GRATE FRAME TO BE GALVANIZED AFTER FABRICATION  
2. WEIGHT OF GRATE FRAME = 52 LBS + 5X

SHEET NUMBER		600	
DESIGNED	DECORATED	DATE	18-15-77
DETAILS	PREPARED	SHEET	2 OF 4
APPROVED BY	DATE	PROJECT	
CHIEF ENGINEER			

GENERAL REVISIONS

NO.	DATE	DESCRIPTION
4-16-12		GENERAL REVISIONS
8-11-06		GENERAL REV. - ADD TYPE K, REVISED TYPES C,E,I,N
9-26-94		GENERAL REVISIONS - DELETE TYPES G,J,L,M,O

APPROVED BY: *Richard J. Smith*

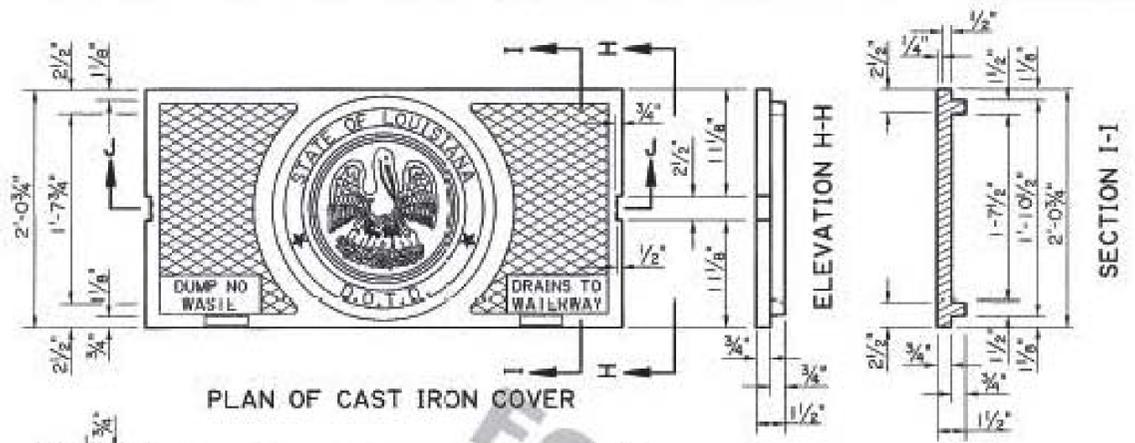
DATE: 4-16-77

PROJECT: CS-14

DETAILS OF GRATES, GRATE FRAMES AND COVERS FOR CATCH BASINS AND MANHOLES

STANDARD PLAN MC-01

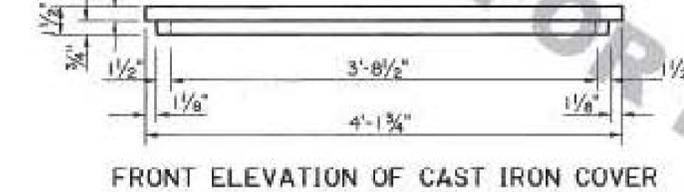
CS-14



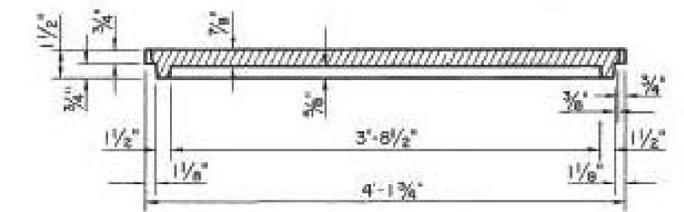
PLAN OF CAST IRON COVER

ELEVATION H-H

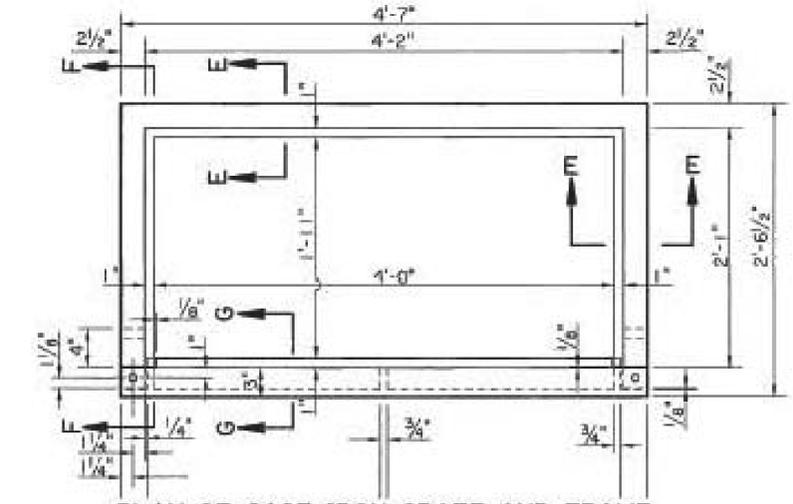
SECTION I-I



FRONT ELEVATION OF CAST IRON COVER



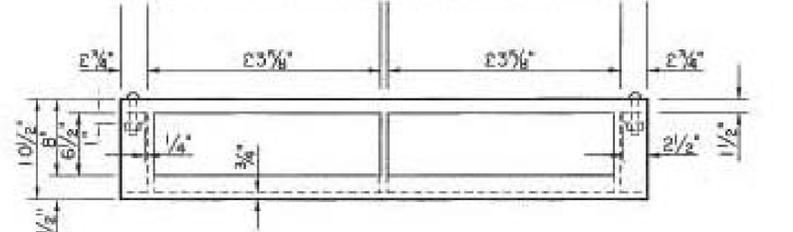
SECTION J-J



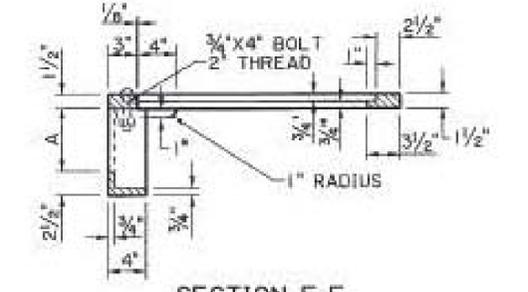
PLAN OF CAST IRON GRATE AND FRAME

SECTION E-E

SECTION G-G

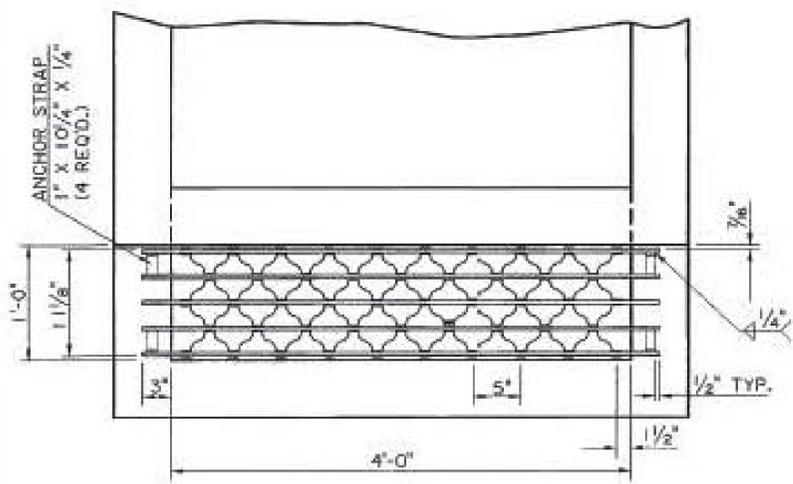


FRONT ELEVATION OF CAST IRON GRATE AND FRAME



SECTION F-F

**TYPE "H"**  
**CAST IRON COVER, GRATE AND FRAME**  
 NOTES: WEIGHT OF CAST IRON COVER = 268 LBS.  
 WEIGHT OF CAST IRON FRAME = 129 LBS.  
 WEIGHT OF CAST IRON GRATE = 160 LBS.



PLAN

**RIVETED RETICULINE DRAIN GRATE ALTERNATE**

CENTER TO CENTER OF BEARING BARS EQUAL 2 1/8".  
 WEIGHT OF DRAIN GRATE = 176 LBS. ± 5%

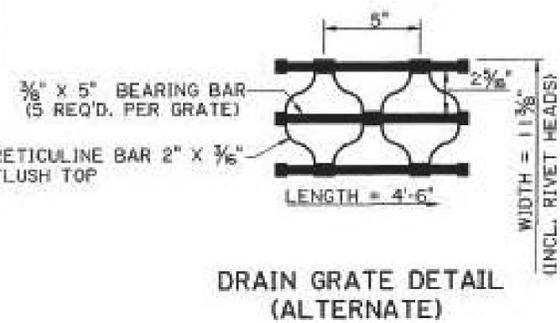
**WELDED & SEALED DRAIN GRATE**

WELD FULL DEPTH SEAL AFTER STRENGTH WELD IS COMPLETED.  
 WEIGHT OF DRAIN GRATE = 185 LBS. ± 5%

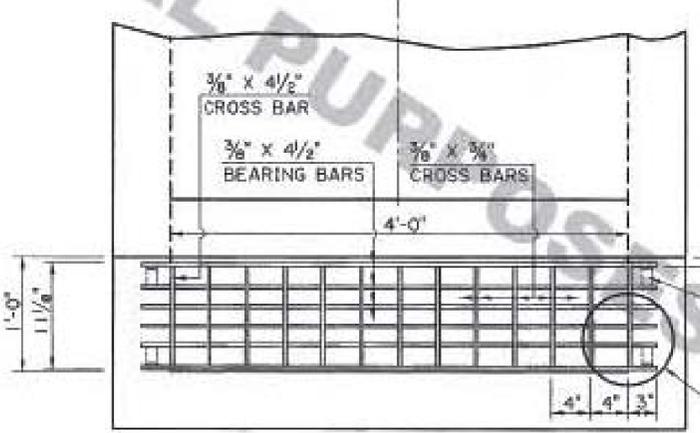
**TYPE "I"**

**STEEL DRAIN GRATE**

GRATE TO BE GALVANIZED AFTER FABRICATION.



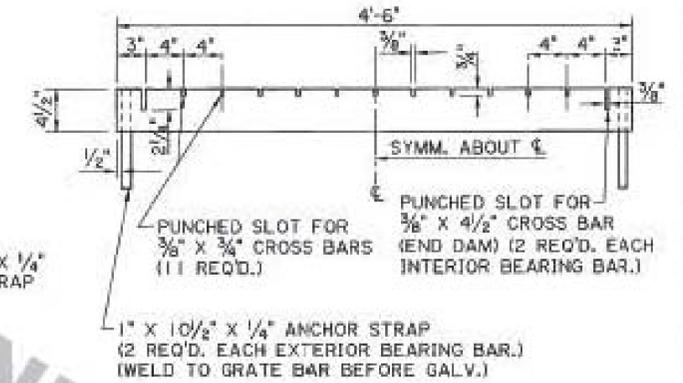
**DRAIN GRATE DETAIL (ALTERNATE)**



PLAN

**WELDED AND SEALED STEEL GRATE**

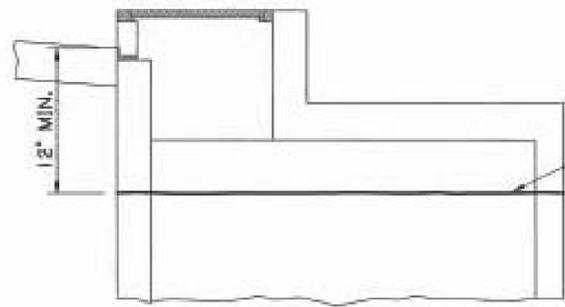
PUNCHED SLOTS @ 2" CTRS.  
 3/8" x 4 1/2" END CROSS BAR (2 REQ'D. PER GRATE)



ELEVATION

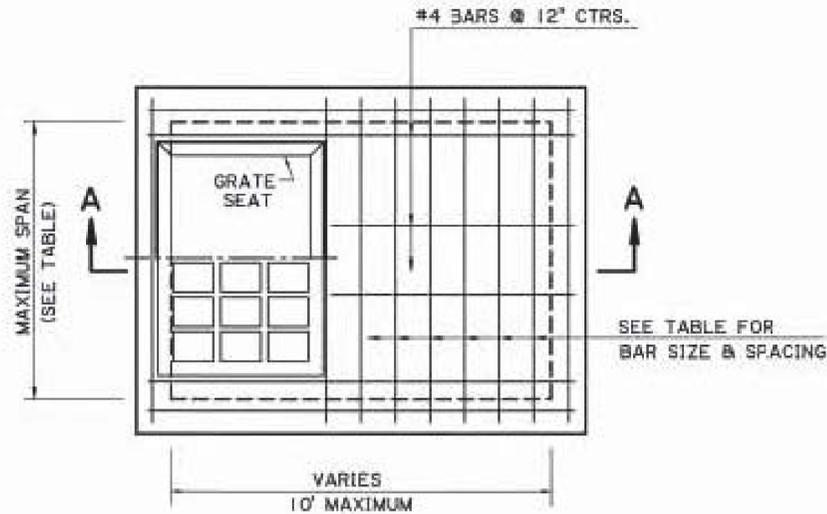
DESIGNED	DATE	BY	DATE
DETAILED	8-15-77	JCM	4-16-92
CHECKED	3 OF 4		
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**SECTION  
EXISTING STRUCTURE**

REMOVE EXISTING CATCH BASIN OR MANHOLE TO THIS LINE. IF CONCRETE, EXISTING BARS TO BE EXPOSED, CLEANED, AND BENT AS SHOWN IN SECTION A-A.



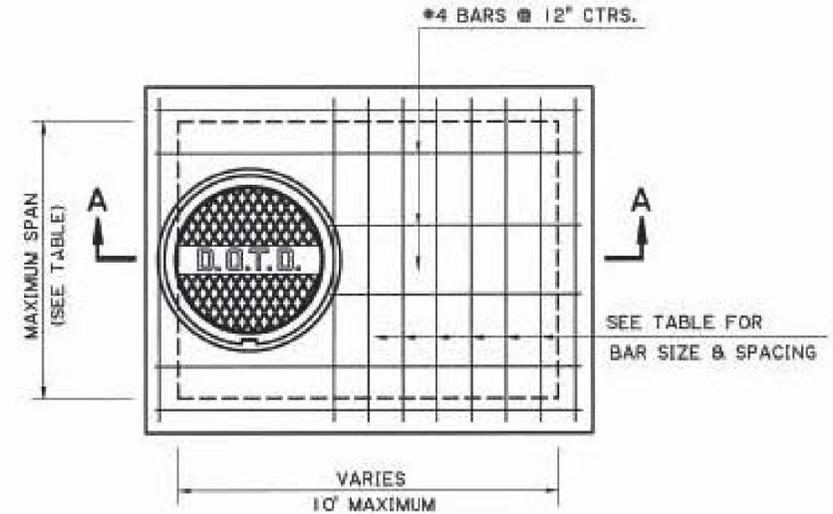
**CATCH BASIN PLAN**

SHOWING NEW CONSTRUCTION GRATE TO BE TYPE "B" OR "C". TYPE "B" SHOWN.\*

\* TYPE "B" AND "C" GRATES SHOULD NOT BE USED IN THE TRAVEL LANE.

TYPE "B" GRATE IS TO BE USED WHERE NO PEDESTRIAN TRAFFIC AND NO VEHICULAR TRAFFIC IS EXPECTED. (DITCHES, ETC.)

TYPE "C" GRATE IS TO BE USED WHERE PEDESTRIAN TRAFFIC AND/OR LIGHT VEHICULAR TRAFFIC IS EXPECTED. (DRIVEWAYS, SHOULDERS, ETC.)



**MANHOLE PLAN**

SHOWING NEW CONSTRUCTION

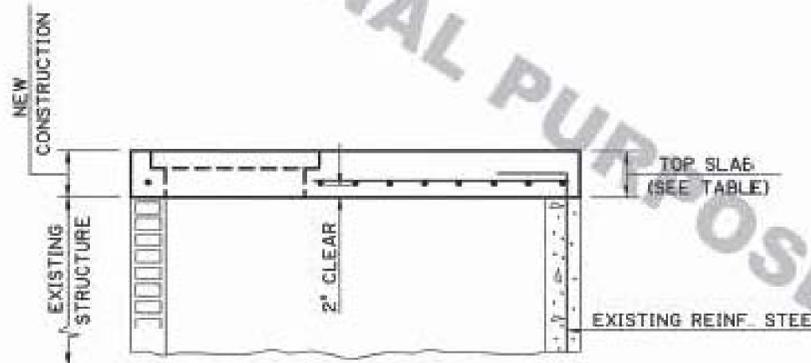
**GENERAL NOTES:**

DIMENSIONS RELATING TO REINFORCED STEEL ARE TO BARS CENTERS.

FOR DETAILS OF CATCH BASIN GRATE AND SEAT, SEE STD. PLAN MC-01 (TYPE B OR C).

FOR DETAILS OF MANHOLE CAST IRON COVER AND SEAT, SEE STD. PLAN MC-01 (TYPE K OR K<sub>1</sub>).

PROJECT SPECIFICATIONS FOR MANHOLES, JUNCTION BOXES AND CATCH BASINS SHALL APPLY.



**SECTION A-A**

SHOWING NEW CONSTRUCTION FOR CATCH BASIN OR MANHOLE (FOR CONCRETE OR BRICK WALL)

MAXIMUM SPAN	TOP SLAB	BAR SIZE	BAR SPACING
4'	8"	#5	8"
6'	8 1/2"	#5	6"
8'	9 1/2"	#5	5"
9'	10 1/2"	#5	4"

**ADJUSTMENT/CONVERSION OF EXISTING CATCH BASINS OR MANHOLES**

- NOTE:
- 1) FOR ALL CATCH BASIN ADJUSTMENTS, THIS DETAIL SHOULD BE INCLUDED IN THE PLANS AND PAID FOR AS PAY ITEM "ADJUSTING CATCH BASINS".
  - 2) FOR ALL CATCH BASIN AND MANHOLE CONVERSIONS (CATCH BASIN TOP TO MANHOLE TOP OR MANHOLE TOP TO CATCH BASIN TOP), THIS DETAIL SHOULD BE INCLUDED IN THE PLANS ALONG WITH THE APPROPRIATE STANDARD PLAN/SPECIAL DETAIL TO CONSTRUCT THE NEW TOP. IF NO STANDARD PLAN/SPECIAL DETAIL IS INCLUDED, THE TOP IS TO BE BUILT AS SHOWN ON THIS DETAIL. ALL CONVERSIONS SHOULD BE PAID FOR AS PAY ITEM "NS-MSC-00120".
  - 3) FOR ALL MANHOLE ADJUSTMENTS GREATER THAN 7", THIS DETAIL SHOULD BE INCLUDED IN THE PLANS AND PAID FOR AS PAY ITEM "ADJUSTING MANHOLES".
  - 4) FOR ALL MANHOLE ADJUSTMENTS LESS THAN OR EQUAL TO 7", MANHOLE ADJUSTMENT RINGS MAY BE USED. PAYMENT SHALL BE UNDER PAY ITEM "ADJUSTING MANHOLES WITH MANHOLE ADJUSTMENT RINGS" AND NO DETAIL IS NEEDED IN THE PLANS. REFER TO STANDARD PLAN MC-01.
  - 5) FOR ALL CATCH BASIN/MANHOLE ADJUSTMENTS, CLEAN EXISTING GRATES/FRAMES AS PER PROJECT SPECIFICATIONS FOR MANHOLES, JUNCTION BOXES AND CATCH BASINS.



M. Hashem  
12/21/2010

PARISH FEDERAL PROJECT STATE PROJECT

DESIGNED BY PAA  
CHECKED BY KAJ  
DRAWN BY PAA  
DATE 2-7-90  
SHEET 1 OF 1

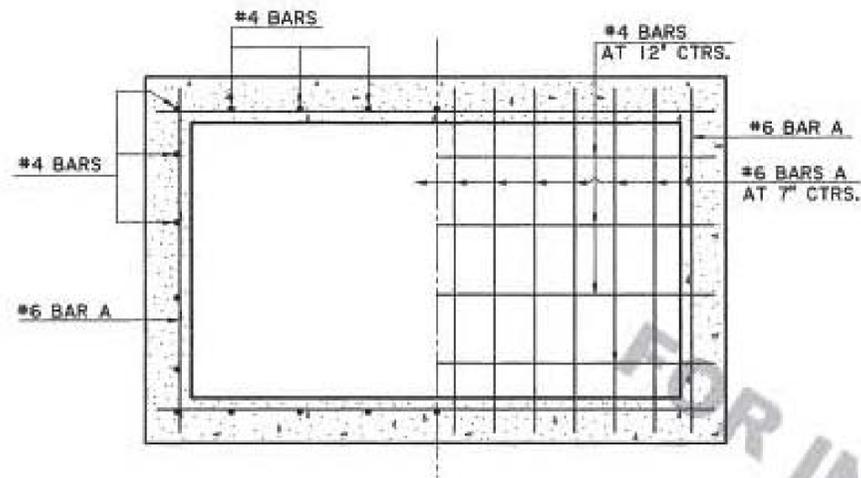
MH  
MH  
JDP  
JCM  
JCM

Revised note 2 for conversions, general revisions  
Added Notes 1,2,3,4. Rev. Type "N" Grate to "C"  
Added 9' max. span to table.  
New sheet added  
Changed sheet border & added name  
REVISED 3/23/10

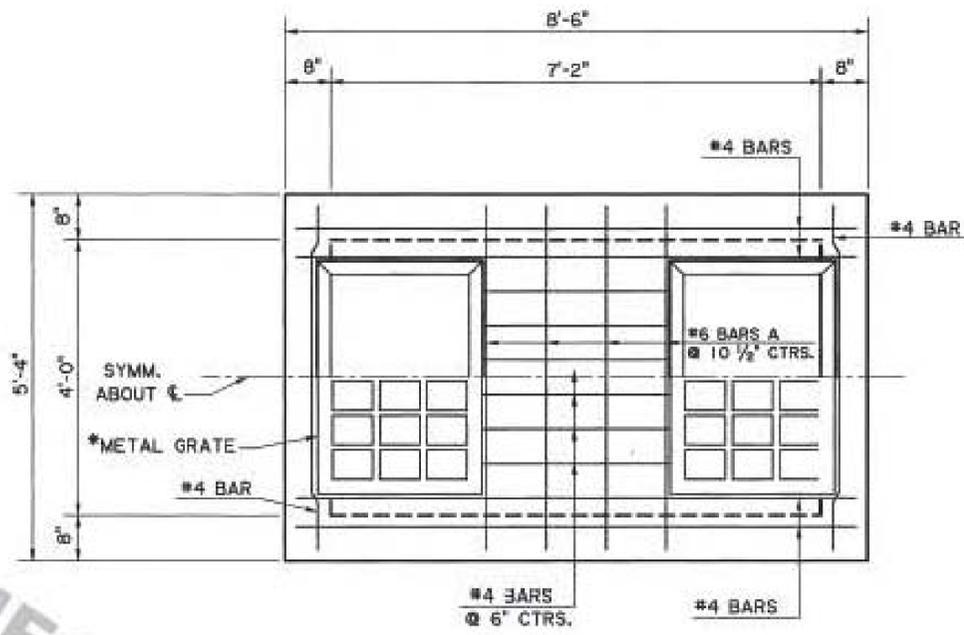


ADJUSTMENT/CONVERSION OF EXISTING CATCH BASINS OR MANHOLES  
CB-ADJUST



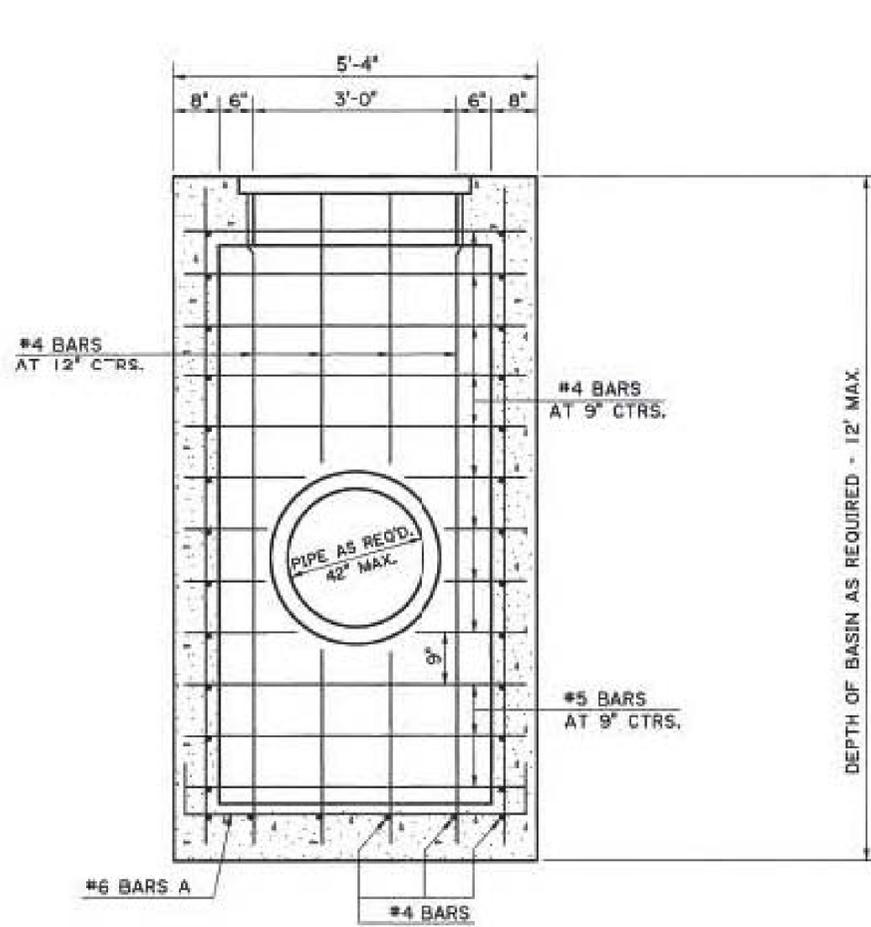


**SECTIONAL PLAN**  
(SHOWING BOTTOM SLAB & WALLS)

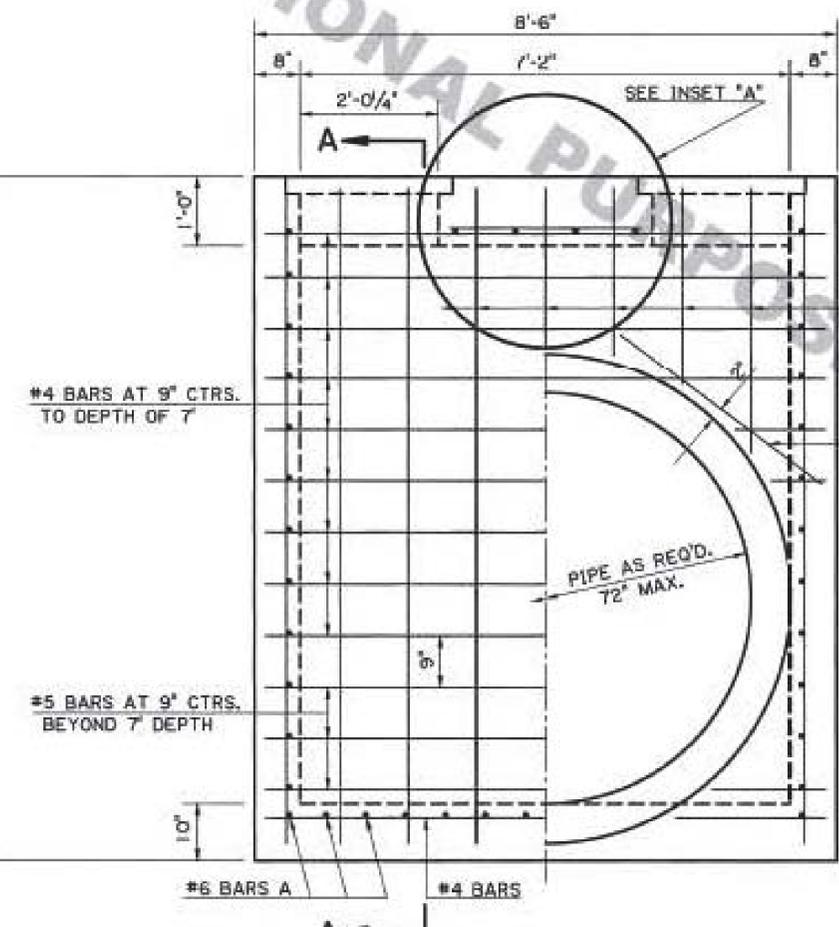


**PLAN**  
\*GRATE TO BE TYPE "B" OR "C".  
TYPE "B" SHOWN.  
(SEE GENERAL NOTES.)

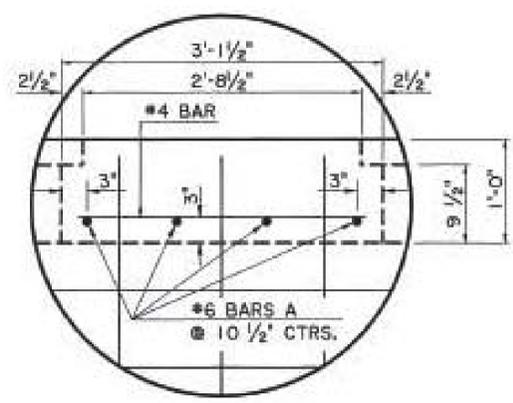
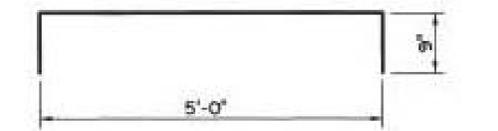
- GENERAL NOTES:**
- 1) THIS CATCH BASIN SHOULD ONLY BE USED OUTSIDE OF THE TRAVEL LANE.
  - 2) CATCH BASIN IS DESIGNED ACCORDING TO 4TH ED. 2007 AASHTO LRFD PROCEDURES, SECTION 702 OF THE CURRENT DOT STANDARD SPECIFICATIONS SHALL APPLY.
  - 3) REINFORCING STEEL SHALL BE GRADE 60. DIMENSIONS ARE TO BAR CENTERS. MINIMUM COVER FOR REINFORCING BARS SHALL BE 2 IN. CLEAR UNLESS SHOWN OTHERWISE.
  - 4) PIPE SIZE AND LOCATION VARIES. CUT REINFORCING STEEL TO CLEAR, AS REQUIRED.
  - 5) TYPE "B" GRATE IS TO BE USED WHERE NO PEDESTRIAN TRAFFIC AND NO VEHICULAR TRAFFIC IS EXPECTED. (DITCHES, ETC.)
  - 6) TYPE "C" GRATE IS TO BE USED WHERE PEDESTRIAN TRAFFIC AND/OR LIGHT VEHICULAR TRAFFIC IS EXPECTED. (DRIVEWAYS, SHOULDERS, ETC.)
  - 7) FOR DETAILS OF GRATE AND SEAT, SEE STD. PLAN MC-01 (TYPE B or C).
  - 8) SEE PLANS FOR TYPE OF GRATE TO BE USED FOR EACH CATCH BASIN.



**SECTION A-A**



**ELEVATION**



**INSET "A"**



REVISION	DATE	BY	DESCRIPTION
3	8-25-11	MMR	REDRAFTED, REV. TO AASHTO LRFD PROCEDURES, WMR
2	1-17-06	JCM	NEW SHEET, GENERAL REVISIONS
1	3-23-98	JCM	SCANNED ORIGINAL & ADDED NAME

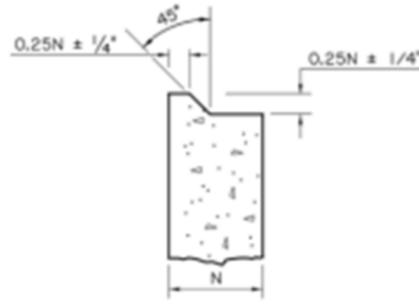


**DOUBLE OPEN TOP CATCH BASIN**  
Max. Size: 7'-2" x 4'-0"  
Max. Depth: 12'  
To be used with Std. Plan MC-01



**GENERAL NOTES:**

- THIS STRUCTURE MEETS ALL DOTD HYDRAULIC PERFORMANCE CRITERIA WHEN USED IN ACCORDANCE WITH THE DOTD HYDRAULICS MANUAL AND ALL DOTD HYDRAULIC DESIGN POLICIES.
- PROVIDE PRECAST UNITS AS THE LOWER PORTION OF A COMPOSITE STRUCTURE. PROVIDE CAST-IN-PLACE CONCRETE (SEE APPROPRIATE STANDARD PLAN FOR REQUIRED REINFORCING AND DIMENSIONS) FOR THE TOP 1'-6" OF THE STRUCTURE AS FOLLOWS:
  - CB-01, CB-02, CB-04, CB-05, AND MANHOLES MAY BE FULLY PRECAST IF THE STRUCTURES ARE NOT EXPOSED TO TRAFFIC LOADS; ELEVATIONS MUST BE FIELD VERIFIED PRIOR TO FABRICATION.
  - CB-06, CB-07, CB-08, AND CB-09 STRUCTURES MUST HAVE THE TOP 18" CAST-IN-PLACE; ELEVATIONS MUST BE FIELD VERIFIED PRIOR TO FABRICATION.
- DESIGN IS TO BE IN ACCORDANCE WITH THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, EIGHTH EDITION, 2017, AND THE LATEST LOUISIANA STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES.
- FINISH CAST-IN-PLACE CONCRETE IN ACCORDANCE WITH OTHER STANDARD PLANS AND 805.
- FORM PIPE OPENINGS ONLY AS REQUIRED FOR INTERSECTING PIPES. PROVIDE OPENING DIMENSIONS TO ACCOMMODATE PIPE DIAMETER AND SKEW ANGLE. PROVIDE OPENING DIMENSION THAT IS 1/2 INCH LARGER THAN OUTSIDE PIPE DIMENSION.
- RESILIENT CONNECTORS OR CONCRETE COLLARS ARE REQUIRED FOR CONNECTIONS OF ALL PIPE SIZES (EXCEPT YARD DRAIN PIPE AND UNDERDRAINS) WITH COST TO BE INCLUDED IN THE COST OF THE PRECAST STRUCTURE.



**JOINT DETAIL A  
PRECAST/PRECAST**

1. SEAL AND WRAP JOINT IN ACCORDANCE WITH 702.3.020

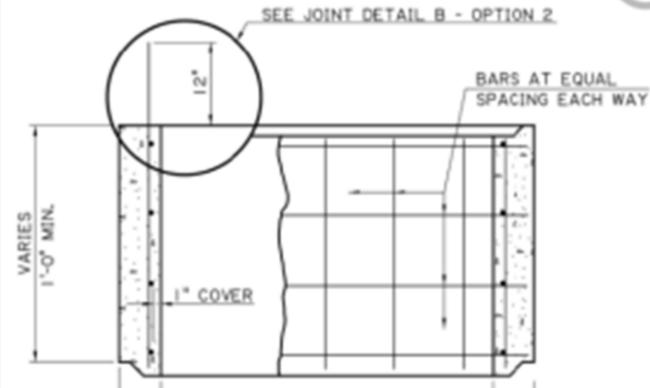
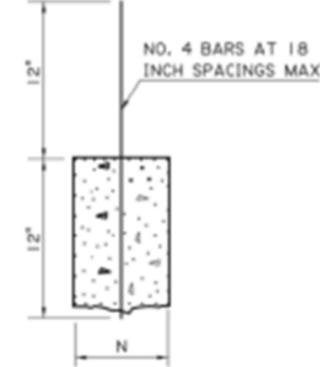
USE DIMENSIONS FROM JOINT DETAIL "A"



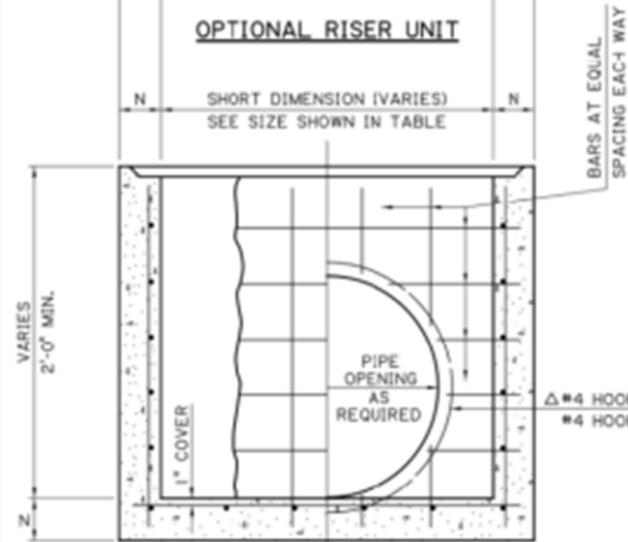
**JOINT DETAIL B - OPTION 1  
CAST-IN-PLACE/PRECAST**

**JOINT DETAIL B - OPTION 2  
CAST-IN-PLACE/PRECAST**

IN OPTIONS 1 AND 2, COAT PRECAST CONCRETE JOINT SURFACE AND A MAXIMUM OF 2 INCHES OF REINFORCING STEEL WITH TYPE V, GRADE 2 OR GRADE 3 EPOXY RESIN CONFORMING TO 1017. APPLY EPOXY RESIN AND PLACE CONCRETE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.



**OPTIONAL RISER UNIT**



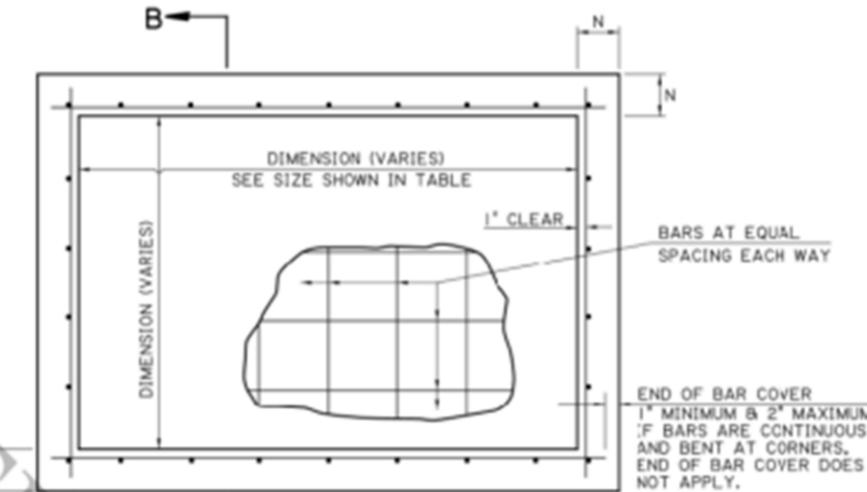
**BASE UNIT  
SECTION B-B**

MAXIMUM HEIGHT N	4' MAX. DIMENSION				6' MAX. DIMENSION				8' MAX. DIMENSION				10' MAX. DIMENSION			
	TYPICAL SIZES 3'X3' 4'X4'		TYPICAL SIZES 6'X4' 6'X6'		TYPICAL SIZES 8'X4' 8'X6' 8'X8'		TYPICAL SIZES 10'X4' 10'X6' 10'X8' 10'X10'									
FT.	IN.	BAR SIZE	SPAC. IN.	A <sub>s</sub> IN <sup>2</sup> /FT.	BAR SIZE	SPAC. IN.	A <sub>s</sub> IN <sup>2</sup> /FT.	BAR SIZE	SPAC. IN.	A <sub>s</sub> IN <sup>2</sup> /FT.	BAR SIZE	SPAC. IN.	A <sub>s</sub> IN <sup>2</sup> /FT.			
8	4	4	6	0.40	4	8	0.30	4	5.5	0.44	5	5.5	0.68			
8	6	4	9	0.27	4	6	0.40	5	5	0.74	5	3.25	1.14			
14	6	4	9	0.27	4	6	0.40	5	5	0.74	5	3.25	1.14			
20	6	4	7	0.34	4	4.5	0.53									

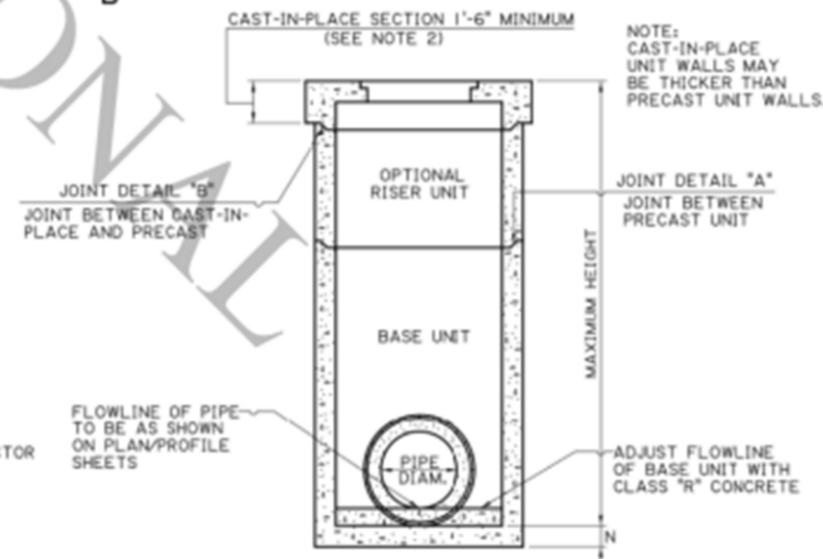
OTHER SIZES ARE ACCEPTABLE AS LONG AS THE DIMENSIONS DO NOT EXCEED THE MAXIMUM DIMENSIONS.  
 BAR SPACING APPLIES TO BOTH DIRECTIONS AND AT ALL LOCATIONS.  
 BAR SIZES AND SPACING MAY DIFFER FROM VALUES SHOWN, BUT THE AREA OF STEEL (A<sub>s</sub>) SHALL BE EQUAL TO OR GREATER THAN VALUE SHOWN, AND BAR SPACING SHALL NOT EXCEED 1.5 TIMES THE WALL THICKNESS. THE AREA OF STEEL (A<sub>s</sub>) MAY BE PROVIDED WITH STEEL DEFORMED WELDED WIRE FABRIC.



**PIPE CONNECTION DETAIL**



**PLAN**



**ELEVATION**

**TYPICAL COMPOSITE STRUCTURE**

Δ #4 HOOP MAY BE USED WHEN PIPE IS CIRCULAR AND CONNECTS TO THE CATCH BASIN AT +/- 90 (DEGREE) ANGLE.  
 #4 HOOP (ALT.) SHALL BE USED FOR NON-CIRCULAR (ELLIPTICAL) PIPES AND ALL PIPES THAT ENTER THE CATCH BASIN AT A SKEWED ANGLE.

PIPE OPENING SHORT AXIS +8"

Δ #4 HOOP (ALT.)

SHEET NUMBER		DATE	
DESIGN	CHECK	REVIEW	DATE
PRECAST CATCH BASINS AND MANHOLES			
PC-01			
CS-19			