**CITY OF BATON ROUGE**
**PARISH OF EAST BATON ROUGE**

April 24, 2025

**ADDENDUM NO. 1**

**TO:** **ALL BIDDERS**

**SUBJECT:** **JONES CREEK ROAD EXTENSION CLEARING AND EARTHWORK AIRLINE HWY. TO TIGER BEND RD.**

**CITY-PARISH PROJECT No. 12-CS-HC-0060A**

**BID DATE: TUESDAY, APRIL 29, 2025**

The following revisions shall be incorporated in and take precedence over any conflicting part of the original contract documents.

**FINAL PLANS**

**SHEET 1**

Replace Plan Sheet 2, entitled Summary of Estimated Quantities, with the attached Plan Sheet 2. Revised 4/22/2025. (Attachment A).

**SHEET 2a**

Replace Plan Sheet 2a, entitled Summary Tables, with the attached Plan Sheet 2a. Revised 4/22/2025. (Attachment A).

**SHEET 3a**

Replace Plan Sheet 3a, entitled Typical Section & Details, with the attached Plan Sheet 3a. Revised 4/22/2025. (Attachment A).

**STANDARD PLANS**

Add Plan Sheets 101 thru 136, various City-Parish Standard Plans, attached. (Attachment A)

**RESPONSES TO BIDDER QUESTIONS**

**QUESTION 1:**
Would we be able to burn the clearing and grubbing material on site or would we have to haul off all material offsite?
RESPONSE:
Burning will not be allowed.

**QUESTION 2:**
Sht 2a: The summary of drainage structures calls for 4 EA - 702-31, but the SOI shows these to be 702-20. Please clarify what is required.
RESPONSE:
702-20 are required. See plan revisions included in this addendum.

**QUESTION 3:**
Sht 2a: The earthwork table shows 141,526 CY of excavation. Can we use all of this material for

embankment, with the exception of the 1,454 CY of unsuitable material?
RESPONSE:
Excavated material is to be removed from the project in accordance with Specifications Section 203. Excavated material will not be incorporated into the project.

**QUESTION 4:**
Sht 2a: For the 150,940 CY of embankment, how much of this is surcharge?
RESPONSE:
This was not broken out as the intent is that the surcharge is the same material as the embankment.

**QUESTION 5:**
Please confirm that no material is to be cut and removed after clearing and grubbing is complete, with the exception of the designated unsuitable above.
RESPONSE:
Correct.

**QUESTION 6:**
Sht 3a: Note 6 calls for the removal of "High Fill Embankment". Is this to be paid under General Excavation?
RESPONSE:
Note 6 on sheet 3a has been revised as part of the plan revisions in this addendum.

**QUESTION 7:**
Sht 3a: Should the settlement period last longer than the anticipated 9 months, will the contractor be reimbursed for the additional surveying and time?
RESPONSE:
Refer to Specifications Section 203 and plans notes related to surcharge.

**QUESTION 8:**
Sht 3a: How many inches are anticipated for settlement?
RESPONSE:
Up to 6 inches.

**QUESTION 9:**
Sht 4 & 7: Access to the project is obstructed by existing ditches. Can a pay item be provided for storm drain pipe in these areas?
RESPONSE:
Note 9 on sheet 2 has been added as part of the plan revisions in this addendum.

**QUESTION 10:**
SP39: Section 203-13. Typically the Owner covers all testing. Please verify that the contractor is to provide testing separate from the Owner.
RESPONSE:
The cost of Quality Control is the responsibility of the contractor and will not be measured for payment.

**QUESTION 11:**
SP 125: Please verify that we are to provide weekly survey data for not just the settlement plates, but also cross sections of the project (at 25' OC) for the duration of the settlement period.
RESPONSE:
Correct.

**QUESTION 12:**
What is the budget for this project? We need this to determine the liquidated damages for the project since these damages are on a stated scale. Our bonding company is requiring us to furnish them both the budget and the liquidated damages cost per day.
RESPONSE:

The City-Parish does not provide a project budget. Liquidated damages will be assessed per Section 9-8.3.

**QUESTION 13:**
Can you please provide the locations of the soil borings?
RESPONSE:
Locations, in latitude/longitude format, are shown in the plans.

**QUESTIONS 14:**
Will header material be required in slopes within 500' of bridge or just under the road footprint?
RESPONSE:
See Note 2 on Sheet 14.

**QUESTION 15:**
After 9 months of settlement, is the removal of high fill embankment in this phase of the project?
Is that number captured in the excavation?
RESPONSE:
Note 6 on sheet 3a has been revised as part of the plan revisions in this addendum.

**QUESTION 16:**
Can a low water crossing be placed in Clay cut Bayou?
RESPONSE:
No.

**QUESTION 17:**
What is the dollar amount of the Engineer's Estimate for this project?
RESPONSE:
The City-Parish does not provide the engineer's estimate prior to opening bids.

**QUESTION 18:**
Will the Contractor be allowed to work extended work schedules, such as 7 days per week/12 hours per day?
RESPONSE:
Work shall be completed per Specifications Section 9.5 and comply with other appliable City Ordinances such as noise restrictions.

**QUESTION 19:**
If the Contractor elects to work more than 40 hours per week, weekends and/or holidays, will there be any inspection fees charged to the Contractor by the Engineer or the Owner? If so, please provide parameters and rates.
RESPONSE:
No additional fees are anticipated.

**QUESTION 20:**
Is there any indication, information, and/or belief, on the part of the Owner and/or Engineer, that any of the existing materials on this project scheduled for removal and/or demolition, including but not limited to, water, soils, metals, liquids, and/or debris that will be handled by the Contractor and/or its Employees, may be classified as hazardous, infectious, industrial, contaminated, radioactive, solid waste or any other type of controlled and/or regulated substance? If so, please explain and provide a copy of any supporting information to all Bidders to base their bids on. Please add any necessary unit price bid items to cover this work.
RESPONSE:
None required.

**QUESTION 21:**
Is it the Engineer and Owner's intent to have the Contractor use the excavated material for the embankment?

RESPONSE:
Excavated material is to be removed from the project in accordance with Section 203. Excavated material will not be incorporated into the project.

**QUESTION 22:**
In section 203-11 Plastic Soil Blanket, its states, “Areas requiring a plastic soil blanket shall be approved prior to placement of the plastic soil blanket”.
Please clarify the following:
Where is the Plastic Soil Blanket to be installed?
RESPONSE:
Plastic Soil Blankets shall be installed per Section 203-7(e).

**QUESTION 23:**
What are the parameters for the Engineer’s approval to use materials as the Plastic Soil Blanket?
RESPONSE:
Testing and inspection of materials shall meet the Quality Control and Quality Assurance requirements of Specification Sections 203-7(e) and 203-11.

**QUESTION 24:**
In the event that there is a surplus of excavated materials, will this material be required to be left onsite and if so, where? Or will it be disposed of offsite at the Contractor’s expense?
RESPONSE:
Excavated material is to be removed from the project in accordance with Section 203. Excavated material will not be incorporated into the project.
Excavated material shall become the property of the contractor.

**QUESTION 25:**
In the event that the existing excavated materials does not meet the Engineer’s approval for use as Embankment, how will the Contractor be paid to remove the wasted materials?
RESPONSE:
Excavated material will be paid under the planned General Excavation pay item.

**QUESTION 26:**
In the event that the Engineer orders the Excavated Materials wasted, how will the Contractor be paid for Imported Borrow Material? Please consider adding a bid item for Imported Borrow.
RESPONSE:
Imported Borrow Material will be paid under the planned Embankment pay item.

**QUESTION 27:**
With respect to the use of Settlement Plates – When and how often does the Engineer want settlement readings taken and computed to determine if additional fill is needed and/or additional compensation to the Contractor?
RESPONSE:
Settlement plates readings will be taken per Special Provision 9900014.

**QUESTION 28:**
Will mulching of the trees be allowed? If so, please clarify if removal of stumps will be required and will the Contractor be required to dispose of the mulch offsite?
RESPONSE:
Mulching will not be allowed.
Trees, stumps, and root balls (protruding vegetation) shall be removed, and any voids shall be backfilled (in lifts when void depth applicable) with specified material per Specifications Section 203.

**QUESTION 29:**
What is the solid bold line supposed to represent, i.e. proposed grade, existing grade?
RESPONSE:

The top of embankment.

**QUESTION 30:**
What is the hashed line supposed to represent, i.e. proposed grade, existing grade?
RESPONSE:
Existing grade.

**QUESTION 31:**
Between 82+20.00 and 89+00 there is an area marked with  , what is this supposed to represent?
RESPONSE:
This is for the excavation of the existing ditch bottom that is considered unsuitable material.

**QUESTION 32:**
One Sheet 36, the detail for Pre-Cast Box Culverts shows a 4" min working table. Is this also required for Cast-In-Place box culverts?
RESPONSE:
The 4" working table is required for precast RCBs that are larger than 6'x6' in accordance with Note 5 on Plan Sheet 36. Cast-in-Place RCBs were not intended to be constructed on this project; only the headwall and wingwall details from the included Cast-in-Place RCB standard plans were intended to be used for construction.

**QUESTION 33:**
With respect to Temporary Silt Fencing in connection with the SWPPP, please confirm that the Contractor will be permitted to use Erosion control socks as an approved equal substitution?
RESPONSE:
Substitution for this item will depend on specific applications, reviewed case-by-case, and at the discretion of the Engineer.

**QUESTION 34:**
Do you have an approximate start date for the Jones Creek Road Extension project?
RESPONSE:
The City has approximately 150 days to issue the Notice To Proceed.

**QUESTION 35:**
Could you please confirm the retainage amount that will be held on this project?
RESPONSE:
The retainage is expected to be 5%.

**QUESTION 36:**
Can you provide the engineers estimate or aprox. budget for the project please. just trying to get an idea for bonding purposes is it $2,000,000 or $10,000,000 if you can get me within a couple million it would be helpful thanks.
RESPONSE:
The City-Parish does not provide the engineer's estimate prior to opening bids.

**QUESTION 37:**
Could you also provide a detail or product for the fence/gate?
RESPONSE:
Fence/gate shall comply with Section 902, plans, and Standard Plans.

**UNIFORM CONSTRUCTION BID FORMS**

With reference to Page UCBF 1 of 4, the Bidder shall indicate receipt of this Addendum in the space provided. Failure to indicate receipt of this Addendum may be cause for the bid to be rejected.

For online www.centralbidding.com bidders: An acknowledgment of this addendum will be prompted by the Expedite bidding program prior to formally submitting the bid. Technical addendums may have been created on the Central Bidding website for any changes made due to errors of input of schedule of bid items. The technical addendums might not be numbered the same as paper copy addendums that DPW issues to contractors who have picked up plans directly from them. Contractor should be aware that the technical addendums must be acknowledged when submitting the bid.

**APPROVED:**

for

Daniel Rosenquist, P.E.
Chief Design & Construction Engineer

## SUMMARY OF ESTIMATED QUANTITIES

| ITEM NO. | DESCRIPTION | UNIT | QUANTITY |
|---|---|---|---|
| | | | |
| 2010200 | CLEARING AND GRUBBING | ACRE | 55.8 |
| 2020100 | REMOVAL OF STRUCTURES AND OBSTRUCTIONS | LUMP | 1 |
| 2020101 | REMOVAL OF STRUCTURE AND FOUNDATION (14866 TIGER BEND RD) | EACH | 2 |
| 2020102 | REMOVAL OF STRUCTURE AND FOUNDATION (7170 BARINGER RD) | EACH | 1 |
| 2020301 | REMOVAL OF CONCRETE REVETMENT | SY | 2,092 |
| 2020600 | REMOVAL OF CONCRETE WALKS AND DRIVES | SY | 1,668 |
| 2020902 | SAW CUT SURFACES - CONCRETE | LF | 86 |
| | | | |
| 2030100 | GENERAL EXCAVATION | CY | 141,526 |
| 2030200 | EMBANKMENT | CY | 150,940 |
| | | | |
| 6010100 | CLASS 6A4000 CONCRETE | CY | 61.77 |
| 6010500 | REINFORCING STEEL | LB | 5,910 |
| | | | |
| 7010115 | 15" STORM DRAIN PIPE | LF | 16 |
| 7010118 | 18" STORM DRAIN PIPE | LF | 8 |
| 7010242 | 42" REINFORCED CONCRETE PIPE | LF | 638 |
| 7010423 | 9' X 5' REINFORCED CONCRETE BOX CULVERT | LF | 140 |
| 7010431 | 10' X 8' REINFORCED CONCRETE BOX CULVERT | LF | 308 |
| 7020310 | RETICULINE GRATE INLET (CPS 702-15) (FRAME AND GRATE ONLY) | EACH | 1 |
| 7020311 | GRATE INLET (702-20) | EACH | 4 |
| 7040504 | 4" CAST-IN-PLACE CONCRETE REVETMENT | SY | 121.1 |
| 7040506 | 6" CAST-IN-PLACE CONCRETE REVETMENT | SY | 527.6 |
| 7050202 | 30-LB. RIPRAP | CY | 223.4 |
| 7050203 | 55-LB. RIPRAP | CY | 169.6 |
| | | | |
| 8028100 | PLUG AND ABANDON SEWER PIPE (CAP EACH END) | LUMP | 1 |
| 817003Q | 36" TRENCHED CASING INCLUDING CARRIER PIPE | LF | 214 |
| | | | |
| 9020105 | 5-FT. CHAIN LINK FENCE | LF | 2,628 |
| 9020303 | 3-FT. CHAIN LINK GATE, 5-FT. HEIGHT | EACH | 4 |
| | | | |
| 9030200 | TEMPORARY HAY BALES | EACH | 80 |
| 9030400 | TEMPORARY SEDIMENT CHECKDAMS (STONE) | EACH | 1 |
| 9030500 | TEMPORARY SILT FENCING | LF | 22,782 |
| 9030800 | SEED | LB | 309 |
| 9030900 | FERTILIZER | LB | 10,304 |
| 9031000 | WATER | MGAL | 249 |
| 9031300 | FIBER MULCH | SY | 49,872 |
| 9031400 | EROSION CONTROL MAT | SY | 128 |
| 9031600 | STORM WATER POLLUTION PREVENTION PLAN | LUMP | 1 |
| | | | |
| 9050100 | TEMPORARY SIGNS AND BARRICADES | LUMP | 1 |
| | | | |
| 9090100 | MOBILIZATION | LUMP | 1 |
| | | | |
| 9900001 | TEMPORARY STONE CONSTRUCTION ENTRANCE | EACH | 4 |
| 9900004 | PAYMENT ADJUSTMENT (FUELS AND ASPHALT CEMENTS) | DOLLAR | 56,900 |
| 9900014 | SETTLEMENT PLATE INSTALLATION AND MONITORING | EACH | 7 |
| | | | |

## GENERAL NOTES

1. CONTRACTOR SHALL PROVIDE, ERECT, AND MAINTAIN ALL NECESSARY BARRICADES, SUITABLE LIGHTS, AND DANGER SIGNALS AND SHALL TAKE ALL THE NECESSARY PRECAUTIONS FOR THE PROTECTION OF WORK AND SAFETY OF THE GENERAL PUBLIC. ALL SAFETY LIGHTING AND MARKING SHALL MEET OR EXCEED THE REQUIREMENTS AS DESCRIBED IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION.
2. ALL TREES, SHRUBS, ETC. LOCATED WITHIN THE REQ'D. R/W SHALL BE REMOVED. ALL COST SHALL BE INCLUDED IN THE ITEM BID FOR CLEARING AND GRUBBING (ITEM NO. 2010200). THE CONTRACTOR SHALL NOTIFY THE ADJACENT PROPERTY OWNER 14 DAYS PRIOR TO REMOVAL OF TREES, SHRUBS, ETC.
3. REMOVAL OF EXISTING FENCE AND REMOVAL OF CONCRETE BOX CULVERT/RETAINING WALL SHALL BE INCLUDED IN THE ITEM BID FOR REMOVAL OF STRUCTURES AND OBSTRUCTIONS (ITEM NO. 2020100).
4. ALL EXISTING DRIVES ARE TO REMAIN UNLESS SPECIFICALLY NOTED TO BE REMOVED.
5. FOR BEDDING AND BACKFILL DETAILS FOR STORM DRAIN PIPE AND RCB CULVERTS, SEE STD. PLAN 701-01.
6. STORM DRAIN PIPE SHALL BE REINFORCED CONCRETE PIPE (RCP) OR RIBBED POLYVINYL CHLORIDE PIPE (RPVCP).
7. ALL AREAS WITH PLACED EMBANKMENT AS WELL AS DITCHES SHALL RECEIVE SEEDING, FERTILIZATION, WATER AND MULCH PER SECTION 903-3.2.
8. EMBANKMENT IS AS PER SPECIAL PROVISION SECTION 203. HEADERS SHALL BE CONSTRUCTED PER SECTION 203-7(c). A 12" PLASTIC SOIL BLANKET SHALL BE CONSTRUCTED ON TOP OF FILL EMBANKMENT AS PER SECTION 203-7(e)(1).
9. CONTRACTOR TO PROVIDE POSITIVE DRAINAGE THROUGHOUT CONSTRUCTION. ANY TEMPORARY DRAINAGE PIPE OR STRUCTURES TO BE PROVIDED AT NO DIRECT PAY.

STATE OF LOUISIANA
ALEXANDER D. FARR
License No. 40405
PROFESSIONAL ENGINEER
IN
ENGINEERING
04-22-2025

| NO. | DATE | REVISION DESCRIPTION | BY |
|---|---|---|---|
| 1 | 4/22/25 | REVISED TO ADD NOTE 9 | ADF |

DESIGNED FARR
CHECKED AUCOIN
DETAILED CORTEZ
CHECKED AUCOIN
DATE JAN. 2025
SHEET 1 OF 1

PARISH EAST BATON ROUGE
C.P. PROJECT 12-CS-HC-0060A
STATE PROJECT

SHEET NUMBER 2

SUMMARY OF ESTIMATED QUANTITIES
JONES CREEK RD (AIRLINE-TIGER BEND)

CITY OF BATON ROUGE

WAGGONER

FINAL PLANS

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## EARTHWORK

| STATION | STATION | GENERAL EXCAVATION | EMBANKMENT |
|---|---|---|---|
| | | CUYD | CUYD |
| 60+95.0 | 81+00.0 | 979 | 65,621 |
| 81+00.0 | 94+50.0 | 18,927 * | 81,361 |
| 200+56.0 | 203+55.0 | 0 | 3,958 |
| DETENTION POND | | 121,620 | 0 |
| **TOTAL** | | **141,526** | **150,940** |

* - INCLUDES 1454 CU.YDS. OF UNSUITABLE MATERIAL

## SAWCUTTING

| STATION | DESCRIPTION | SIDE C/L | LENGTH |
|---|---|---|---|
| | | | FEET |
| 203+27 | PROFIT REVETMENT | RT/LT | 80 |
| 204+64 | SIDEWALK - 7170 BARINGER RD | RT/LT | 6 |
| **TOTAL** | | | **86** |

## FENCING

| STATION | STATION | SIDE OF C/L | DESCRIPTION | 5-FT. CHAIN LINK FENCE | 3-FT. CHAIN LINK GATE, 5-FT. HEIGHT |
|---|---|---|---|---|---|
| | | | | LNFT | EACH |
| 64+84 | 79+80 | LT | DETENTION POND / KIMBLE PROPERTY | 2157 | |
| 90+99 | 92+29 | RT | TIGER BEND @ CONCRETE CANAL LINING | 300 | |
| 203+09 | 203+45 | LT | PROFIT @ RCB / CONC. CANAL | 95 | |
| 203+10 | 203+46 | RT | PROFIT @ RCB / CONC. CANAL | 76 | |
| 203+10 | | LT/RT | PROFIT @ RCB / CONC. CANAL | | 2 |
| 203+46 | | LT/RT | PROFIT @ RCB / CONC. CANAL | | 2 |
| **TOTAL** | | | | **2,628** | **4** |

## REVETMENT

| STATION | STATION | DESCRIPTION | REMOVAL OF CONCRETE REVETMENT | 4" C.I.P. CONCRETE REVETMENT | 6" C.I.P. CONCRETE REVETMENT | 30-LB RIP RAP | 55-LB RIP RAP |
|---|---|---|---|---|---|---|---|
| | | | SQYD | SQYD | SQYD | CUYD | CUYD |
| 65+60 | | DITCH OUTFALL @ POND | | | | 24.5 | |
| 73+80 | | STRUCTURE 799a POND INLET | | | | 4.5 | |
| 78+37 | 80+44 | LEFT TOE SLOPE REVETMENT | | | | 194.4 | |
| | | | | | | | |
| 90+30 | 93+64 | EXISTING CONC. CANAL LINING | 1,670 | | | | |
| | | | | | | | |
| 90+99 | 91+49 | RIP RAP CANAL TRANSITION | | | | | 169.6 |
| 91+49 | 92+30 | CONCRETE CANAL LINING | | 93.8 | 423.1 | | |
| | | | | | | | |
| 203+28 | | EXISTING CONC. CANAL LINING | 422 | | | | |
| 203+28 | | CONCRETE CANAL LINING TRANSITION (LT & RT) | | 27.3 | 104.5 | | |
| **TOTAL** | | | **2,092** | **121.1** | **527.6** | **223.4** | **169.6** |

## SUMMARY OF DRAINAGE STRUCTURES

| | STRUCTURE NUMBER | STATION | SIDE OF C/L | DESCRIPTION | PLAN | TYPE | CONCRETE JUNCTION BOX | STORM DRAIN PIPE (TYPE 3 JTS.) | | | RETICULINE GRATE INLET (FRAME AND GRATE ONLY) | RCB | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | 702-20 | 15" | 18" | 42" | | 10' X 8' | 9' X 5' | CONCRETE | REBAR |
| | | | | | | | EACH | LNFT | LNFT | LNFT | EACH | LNFT | LNFT | CUYD | LB |
| | 799a | 73+77 | LT | POND INLET STRUCTURE | | | | | | | 1 | | | 13.15 | 2,194 |
| | 799 | 74+64 | LT | 42" X 172' STORM DRAIN PIPE | | RCP | | | | 172 | | | | | |
| | 798 | 75+50 | LT | CONCRETE JUNCTION BOX | | JB | 1 | | | | | | | | |
| Δ | 797 | 76+14 | LT | 42" X 150' STORM DRAIN PIPE | | RCP | | | | 150 | | | | | |
| | 242 | 76+78 | LT | CONCRETE JUNCTION BOX | | JB | 1 | | | | | | | | |
| Δ | 237 | 76+72 | LT | 18" X 8' STORM DRAIN PIPE | | SDP | | | 8 | | | | | | |
| Δ | 239 | 76+84 | LT | 15" X 8' STORM DRAIN PIPE | | SDP | | 8 | | | | | | | |
| | 401 | 92+99 | RT | (2) 10' X 8' REINFORCED CONCRETE BOX CULVERT EXT. WITH HEADWALL | | RCB | | | | | | 308 | | 22.20 | 1,536 |
| Δ | 243 | 200+66 | CL | 42" X 174' STORM DRAIN PIPE | | RCP | | | | 174 | | | | | |
| | 244 | 201+55 | LT | CONCRETE JUNCTION BOX | | JB | 1 | | | | | | | | |
| | 245 | 202+17 | LT | 42" X 96' STORM DRAIN PIPE | | RCP | | | | 96 | | | | | |
| | 705 | 202+74 | LT | CONCRETE JUNCTION BOX | | JB | 1 | | | | | | | | |
| Δ | 703 | 202+74 | LT | 15" X 8' STORM DRAIN PIPE | | SDP | | 8 | | | | | | | |
| | 706 | 202+98 | LT | 42" X 46' STORM DRAIN PIPE | | RCP | | | | 46 | | | | | |
| | 700 | 203+28 | CL | (2) 9' X 5' REINFORCED CONCRETE BOX CULVERTS WITH HEADWALL | | RCB | | | | | | | 140 | 26.42 | 2,180 |
| | **PROJECT TOTAL** | | | | | | **4** | **16** | **8** | **638** | **1** | **308** | **140** | **61.77** | **5,910** |

Δ - BACKFILL MATERIAL TO BE BACKFILL SAND FOR ENTIRE LENGTH.

## REMOVAL OF WALKS AND DRIVES

| DESCRIPTION | AREA | REMOVAL OF CONCRETE WALKS AND DRIVES |
|---|---|---|
| | SQFT | SQYD |
| DRIVE - 14866 TIGER BEND RD | 13397 | 1489 |
| WALK - 7170 BARINGER RD. | 308 | 34 |
| DRIVE - 7170 BARINGER RD. | 1307 | 145 |
| **TOTAL** | | **1668** |

STATE OF LOUISIANA
ALEXANDER D. FARR
License No. 40426
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING
04-22-2025

FINAL PLANS

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SHEET NUMBER 2a

PARISH EAST BATON ROUGE
C.P. PROJECT 12-CS-HC-0060A
STATE PROJECT

DESIGNED AUCOIN
CHECKED FARR
DETAILED CORTEZ
CHECKED FARR
DATE JAN. 2025
SHEET 1 OF 1

| NO. | DATE | REVISION DESCRIPTION | BY |
|---|---|---|---|
| 1 | 4/22/25 | REVISED SUMMARY OF DRAIN. STRUCTURES | ADF |

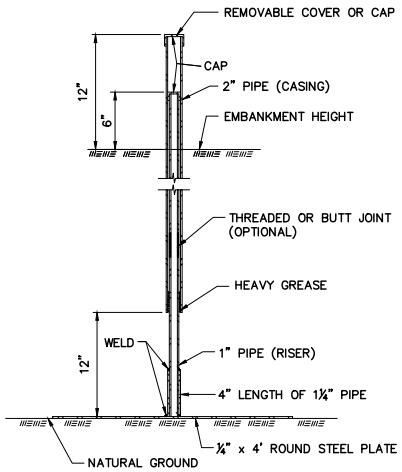
SUMMARY TABLES

JONES CREEK RD (AIRLINE-TIGER BEND)

MOVE BR

BR CITY OF BATON ROUGE

WIGGINS




DETAIL OF SETTLEMENT PLATE

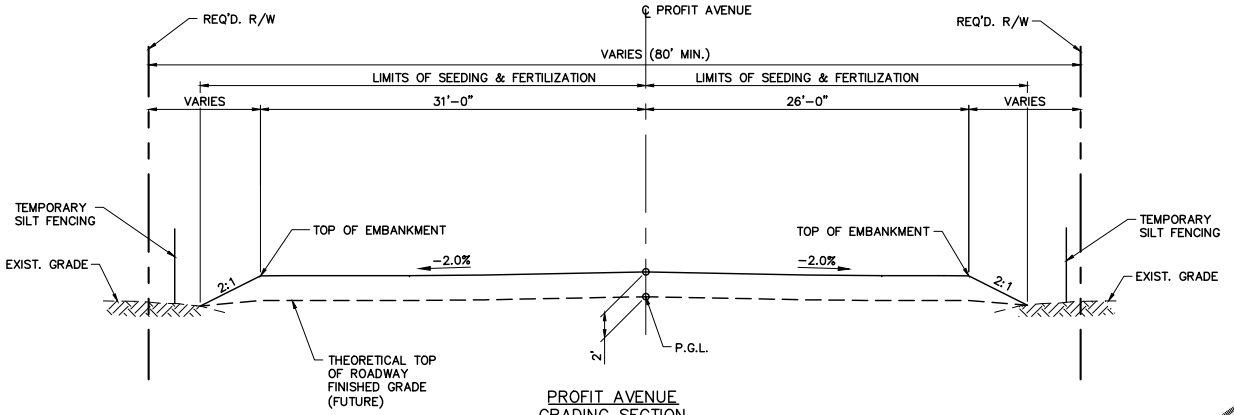
SETTLEMENT PLATE NOTES:

1. SETTLEMENT PLATES SHALL BE PLACED AS SHOWN IN THE PLANS OR AS DIRECTED BY THE PROJECT ENGINEER.
2. SETTLEMENT PLATES SHALL BE INSTALLED IMMEDIATELY PRIOR TO PLACEMENT OF FIRST LIFT OF EMBANKMENT.
3. STAKES AND FLAGGING SHALL BE PLACED AROUND THE SETTLEMENT PLATE ROD SO THAT IT IS CLEARLY VISIBLE.
4. BEGINNING ONCE THE EMBANKMENT FILL HAS ACHIEVED ROUGH GRADE SURFACE ELEVATIONS, THE SURFACE ELEVATIONS SHALL BE MEASURED AT OR NEXT TO THE SETTLEMENT PLATE LOCATIONS AND MEASURED AT THE SAME TIME AS THE SETTLEMENT PLATE/RISER ELEVATIONS ARE MEASURED.
5. READING SETTLEMENT PLATES WILL BE THE RESPONSIBILITY OF THE CONTRACTOR, AS PER THE SPECIAL PROVISIONS, 9900014.
6. EMBANKMENT SHALL REMAIN IN PLACE FOR A MINIMUM OF 9 MONTHS UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
7. SETTLEMENT PLATE INSTALLATION AND MONITORING SHALL BE PAID FOR UNDER ITEM 9900014.

| SETTLEMENT PLATE LOCATIONS JONES CREEK RD. | | |
|---|---|---|
| STATION | LOCATION | NUMBER OF PLATES |
| 73+50 | ON C.L. | 1 |
| 78+50 | 20' RT. | 1 |
| 79+60 | ON C.L. | 1 |
| 83+00 | 28' RT. | 1 |
| 86+00 | 10' LT. | 1 |
| 89+00 | 8' LT. | 1 |
| 92+00 | 8' LT. | 1 |
| TOTAL | | 7 |

TYPICAL SECTION NOTES:

1. CONTRACTOR IS TO MAINTAIN DRAINAGE AWAY FROM THE GRADING SECTION.




PROFIT AVENUE
GRADING SECTION

SCALE: 1" = 5'
STA. 200+56.50 TO 203+55

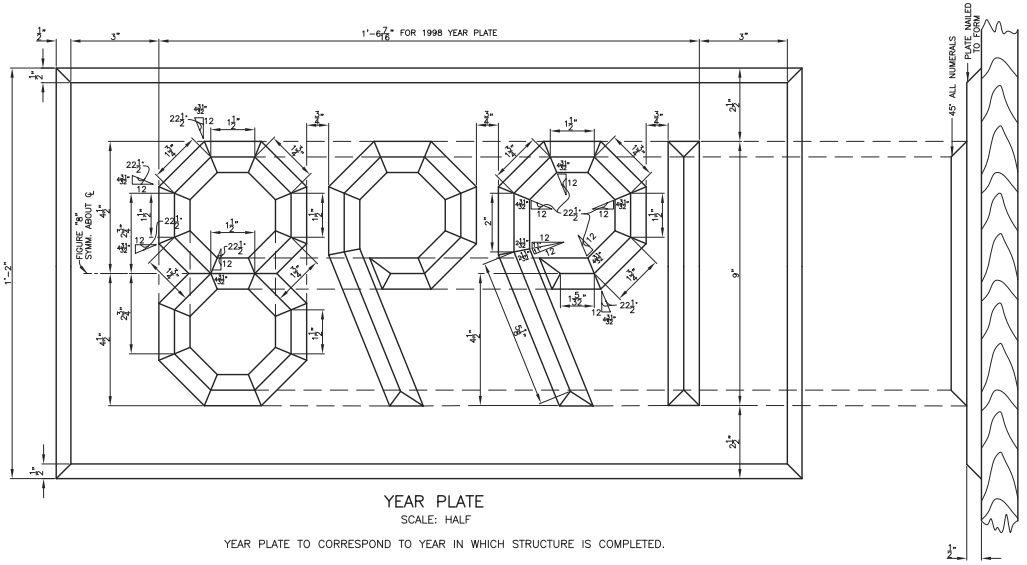
STATE OF LOUISIANA
ROBERT J. LEAR, JR.
License No. 29394
PROFESSIONAL ENGINEER
4/22/2025

SHEET NUMBER 3a
PARISH EAST BATON ROUGE
C.P. PROJECT 12-CS-HC-0060A
STATE PROJECT
DESIGNED FARR
CHECKED LEAR
DETAILED GIBBS
CHECKED BOURG
DATE JAN. 2025
SHEET 2 OF 2

| NO. | DATE | REVISION DESCRIPTION | BY |
|---|---|---|---|
| 6 | 4/22/25 | REVISED NOTE 6 | R.JL |

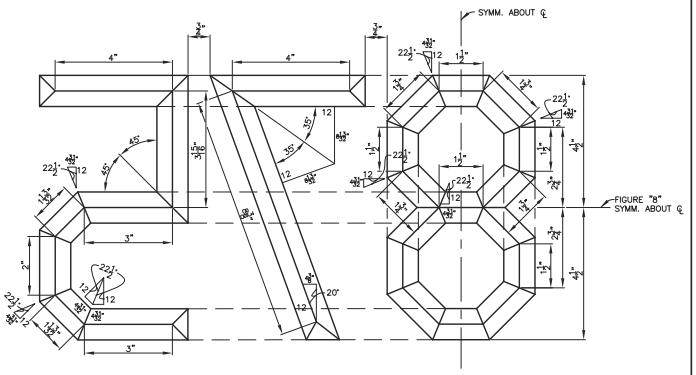
TYPICAL SECTION & DETAILS
JONES CREEK RD (AIRLINE-TIGER BEND)

| PROJECT NO. | SHEET |
|---|---|
| | 101 |

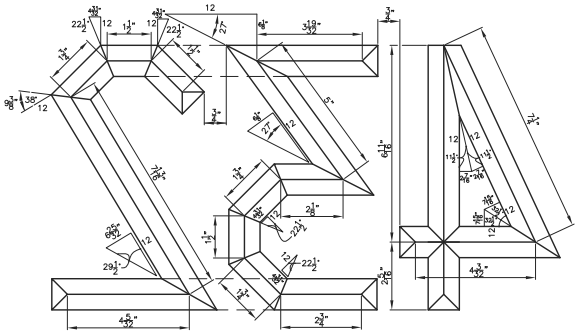



YEAR PLATE
SCALE: HALF

YEAR PLATE TO CORRESPOND TO YEAR IN WHICH STRUCTURE IS COMPLETED.




NOTE:
FIGURE "6" TO BE "9" INVERTED.
FIGURE "0" TO BE MADE AS DASHED LINES INDICATED ON DETAIL OF FIGURE "8".



YEAR PLATE NUMERALS
SCALE: HALF

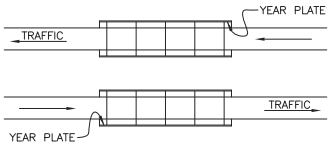
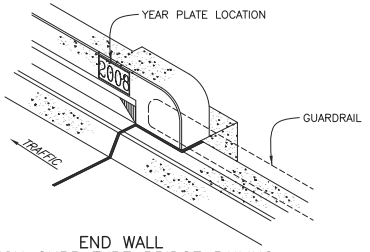
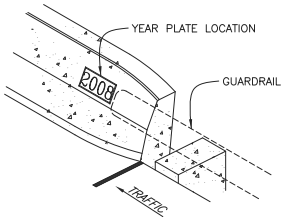



PLATE LOCATIONS FOR
TWIN BRIDGE SITES

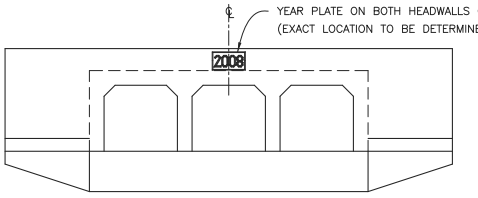
NOTE:
YEAR PLATE REQUIRED AT BOTH ENDS OF TWO-WAY TRAFFIC BRIDGE ON ONCOMING SIDE.




END WALL
BRUSH CURB TYPE BRIDGE RAILING




END WALL
BARRIER TYPE BRIDGE RAILING




CULVERT
ELEVATION

SKETCHES SHOWING LOCATION OF YEAR PLATE ON VARIOUS CONCRETE STRUCTURES

FULL SIZE CROSS SECTION OF 3/4" CHAMFER STRIP TO BE USED IN CONSTRUCTING ALL LETTERS FOR YEAR PLATE.

YEAR PLATE MATERIAL
SCALE: FULL

STATE OF LOUISIANA
THOMAS A. STEPHENS
License No. 19437
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING
2/12/2013

| DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|
| | | |

| STANDARD PLAN NO. 601–04 | DATED FEBRUARY 18, 2008 | SHEET NO. 1 OF 1 |
|---|---|---|

YEAR PLATES
FOR CONCRETE STRUCTURES

ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS
CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE

| DESIGNED | DRAWN | CHECKED | APPROVED |
|---|---|---|---|
| R. ELLIS | G. VANNICE | R. ELLIS | T. STEPHENS |

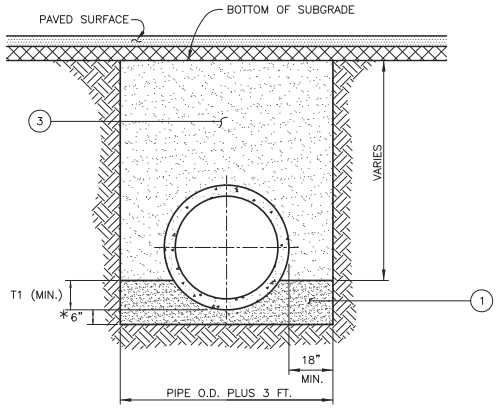
601–04

ENGINEERING AGAINST STUDY FORM G.V.

| PROJECT NO. | SHEET |
|---|---|
| | 102 |

## RIGID PIPE

(REINFORCED CONCRETE)

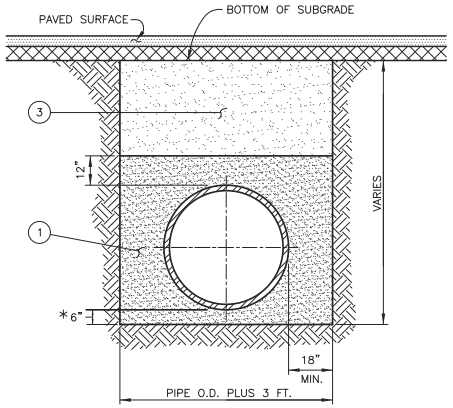



PIPE UNDER OR WITHIN 5 FEET OF STREETS AND PAVED SURFACES.

SCALE: 1/2"=1'-0"

## FLEXIBLE PIPE

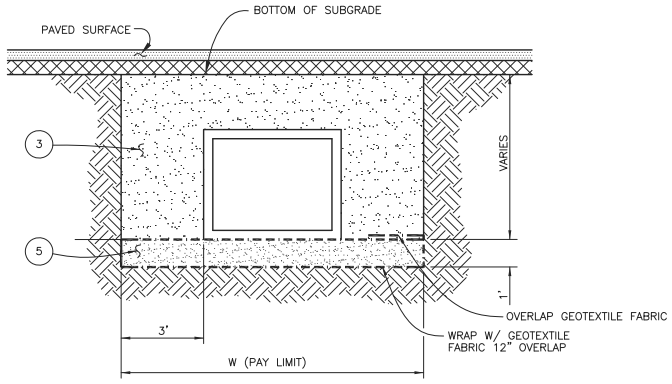
(CORRUGATED METAL, POLYVINYL CHLORIDE, AND POLYETHYLENE)




PIPE UNDER OR WITHIN 5 FEET OF STREETS AND PAVED SURFACES.

SCALE: 1/2"=1'-0"

## TYPICAL BEDDING DETAIL FOR REINFORCED CONCRETE BOX CULVERT

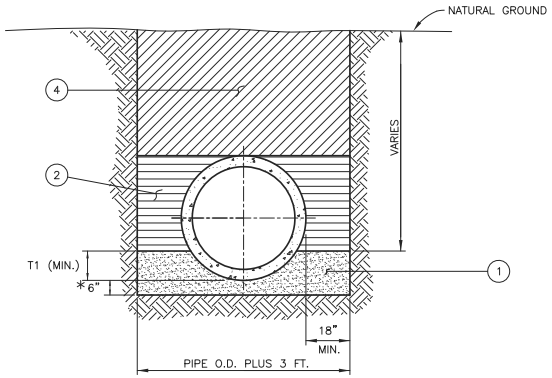



SCALE: 1/2"=1'-0"

* BEDDING UNDER PIPE SHALL BE 6" UNLESS OTHERWISE SPECIFIED IN THE PLANS OR SPECIAL PROVISIONS.

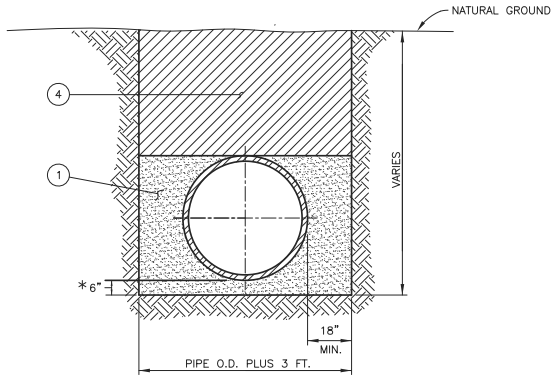
## GENERAL NOTES

ALL MATERIALS AND WORK SHALL CONFORM TO THE LATEST EDITION OF THE CITY OF BATON ROUGE AND PARISH OF EAST BATON ROUGE—"STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION".




OPEN GROUND OUTSIDE LIMITS OF STREETS AND PAVED SURFACES

SCALE: 1/2"=1'-0"




OPEN GROUND OUTSIDE LIMITS OF STREETS AND PAVED SURFACES

SCALE: 1/2"=1'-0"

## LEGEND

1. BEDDING MATERIAL COMPACTED TO 95% STANDARD PROCTOR DENSITY. (NO DIRECT PAY).
2. BACKFILL MATERIAL (QUALITY EXCAVATED OR SELECT MATERIAL OR SAND). COMPACTED TO A DENSITY AT LEAST EQUAL TO SURROUNDING UNDISTURBED SOIL. (NO DIRECT PAY).
3. BACKFILL MATERIAL (BACKFILL SAND), COMPACTED TO 95% STANDARD PROCTOR DENSITY. (NO DIRECT PAY).
4. BACKFILL MATERIAL (QUALITY EXCAVATED OR SELECT MATERIAL). COMPACTED TO A DENSITY AT LEAST EQUAL TO THE SURROUNDING UNDISTURBED SOIL. (NO DIRECT PAY).
5. 67 LIMESTONE W/ GEOTEXTILE FABRIC.

## PIPE BEDDING SCHEDULE

(RIGID PIPE)

| PIPE SIZE | T1 (MIN.) |
|---|---|
| 12"-30" | 6" |
| 36"-60" | 12" |
| 66"-96" | 18" |

STATE OF LOUISIANA
THOMAS A. STEPHENS
License No. 19417
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING
3/12/2013

| STANDARD PLAN NO. | DATED | SHEET NO. |
|---|---|---|
| 701-01 | February 8, 2008 | 1 OF 1 |

# STANDARD BEDDING AND BACKFILL DETAILS FOR STORM DRAINAGE CONDUIT

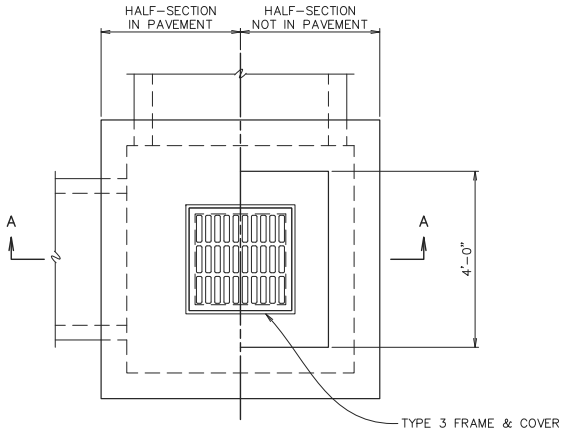
ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS
CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE

| DESIGNED | DRAWN | CHECKED | APPROVED |
|---|---|---|---|
| R. ELLIS | G. VANNICE | R. ELLIS | T. STEPHENS |

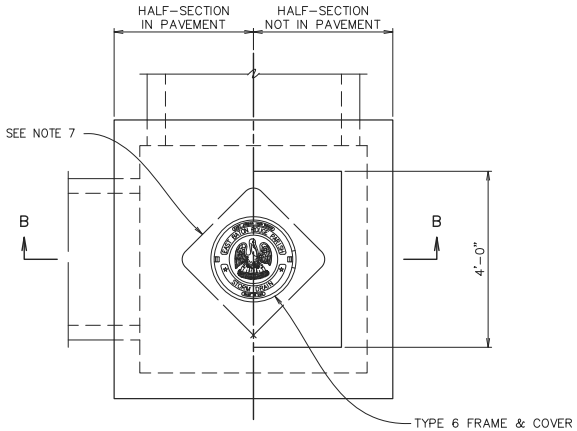
| DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|
| | | |

701-01

| PROJECT NO. | SHEET |
|---|---|
| | 103 |




TOP VIEW
TYPE 3
SCALE: 3/4"=1'–0"




TOP VIEW
TYPE 6
SCALE: 3/4"=1'–0"

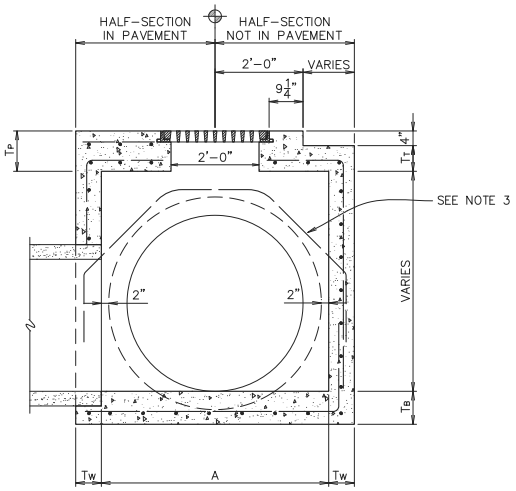
| PIPE SIZE | | DIMENSION |
|---|---|---|
| ROUND PIPE | ARCH PIPE (ROUND EQUIV.) | A * |
| 15" | – | 2'–10" |
| 18" | 15" | 2'–10" |
| 24" | 18" | 2'–10" |
| 30" | 24" | 3'–5" |
| 36" | 30" | 4'–0" |
| 42" | 36" | 4'–8" |
| 48" | – | 5'–2" |
| 54" | 42" | 5'–9" |
| 60" | 48" | 6'–4" |
| – | 54" | 6'–8" |
| 72" | 60" | 7'–6" |
| 84" | 72" | 8'–10" |

* INCREASE AS REQUIRED TO PROVIDE MINIMUM TOP WIDTH OF 4' SQUARE.

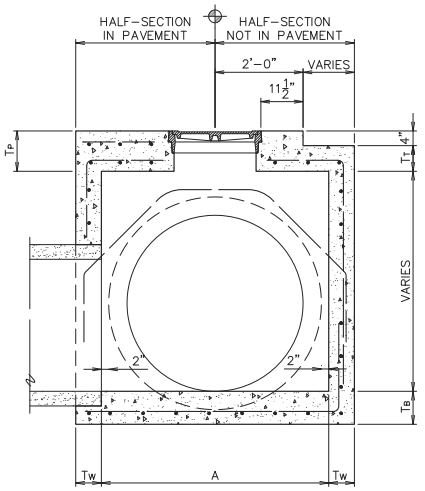
NOTE:

1. SEE STANDARD PLAN 702–99 FOR FRAME AND COVER DETAILS. TYPE 3 OR TYPE 6 FRAME AND COVER REQUIRED.
2. PRECAST CONCRETE STRUCTURES CONFORMING TO STANDARD PLAN 702–97 MAY BE FURNISHED.
3. DIAGONAL REINFORCEMENT REQUIRED FOR PIPE LARGER THAN 36". BARS SHALL LAP TO A FULL LENGTH VERTICAL BAR W/18d LAP LENGTH.
4. DIMENSION A MAY BE VARIED FOR SKEWED PIPE.
5. SEE STANDARD PLAN 702–96 FOR THICKNESS, REINFORCING STEEL, AND OTHER STRUCTURAL DETAILS.
6. SEE STANDARD PLAN 702–98 FOR FOR CURB TRANSITION DETAILS.
7. DIAGONAL REINFORCEMENT REQUIRED. USE SAME REBAR SIZE AS TOP REINFORCING. PLACE AS BOTTOM STEEL IF LOCATED IN PAVEMENT.

⊕ PLAN STATION CALL–OUT




SECTION A–A
TYPE 3
SCALE: 3/4"=1'–0"




SECTION B–B
TYPE 6
SCALE: 3/4"=1'–0"


| STANDARD PLAN No. | DATED | SHT. No. |
|---|---|---|
| 702–20 | DEC. 6, 2010 | 1 OF 1 |

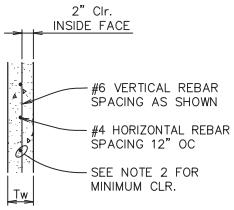
CAST IRON GRATE INLET AND JUNCTION BOX

| DATE | DESCRIPTION REVISION | BY |
|---|---|---|
| | | |

ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS
CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE

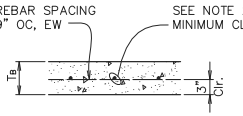
| DESIGNED | DRAWN | CHECKED | APPROVED |
|---|---|---|---|
| GLP | GLP | GLP | T. STEPHENS |

| PROJECT NO. | SHEET |
|---|---|
| | 104 |




## STANDARD WALL DETAIL

SCALE: N.T.S.




## BOTTOM SLAB DETAIL

SCALE: N.T.S.

### WALL DIMENSIONS

| WALL HEIGHT (FT) | "Tw" WALL THICKNESS (IN) | VERT. REBAR SPACING (IN) |
|---|---|---|
| 0'–4' | 6.0" | 12" |
| 4'–8' | 6.0" | 9" |
| 8'–10' | 7.0" | 9" |
| 10'–12' | 7.0" | 6" |
| 12'–16' | 8.0" | 6" |
| 16'–20' | 9.0" | 6" |

### BOTTOM SLAB DIMENSIONS

| "TB" SLAB THICKNESS (IN) | "A" OR "B" MAXIMUM WIDTH OF OPENING INSIDE STRUCTURE (FT) | MAXIMUM DEPTH STRUCTURE (FT) | REBAR REQ'D |
|---|---|---|---|
| 6.0" | 4' | 8' | #4 |
| 7.0" | 6' | 12' | #5 |
| 8.0" | 8' | 16' | #5 |
| 9.0" | 10' | 20' | #6 |

BOTTOM SLAB THICKNESS TO MEET MINIMUM CRITERIA SHOWN FOR OPENING WIDTH AND STRUCTURE DEPTH.

### PAVEMENT SLAB DIMENSIONS

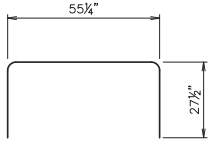
| "A" INSIDE LENGTH (FT) | "B" INSIDE WIDTH (FT) | "TP" SLAB THICKNESS (IN) | REBAR REQ'D * | INTERMEDIATE SUPPORT BEAM REQ'D (Y OR N) |
|---|---|---|---|---|
| ≤10' | ≤ 4' | 7.0" | #5 | N |
| ≤10' | 4'–6' | 8.0" | #5 | N |
| ≤10' | 6'–8' | 10.0" | #6 | N |
| 6'–8' | 6'–8' | 7.0" | #5 | Y |
| 8'–10' | 8'–10' | 8.0" | #5 | Y |

* 9" OC, EW, TB

### REBAR MINIMUM LAP AND DEVELOPMENT LENGTHS

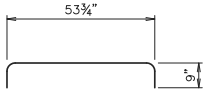
| REBAR SIZE | LAP LENGTH (IN) | DEVELOPMENT LENGTH (IN) |
|---|---|---|
| #4 | 16" | 12" |
| #5 | 20" | 16" |
| #6 | 24" | 19" |

SHOP DRAWING DETAILING REQ'D TO PROVIDE MINIMUM LENGTHS OR ELSE USE STANDARD HOOKS



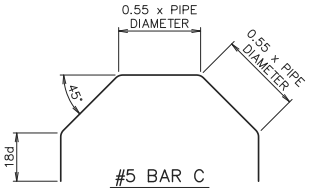

## #5 BAR A

SCALE: N.T.S.
2 REQ'D PER FRAME



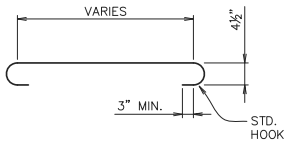

## #5 BAR B

SCALE: N.T.S.
1 REQ'D PER FRAME



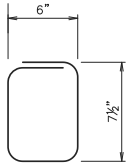

## #5 BAR C

SCALE: N.T.S.
1 REQ'D PER PIPE ENTRANCE ≥ 36"ø




## #5 BAR D

SCALE: N.T.S.
2 REQ'D PER EACH INTERMEDIATE BEAM




## #3 BAR J

SCALE: N.T.S.
REQ'D STIRRUPS @ 4" OC

### ABBREVIATIONS:

OC – ON CENTER
EW – EACH WAY
TB – TOP & BOTTOM

### NOTE:

1. ALL REINFORCING STEEL TO BE DEFORMED GRADE 60 MINIMUM REBAR. STEEL BAR SIZE & SPACING MAY BE ADJUSTED AS LONG AS AREA OF STEEL IS MAINTAINED PER FOOT.
2. MINIMUM CONCRETE COVER FOR REBAR STEEL IS TO BE 3" FOR CONCRETE FACES CAST AGAINST EARTH, 2.5" FOR FACES PERMANENTLY EXPOSED TO EARTH AND 2" FOR ALL OTHERS.
3. CONCRETE COMPRESSIVE STRENGTH FOR CAST–IN–PLACE STRUCTURES TO BE 4000 PSI AT 28 DAYS MINIMUM.
4. SEE SHEET 702–99 FOR FRAME AND COVER DETAILS.
5. SLABS MAY BE PRECAST AND DOWELED INTO WALL SECTIONS. (SEE STD. PLAN 702–97)

A=LENGTH INSIDE OPENING MEASURED PARALLEL TO CURB
B=WIDTH INSIDE OPENING MEASURED PERPENDICULAR TO CURB

### TOP SLAB DIMENSIONS

| "A" INSIDE LENGTH (FT) | "B" INSIDE WIDTH (FT) | "TT" SLAB THICKNESS (IN) | * REBAR REQ'D |
|---|---|---|---|
| ≤ 4' | ≤ 4' | 6.0" | #4 |
| 4'–6' | 4'–6' | 6.0" | #5 |
| 6'–8' | 6'–8' | 6.0" | #6 |
| 8'–20' | 8'–10' | 7.0" | #6 |
| | | | |

* 9" OC, EW, SET 2" CLR. FROM SLAB BOTTOM

### MIDDLE SLAB UNDER PAVEMENT DIMENSIONS

| "A" INSIDE LENGTH (FT) | "B" INSIDE WIDTH (FT) | "TMP" SLAB THICKNESS (IN) | * REBAR REQ'D |
|---|---|---|---|
| ≤20' | ≤ 4' | 7.0" | #4 |
| ≤20' | 4'–6' | 7.0" | #5 |
| ≤20' | 6'–8' | 8.5" | #6 |
| ≤20' | 8'–10' | 10.0" | #6 |
| | | | |

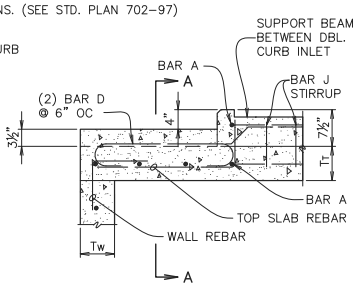
* 9" OC, EW, SET 2" CLR. FROM SLAB BOTTOM

### MIDDLE SLAB OUTSIDE PAVEMENT DIMENSIONS

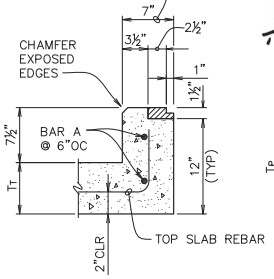
| "A" INSIDE LENGTH (FT) | "B" INSIDE WIDTH (FT) | "TM" SLAB THICKNESS (IN) | * REBAR REQ'D |
|---|---|---|---|
| ≤20' | ≤ 4' | 7.0" | #4 |
| ≤20' | 4'–6' | 7.0" | #5 |
| ≤20' | 6'–8' | 7.0" | #6 |
| ≤20' | 8'–10' | 8.0" | #6 |
| | | | |

* 9" OC, EW, SET 2" CLR. FROM SLAB BOTTOM

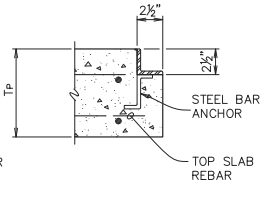
LEDGE WIDTH MAY BE EXTENDED TO MAXIMUM WIDTH OF 1'–2" FOR SMALLER PIPE STRUCTURES TO SIMPLIFY CONSTRUCTION FRAMING OF TOP SLAB.



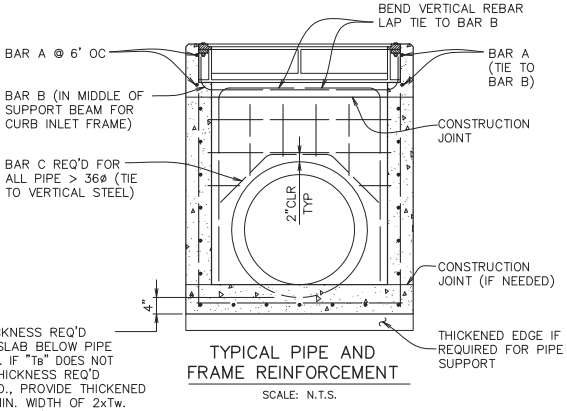

TOP SLAB INTERMEDIATE SUPPORT BEAM FOR DOUBLE CURB INLET
SCALE: N.T.S.




TYPE 1 FRAME SUPPORT DETAIL
SCALE: N.T.S.



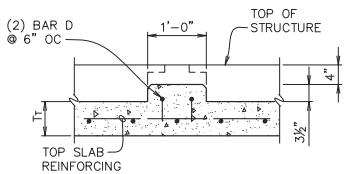

TYPE 2 FRAME IN PAVEMENT SUPPORT DETAIL
SCALE: N.T.S.




4" MIN. THICKNESS REQ'D IN BOTTOM SLAB BELOW PIPE OUTSIDE WALL. IF "TB" DOES NOT MEET MIN. THICKNESS REQ'D FOR PIPE O.D., PROVIDE THICKENED EDGE WITH MIN. WIDTH OF 2xTw. REINFORCE AS REQ'D. FOR BASE SLAB.

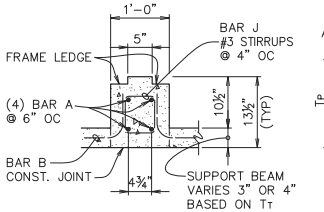
## TYPICAL PIPE AND FRAME REINFORCEMENT

SCALE: N.T.S.

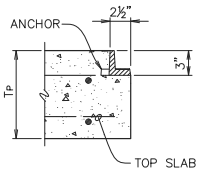



## SECTION A–A

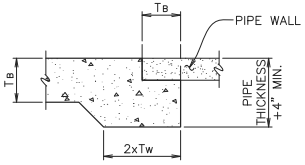
TOP SLAB INTERMEDIATE SUPPORT BEAM FOR DOUBLE CURB INLET
SCALE: N.T.S.




TYPICAL SUPPORT BEAM BETWEEN DOUBLE CURB INLETS
SCALE: N.T.S.




TYPE 3 FRAME IN PAVEMENT SUPPORT DETAIL
SCALE: N.T.S.




THICKENED EDGE FOR PIPE SUPPORT
SCALE: N.T.S.

| DATE | DESCRIPTION REVISION | BY |
|---|---|---|
| | | |

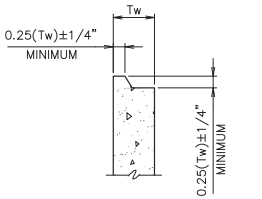
| STANDARD PLAN No. | DATED | SHT. No. |
|---|---|---|
| 702–96 | DEC. 6, 2010 | 1 OF 1 |

# CAST–IN–PLACE DRAINAGE STRUCTURES (STRUCTURAL DETAILS)

ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS
CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE

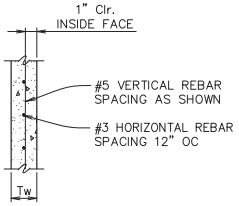
| DESIGNED | DRAWN | CHECKED | APPROVED |
|---|---|---|---|
| GLP | GLP | GLP | T. STEPHENS |

| PROJECT NO. | SHEET |
|---|---|
| | 105 |



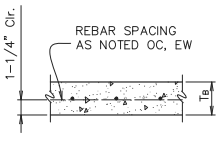

JOINT DETAIL

SCALE: N.T.S.



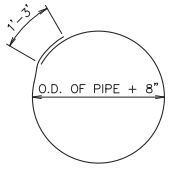

STANDARD
PRECAST WALL DETAIL

SCALE: N.T.S.



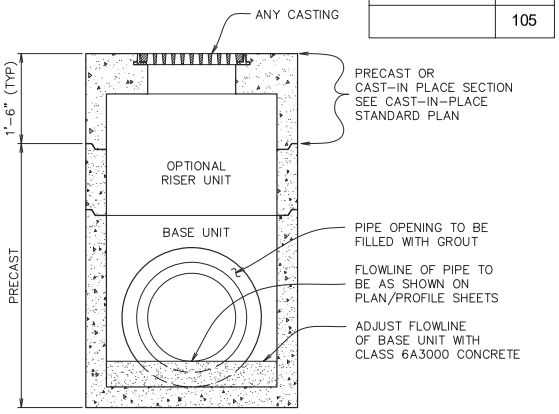

BOTTOM SLAB DETAIL

SCALE: N.T.S.



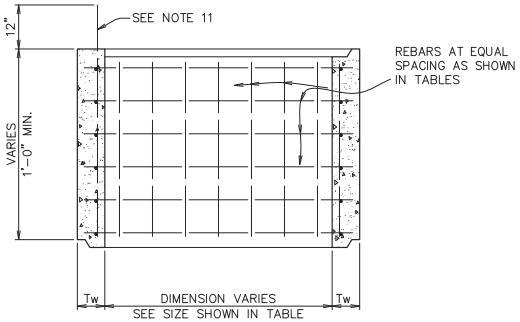

#4 HOOP

SCALE: N.T.S.



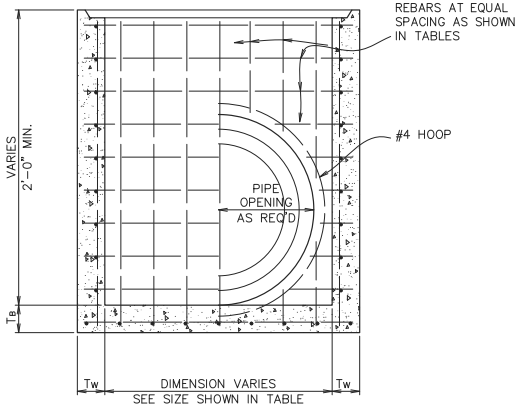

TYPICAL COMPOSITE STRUCTURE

SCALE: N.T.S.




OPTIONAL RISER UNIT

SCALE: N.T.S.




BASE UNIT

SCALE: N.T.S.

A=LENGTH INSIDE OPENING MEASURED PARALLEL TO CURB
B=WIDTH INSIDE OPENING MEASURED PERPENDICULAR TO CURB

PRECAST TOP SLAB DIMENSIONS

| "A" INSIDE LENGTH (FT) | "B" INSIDE WIDTH (FT) | "TT" SLAB THICKNESS (IN) | * REBAR REQ'D | * REBAR SPACING |
|---|---|---|---|---|
| ≤ 4' | ≤ 4' | 4.0" | #4 | 12" |
| 4'-6' | 4'-6' | 4.0" | #5 | 12" |
| 6'-8' | 6'-8' | 5.0" | #5 | 8" |
| 8'-20' | 8'-10' | 5.5" | #5 | 6" |

* AS SHOWN OC, EW, SET 1-1/4" CLR. FROM SLAB BOTTOM

PRECAST MIDDLE SLAB
UNDER PAVEMENT DIMENSIONS

| "A" INSIDE LENGTH (FT) | "B" INSIDE WIDTH (FT) | "TMP" SLAB THICKNESS (IN) | * REBAR REQ'D | * REBAR SPACING |
|---|---|---|---|---|
| ≤ 20' | ≤ 4' | 5.0" | #4 | 12" |
| ≤ 20' | 4'-6' | 6.0" | #5 | 12" |
| ≤ 20' | 6'-8' | 7.0" | #5 | 8" |
| ≤ 20' | 8'-10' | 8.5" | #5 | 6" |

* AS SHOWN OC, EW, SET 1-1/4" CLR. FROM SLAB BOTTOM

PRECAST MIDDLE SLAB
OUTSIDE PAVEMENT DIMENSIONS

| "A" INSIDE LENGTH (FT) | "B" INSIDE WIDTH (FT) | "TM" SLAB THICKNESS (IN) | * REBAR REQ'D | * REBAR SPACING |
|---|---|---|---|---|
| ≤20' | ≤ 4' | 5.0" | #4 | 12" |
| ≤20' | 4'-6' | 5.0" | #5 | 12" |
| ≤20' | 6'-8' | 6.0" | #5 | 8" |
| ≤20' | 8'-10' | 6.5" | #5 | 6" |

* AS SHOWN OC, EW, SET 1-1/4" CLR. FROM SLAB BOTTOM

PRECAST BOTTOM SLAB DIMENSIONS

| "TB" SLAB THICKNESS (IN) | "A" OR "B" MAXIMUM WIDTH OF OPENING INSIDE STRUCTURE (FT) | MAXIMUM DEPTH STRUCTURE (FT) | REBAR REQ'D | REBAR SPACING |
|---|---|---|---|---|
| 4.0" | 4' | 4' | #4 | 12" |
| 5.0" | 6' | 8' | #5 | 12" |
| 6.0" | 8' | 12' | #5 | 12" |
| 7.0" | 8' | 16' | #5 | 12" |
| 7.5" | 10' | 20' | #5 | 6" |

BOTTOM SLAB THICKNESS TO MEET MINIMUM CRITERIA SHOWN FOR OPENING WIDTH AND STRUCTURE DEPTH.

PRECAST PAVEMENT SLAB DIMENSIONS

| INTERMEDIATE SUPPORT BEAM REQ'D (Y OR N) | "A" INSIDE LENGTH (FT) | "B" INSIDE WIDTH (FT) | "TP" SLAB THICKNESS (IN) | REBAR REQ'D * | REBAR SPACING |
|---|---|---|---|---|---|
| N | ≤10' | ≤ 4' | 6.0" | #5 | 12" |
| N | ≤10' | 4'-6' | 7.0" | #5 | 12" |
| N | ≤10' | 6'-8' | 9.0" | #5 | 8" |
| Y | 6'-10' | 6'-10' | 6.0" | #5 | 12" |

* AS SHOWN OC, EW, TB

PRECAST WALL DIMENSIONS

| WALL HEIGHT (FT) | "TW" WALL THICKNESS (IN) | VERT. REBAR SPACING (IN) |
|---|---|---|
| 0'-4' | 4.0" | 12" |
| 4'-8' | 5.0" | 12" |
| 8'-10' | 6.0" | 9" |
| 10'-12' | 6.0" | 6" |
| 12'-16' | 7.0" | 4.5" |
| 16'-20' | 7.5" | 4.5" |

NOTE:

1. THESE PRECAST UNITS ARE INTENDED TO BE USED AS THE LOWER PORTION OF A COMPOSITE STRUCTURE. STRUCTURAL AND FINISHING DETAILS ARE SHOWN ON OTHER STANDARD PLANS FOR STRUCTURE TYPES.
2. ALL REINFORCING STEEL TO BE DEFORMED GRADE 60 MINIMUM REBAR. STEEL BAR SIZE & SPACING MAY BE ADJUSTED AS LONG AS AREA OF STEEL IS MAINTAINED PER FOOT IN ACCORDANCE WITH ASTM C913-08.
3. MINIMUM CONCRETE COVER FOR REBAR STEEL IS TO BE 1" FOR PRECAST CONCRETE WALLS AND 1-1/4" FOR OTHER PRECAST MEMBERS.
4. CONCRETE COMPRESSIVE STRENGTH FOR PRECAST STRUCTURES TO BE 5000 PSI AT 28 DAYS MINIMUM. CONCRETE SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI BEFORE SHIPPING UNITS.
5. SEE SHEET 702-99 FOR FRAME AND COVER DETAILS.
6. SEE SHEET 702-96 FOR CAST-IN-PLACE STRUCTURAL DETAILS.
7. PIPE OPENING TO BE FORMED ONLY WHEN REQUIRED.
8. PIPE OPENING TO BE O.D. OF PIPE + 4"± 1/2".
9. ALL PIPE ENDS TO BE SET FLUSH WITH INTERIOR WALLS FACE. PIPE ANNULAR SPACE IS TO BE GROUTED WITH NON-SHRINK GROUT AFTER INSTALLATION. GROUT AS REQUIRED TO CREATE INVERTS.
10. JOINTS BETWEEN PRECAST UNITS TO BE SEALED WITH FLEXIBLE PLASTIC GASKET MATERIAL AND WRAPPED WITH A 12" WIDTH OF GEOTEXTILE FABRIC.
11. JOINTS BETWEEN CAST-IN-PLACE SECTIONS AND OR PRECAST UNITS TO BE TONGUE AND GROOVE AND SEALED WITH TYPE II GRADE A EPOXY OR FLAT JOINT WITH A MINIMUM OF 12" OF No. 4 BARS AT 18" CTRS. (MAX.)
12. PRECAST CONCRETE INLETS CONFORMING TO STANDARD PLANS MAY BE FURNISHED. LEDGE WIDTH MAY BE REDUCED BY 1" AROUND INLET FRAMES TO 2-1/2". SUPPORT BEAM BETWEEN DOUBLE RETICULINE GRATE INLETS MAY BE REDUCED BY 2" DEPTH TO FORM 10"x10" BEAM.
13. PRECAST UNITS SHALL CONFORM TO SECTION 1017 OF THE STANDARD SPECIFICATIONS.
14. ALL PRECAST UNITS TO BE EQUIPPED WITH AT LEAST 2 COMMERCIALLY MANUFACTURED EMBEDDED INSERTS RATED FOR THE STRUCTURE'S LIFT LOAD IN COMPLIANCE WITH APPLICABLE ANSI AND OSHA STANDARDS (MINIMUM SAFETY FACTOR OF 4). EMBEDDED INSERTS TO CONSTRUCTED OF GALVANIZED STEEL OR CORROSION RESISTANT MATERIALS AND INSTALLED BY PRECAST MANUFACTURER IN ACCORDANCE WITH SUPPLIERS INSTRUCTIONS. NO LIFT INSERTS SHALL REMAIN EXPOSED ON VISIBLE SURFACES AFTER THE STRUCTURE IS INSTALLED. NO LIFTING WITH CHAINS WRAPPED AROUND STRUCTURE IS PERMITTED.
15. PRECASTERS ARE REQUIRED TO BE NPCA CERTIFIED.
16. INSTALLATION OF PRECAST STRUCTURES ARE TO BE PER MANUFACTURER'S INSTRUCTIONS. ANY MODIFICATIONS TO STRUCTURES IN FIELD SHALL REQUIRE PRECASTER'S WRITTEN APPROVAL.
17. MINIMUM THICKNESS OF STRUCTURAL ELEMENTS INSTALLED IN OR UNDER PAVEMENT SHALL BE 6".

STATE OF LOUISIANA
THOMAS A. STEPHENS
License No. 19417
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING
2/12/2013

| STANDARD PLAN No. | DATED | SHT. No. |
|---|---|---|
| 702-97 | DEC. 6, 2010 | 1 OF 1 |

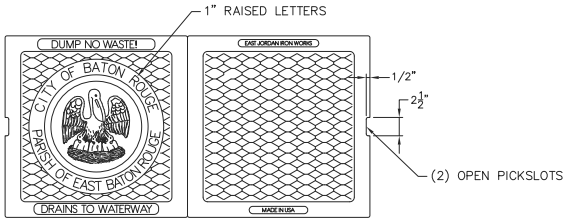
PRECAST DRAINAGE STRUCTURE
(STRUCTURAL DETAILS)

| | | |
|---|---|---|
| 1 | 02/10/2012 NOTE #5 REVISION. | G.C. |
| | DATE DESCRIPTION REVISION | BY |

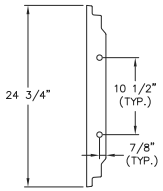
ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS
CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE

| DESIGNED | DRAWN | CHECKED | APPROVED |
|---|---|---|---|
| GLP | GLP | GLP | T. STEPHENS |

| PROJECT NO. | SHEET |
|---|---|
| | 106 |

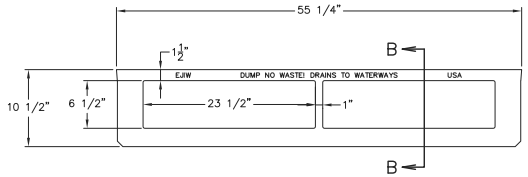



PLAN OF DUCTILE IRON COVER
SCALE: 1 1/2"=1'-0"

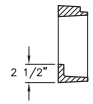



SIDE VIEW

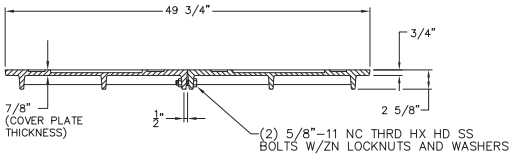
EJIW PRODUCT #44302030
USF 5188 (ITEM 8070063)
OR APPROVED EQUAL




FRONT VIEW



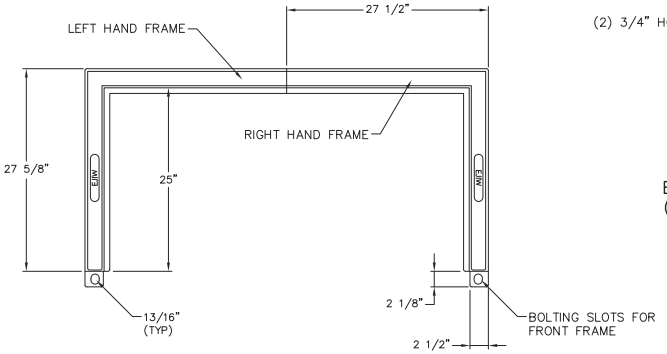

SECTION B–B

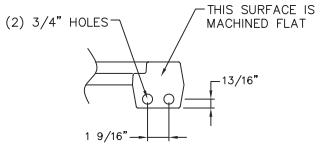



FRONT VIEW

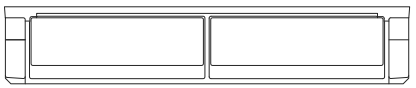
EJIW PRODUCT #44300209
USF 5188 (ITEM 8015665 & 8015666)
OR APPROVED EQUAL


TOP VIEW



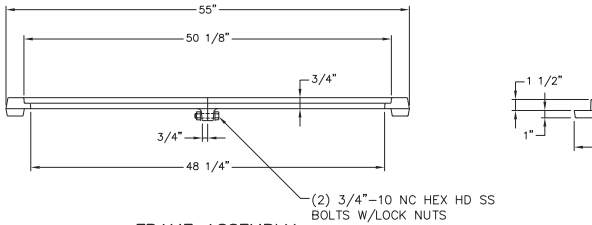




BOLT FLANGE DETAIL
(TYP, BOTH HALVES)

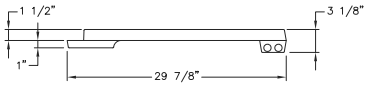


BACK VIEW
SCALE: 1 1/2"=1'-0"

EJIW PRODUCT #44300016
USF 5188 (ITEM 8060020)
OR APPROVED EQUAL




FRAME ASSEMBLY
SCALE: 1 1/2"=1'-0"





* NOTES: WEIGHT OF DUCTILE IRON COVER = 314 LBS.
WEIGHT OF DUCTILE IRON FRAME = 128 LBS.
WEIGHT OF GREY IRON GRATE = 140 LBS.
* (WEIGHTS SHOWN ARE FOR EJIW PRODUCTS.
WEIGHTS OF APPROVED EQUAL PRODUCTS MAY VARY.)

GENERAL NOTE:
ALL CAST IRON FRAME, GRATES, AND COVERS SHALL BE TRAFFIC BEARING AND BE OF DOMESTIC ORIGIN OR COMPLY WITH SECTION 6–11. FRAME, GRATES, AND COVERS SHALL MEET OR EXCEED ALL REQUIREMENTS OF THE AASHTO DESIGNATION: M306 STANDARD SPECIFICATION FOR DRAINAGE, SEWER, UTILITY, AND RELATED CASTINGS.

| DATE | DESCRIPTION REVISION | BY |
|---|---|---|
| 3/28/12 | UPDATE USF PRODUCT NUMBER. | G. L. P. |
| 12/06/10 | ADD NOTES FOR PRODUCT WEIGHTS. | G. L. P. |
| 3/17/10 | ADD USF PRODUCT NUMBER. | G. L. P. |

| STANDARD PLAN No. | DATED | SHT. No. |
|---|---|---|
| 702–99 | AUGUST 11, 2008 | 1 OF 3 |

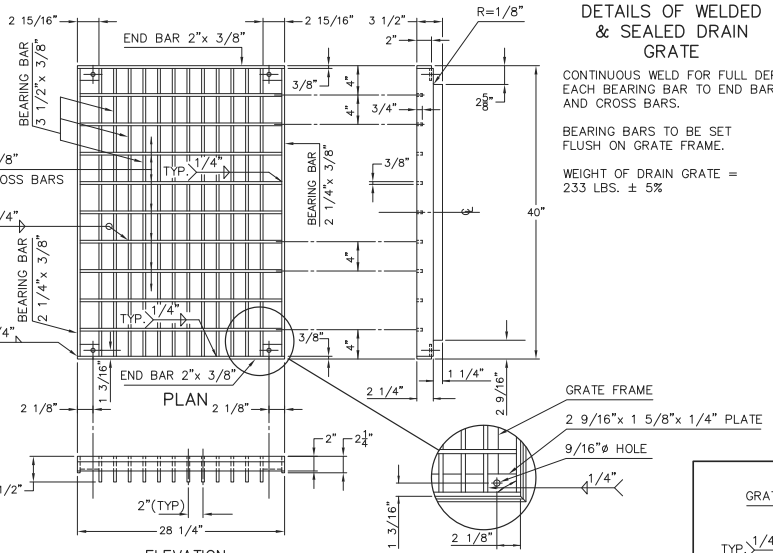
# FRAMES, GRATES AND COVERS FOR INLETS AND MANHOLES (TYPE 1)

ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS
CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE

| DESIGNED | DRAWN | CHECKED | APPROVED |
|---|---|---|---|
| G. CHENG | G. VANNICE | G. CHENG | T. STEPHENS |

ATTACHMENT A

| PROJECT NO. | SHEET |
|---|---|
| | 107 |




## DETAILS OF WELDED & SEALED DRAIN GRATE

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

BEARING BARS TO BE SET FLUSH ON GRATE FRAME.

WEIGHT OF DRAIN GRATE = 233 LBS. ± 5%

FABRICATED BAR
SCALE: 1 1/2"=1'-0"

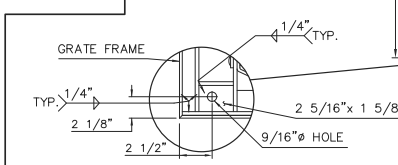
## DETAILS OF RIVETED RETICULINE DRAIN GRATE

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

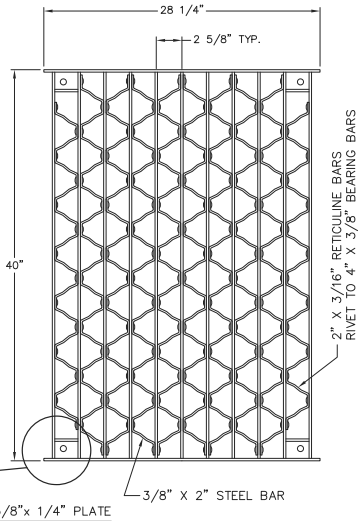
BEARING BARS TO BE SET FLUSH ON GRATE FRAME.

CENTER TO CENTER OF BEARING BARS EQUALS 2 5/16" PLUS BEARING BAR THICKNESS.

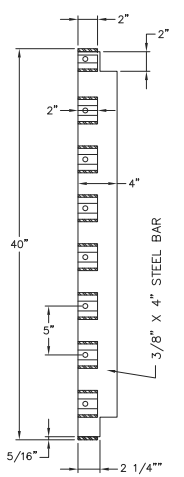
WEIGHT OF DRAIN GRATE = 266 LBS. ± 5%



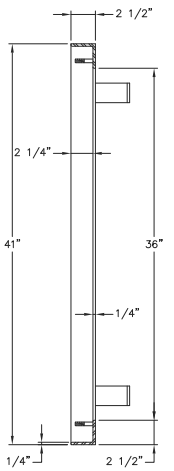

HOLD-DOWN PLATE



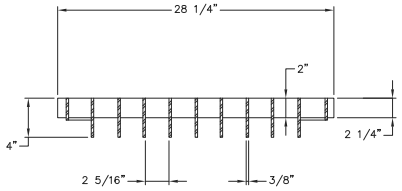

GRATE TOP VIEW



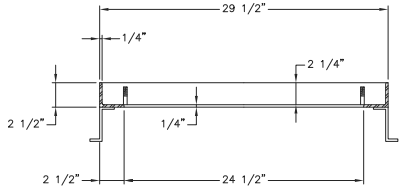

GRATE SECTION




FRAME SECTION

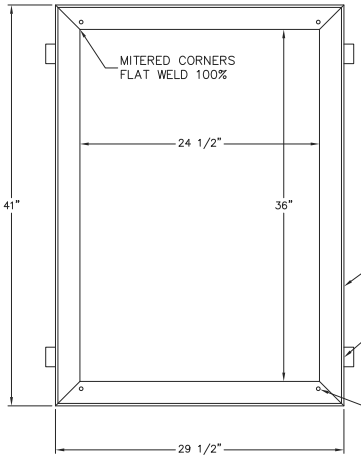



GRATE SECTION



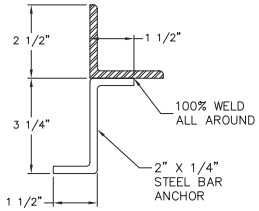

FRAME SECTION

RETICULINE GRATE AND FRAME
SCALE: 2"=1'-0"




FRAME TOP VIEW

NOTE:
FRAME AND GRATE:
ASTM A36 STEEL, WELDED CONSTRUCTION. HOT DIP GALVANIZED AFTER FABRICATION.
(GALVANIZE PER ASTM A123)




ANCHOR DETAIL

EJIW PRODUCT #44863061
USF 6672-6673
OR APPROVED EQUAL

| STANDARD PLAN No. | DATED | SHT. No. |
|---|---|---|
| 702-99 | AUGUST 11, 2008 | 2 OF 3 |

# FRAMES, GRATES AND COVERS FOR INLETS AND MANHOLES ( TYPE 2 )

| DATE | DESCRIPTION REVISION | BY |
|---|---|---|
| 3/28/12 | ADD USF PRODUCT NUMBER. | G. L. P. |

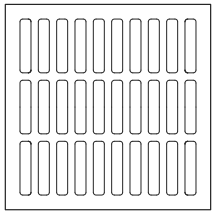
ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS
CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE

| DESIGNED | DRAWN | CHECKED | APPROVED |
|---|---|---|---|
| G. CHENG | G. VANNICE | G. CHENG | T. STEPHENS |

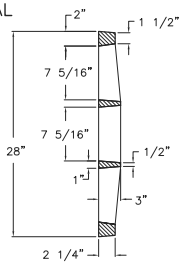
702-99

ATTACHMENT A

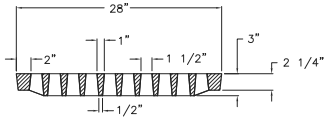
EJIW PRODUCT #45775030, USF 6278
OR APPROVED EQUAL



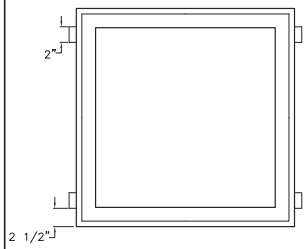
GRATE TOP VIEW



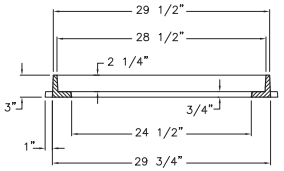

GRATE SECTION




GRATE SECTION




FRAME TOP VIEW

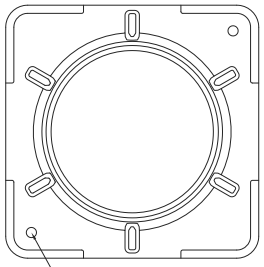


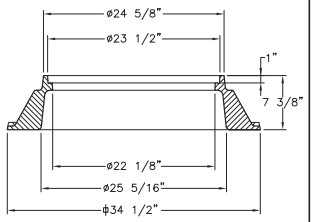

FRAME SECTION

"TYPE 3"
SCALE: 1-1/2"=1'-0"

EJIW PRODUCT #45775010
USF 4650
OR APPROVED EQUAL

EJIW PRODUCT #41301211, USF 678 BZ
OR APPROVED EQUAL

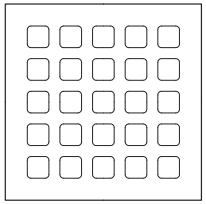


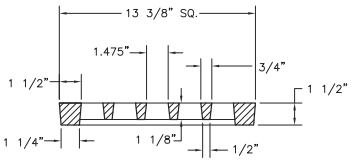

NOTE:
FRAME TO BE USED WITH TYPE 7 COVER.

"TYPE 9"
SCALE: 1-1/2"=1'-0"

EJIW PRODUCT #45913130, USF 6279
OR APPROVED EQUAL



GRATE TOP VIEW



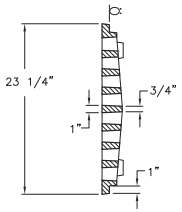

GRATE SECTION

"TYPE 4"
SCALE: 3"=1'-0"

DETAILS OF CAST IRON GRATE
WEIGHT OF CASTING = 38 LBS.

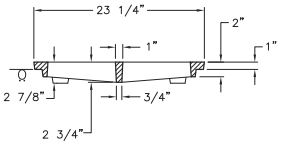
EJIW PRODUCT #43501030, USF 5685
OR APPROVED EQUAL

GRATE TOP VIEW




GRATE SECTION

Ø MACHINED SURFACE

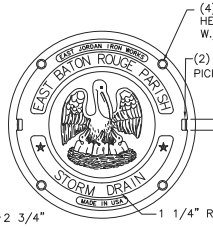


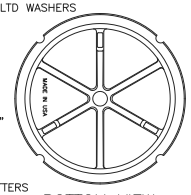

GRATE SECTION

"TYPE 5"
SCALE: 1-1/2"=1'-0"

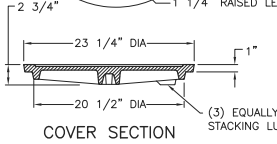
EJIW PRODUCT #41886007
USF 1346 BZ BLT
OR APPROVED EQUAL

| PROJECT NO. | SHEET |
|---|---|
| | 108 |

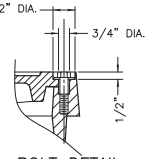


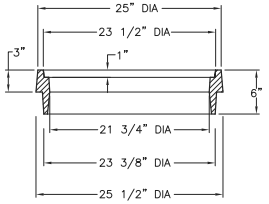

BOTTOM VIEW
OF COVER



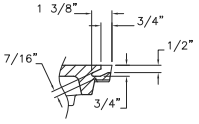

COVER SECTION




BOLT DETAIL

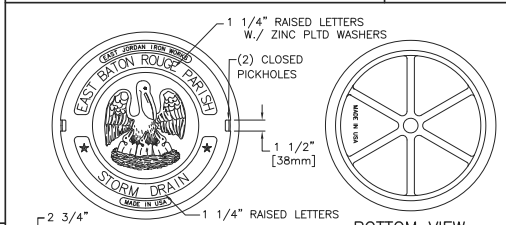



RING SECTION




PICKHOLE DETAIL

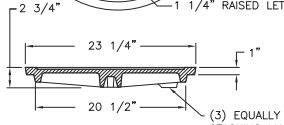
"TYPE 6"
SCALE: 1-1/2"=1'-0"



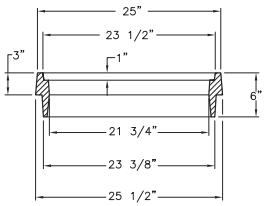




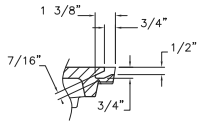
BOTTOM VIEW
OF COVER




COVER SECTION



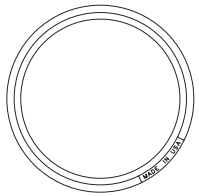

RING SECTION



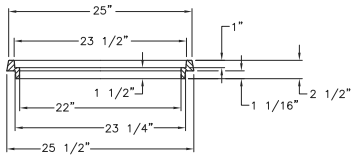

PICKHOLE DETAIL

EJIW PRODUCT #41886010
USF 1346 BZ
OR APPROVED EQUAL

"TYPE 7"
SCALE: 1-1/2"=1'-0"




EJIW PRODUCT #41901110
USF 2337
OR APPROVED EQUAL




RING SECTION

"TYPE 8"
DETAILS OF MANHOLE
ADJUSTMENT RING
SCALE: 1 1/2"=1'-0"


| | | | |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| 3/28/12 | ADD USF PRODUCT NUMBER. | G. L. P. | |
| DATE | DESCRIPTION REVISION | BY | |

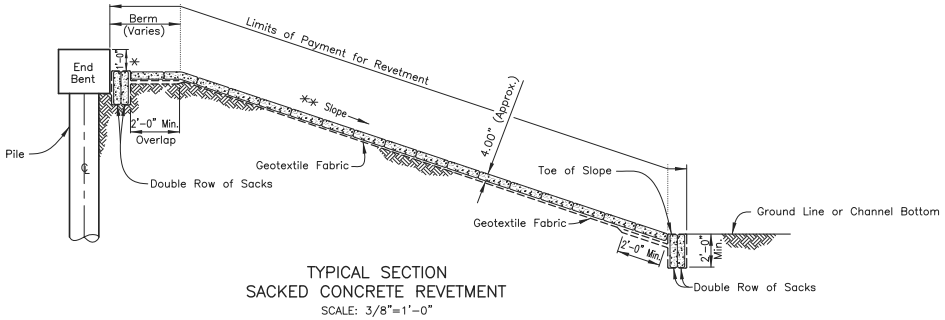
| STANDARD PLAN No. | DATED | SHT. No. |
|---|---|---|
| 702-99 | AUGUST 11, 2008 | 3 OF 3 |

FRAMES, GRATES AND COVERS
FOR INLETS AND MANHOLES

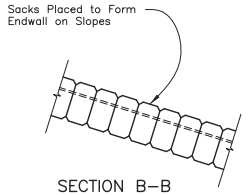
ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS
CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE

| DESIGNED | DRAWN | CHECKED | APPROVED |
|---|---|---|---|
| G. CHENG | G. VANNICE | G. CHENG | T. STEPHENS |

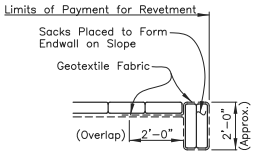
| PROJECT NO. | SHEET |
|---|---|
| | 109 |



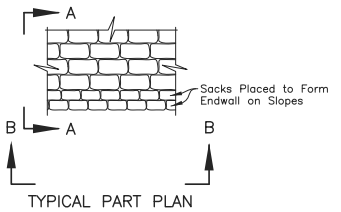

TYPICAL SECTION
SACKED CONCRETE REVETMENT
SCALE: 3/8"=1'-0"




SECTION B–B

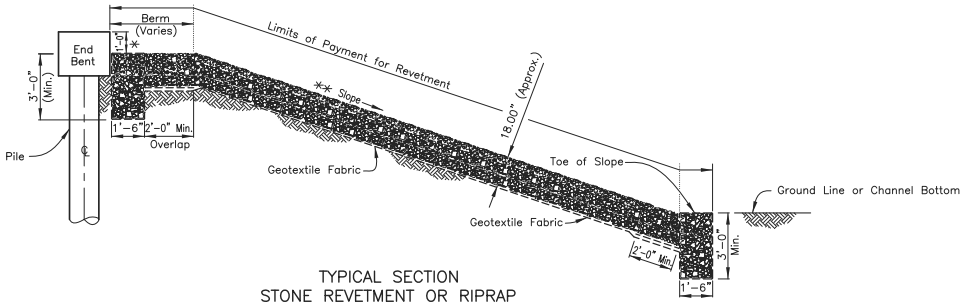



SECTION A–A

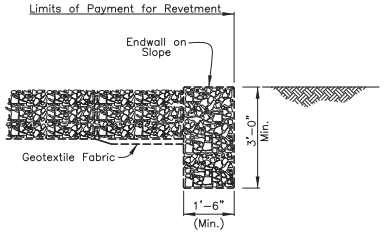



TYPICAL PART PLAN

ENDWALL DETAILS
FOR SACKED CONCRETE REVETMENT
SCALE: N.T.S.




TYPICAL SECTION
STONE REVETMENT OR RIPRAP
SCALE: 3/8"=1'-0"




ENDWALL DETAILS FOR
STONE REVETMENT OR RIPRAP
SCALE: N.T.S.

* UNLESS OTHERWISE SHOWN ON PLANS
** SEE GENERAL PLAN FOR EMBANKMENT SLOPE AND LIMITS.


| STANDARD PLAN NO. | DATED | SHEET NO. |
|---|---|---|
| 704–01 | February 6, 2008 | 1 OF 1 |

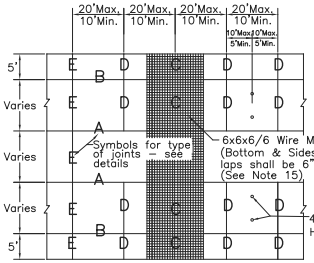
FLEXIBLE REVETMENT

| DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|
| | | |

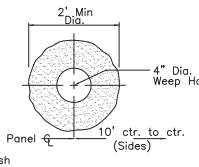
ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS
CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE

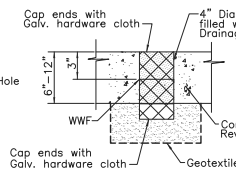
| DESIGNED | DRAWN | CHECKED | APPROVED |
|---|---|---|---|
| R.BROADBENT | G. VANNICE | H. PYLANT | T. STEPHENS |

ATTACHMENT A



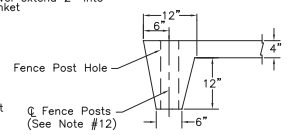

PLAN



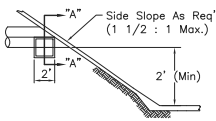




WEEP HOLE DETAIL "G"

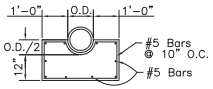
Side Slope, Bottom Slab and Retaining Wall
Note: No direct pay for weep hole




CONTINUOUS SIDEWALK TOE WALL




TYPICAL PIPE SUPPORT



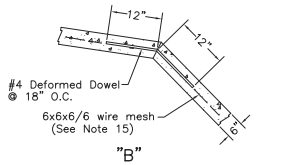

(NO DIRECT PAY)

TYPICAL PIPE SUPPORT SECTION "A–A"

| PROJECT NO. | SHEET |
|---|---|
| | 110 |

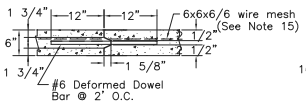
## GENERAL NOTES

1. Compaction of embankments shall be accomplished by any satisfactory method approved by the project engineer. The contractor shall use mechanical tampers.
2. If no satisfactory method of compacting loose material is found, then embankment shall be stacked earth filled sacks or concrete rip–rap.
3. All concrete revetment shall be concrete class 6A4000.
4. Unless otherwise approved and directed by the engineer a granular foundation shall be used.
5. Top of lining to be adjusted if necessary to match existing ground.
6. Reinforcing steel, wire mesh and joint material used in ditch pavement to be included in price bid for concrete revetment.
7. Contractor shall dispose of excess excavation outside limits of the project. Cost to be included in price bid for channel excavation.
8. Borrow material, where req'd, shall consist of select material (A–4 or better) to be placed at locations warranted and as directed by project engineer.
9. If silty material is encountered in the side slopes of the channel section, and if so directed by the engineer, sets of weep holes shall be installed transversely across the channel rather than longitudinally down the channel. The total number of weep holes so installed shall not exceed the number that would otherwise have been installed in a longitudinal manner.
10. Expansion joint seal: prime all surfaces with 2379 primer (Grace material) or equal, allow one hour for drying time. Apply vertiseal coat 2381 (Grace material) or equal.
11. All fence posts to be set prior to installing toe wall & sidewalk. (See 704–07).
12. Required 6x6x6/6 welded wire mesh fabric shall conform to either ASTM A185 or ASTM A497. Welded wire mesh fabric shall only be furnished in flat sheets, rolls will not be accepted. Welded wire fabric shall be place in accordance with detail by utilizing approved bar chairs or other approved methods.



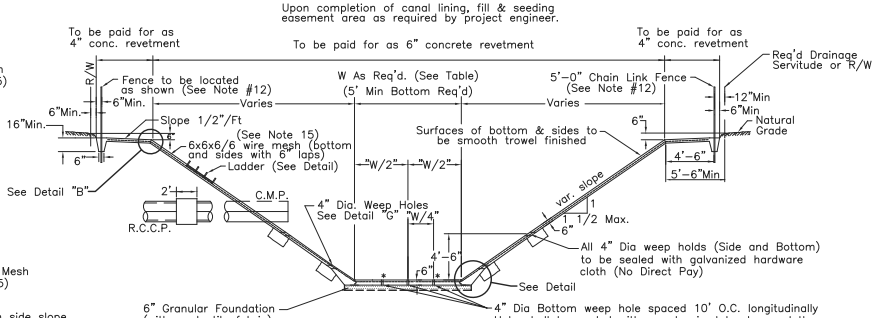

"B"

LONGITUDINAL CONSTRUCTION JOINT




"C"

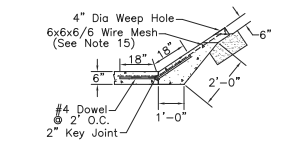
BOTTOM CONSTRUCTON JOINT




* Note: Intermediate weep holes required only when the bottom width ("W") exceeds 10 feet.

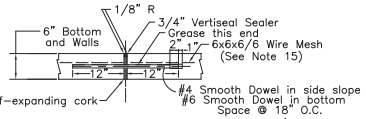
TYPICAL SECTION NO. 2

| STA. | to | STA. | "W" | Slope |
|---|---|---|---|---|
| 0+00 | 0+00 | | 00 ft. | 0.000% |
| 0+00 | 0+00 | | 00 ft. | 0.000% |




"A"

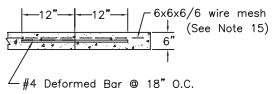
LONGITUDINAL CONSTRUCTION JOINT




Expansion Joints to be installed at 300' O.C. and at directional changes as directed by the Project Engineer.

"E"

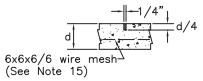
TRANSVERSE EXPANSION JOINT




"C"

SIDE SLOPE CONSTRUCTION JOINT

Note: Required for stagger panel construction also.

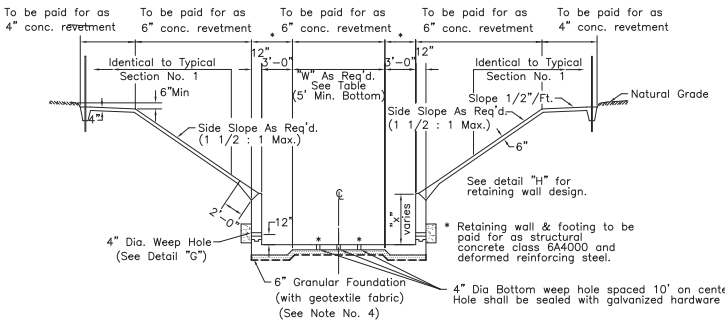



Dummy Joints to be installed at min. 10' ctrs. max. 20' ctrs.

"D"

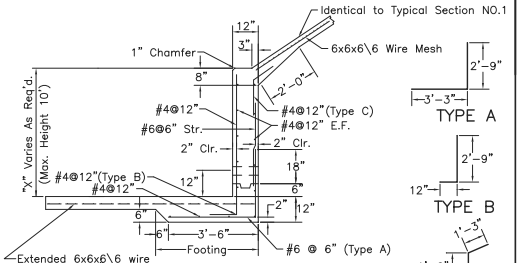
DUMMY GROOVE JOINT

NOTE: Use for contiuous monolithic panel construction only.




TYPICAL SECTION NO. 1

| STA. | to | STA. | "W" | Slope |
|---|---|---|---|---|
| 0+00 | 0+00 | | 00 ft. | 0.000% |
| | | | | |



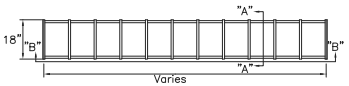

"H"

RETAINING WALL



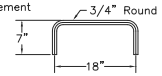

## LADDER DETAILS

NOTE:
1. Ladders to be located as indicated on plans (or as directed by Project Engineer).
2. Ladder rungs shall be fabricated of wrought iron meeting the requirement of A.S.T.M. Specification A207 and shall be hot dipped galvanized.
3. All bends shall be made hot.

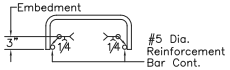



LADDER PLAN


LADDER PLAN SECTION "B–B"




LADDER RUNG DETAILS




SECTION "A–A"


| DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|
| | | |

| STANDARD PLAN NO. | DATED | SHEET NO. |
|---|---|---|
| 704–05 | January 18, 2008 | 1 OF 1 |

CONCRETE CANAL LINING
NEW CANAL LINING

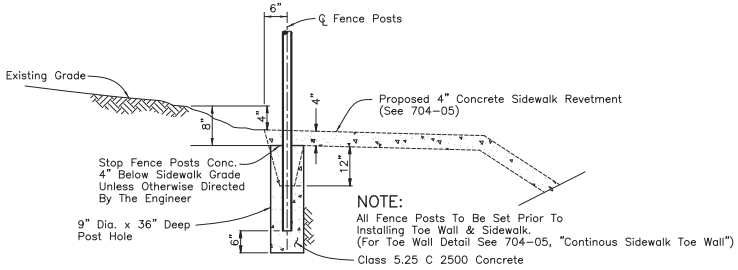
ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS
CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE

| DESIGNED | DRAWN | CHECKED | APPROVED |
|---|---|---|---|
| J.M. KLIER | D.R. PATT | B. HARMON | B. HARMON |

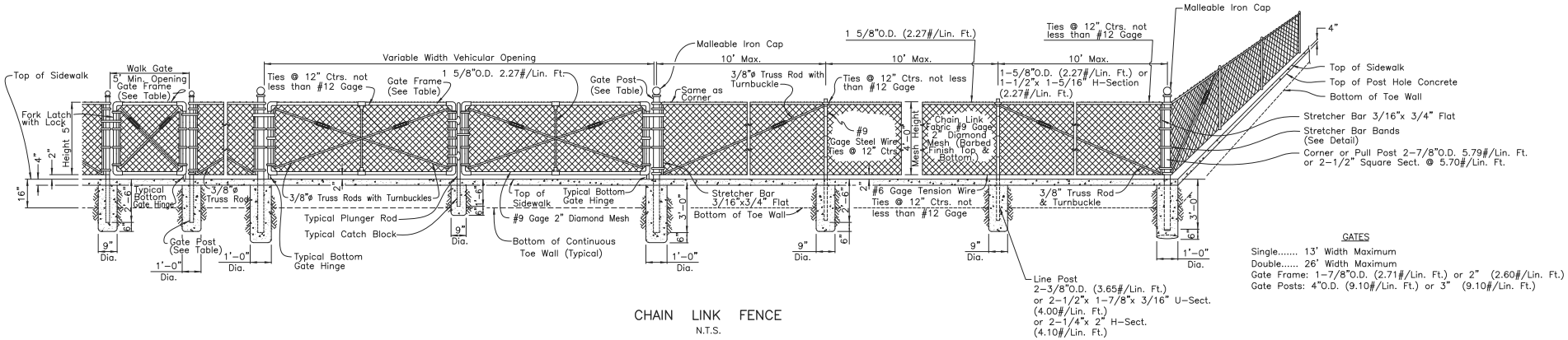
704–05

ATTACHMENT A

| PROJECT NO. | SHEET |
|---|---|
| | 111 |




DETAIL OF
POST FOOTING



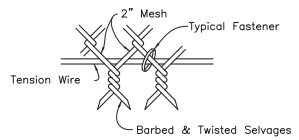

CHAIN LINK FENCE
N.T.S.

GATES

Single..... 13' Width Maximum
Double..... 26' Width Maximum
Gate Frame: 1-7/8"O.D. (2.71#/Lin. Ft.) or 2" (2.60#/Lin. Ft.)
Gate Posts: 4"O.D. (9.10#/Lin. Ft.) or 3" (9.10#/Lin. Ft.)

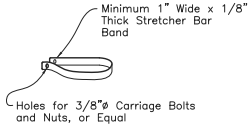
General Note:

Typical Installation Plan may vary as shown on the Plans or as Directed by the Engineer. Location of Gates to be shown on Plans.

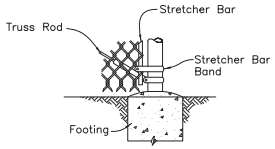



FABRIC & TENSION WIRE DETAIL
Tension Wire Req'd. on Bottom Only


TYPICAL BOTTOM
GATE HINGE




TYPICAL STRETCHER
BAR BAND




TERMINAL POST DETAIL

STATE OF LOUISIANA
THOMAS A. STEPHENS
License No. 19417
PROFESSIONAL ENGINEER
CIVIL ENGINEER
2/12/2013

| DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|
| | | |

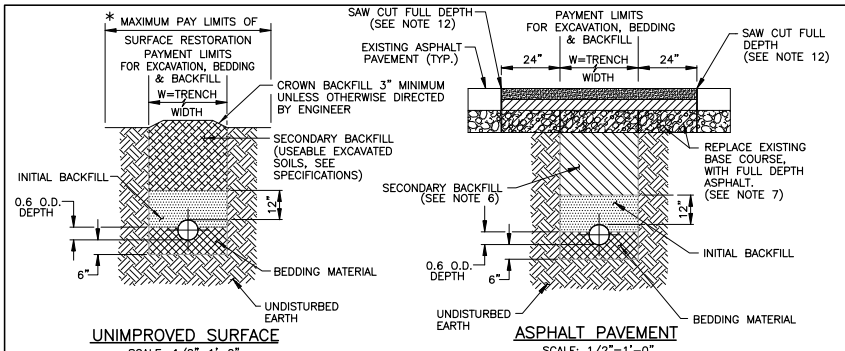
| STANDARD PLAN NO. | DATED | SHEET NO. |
|---|---|---|
| 704-07 | January 18, 2008 | 1 OF 1 |

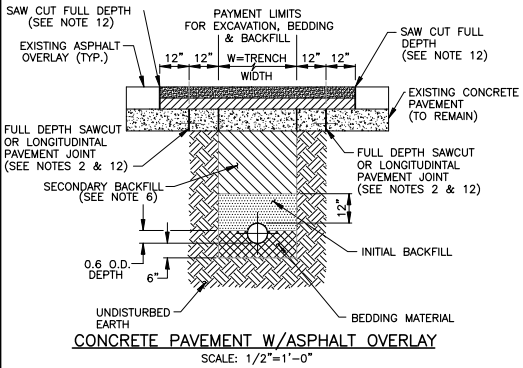
CONCRETE CANAL LINING
FENCE DETAILS

ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS
CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE

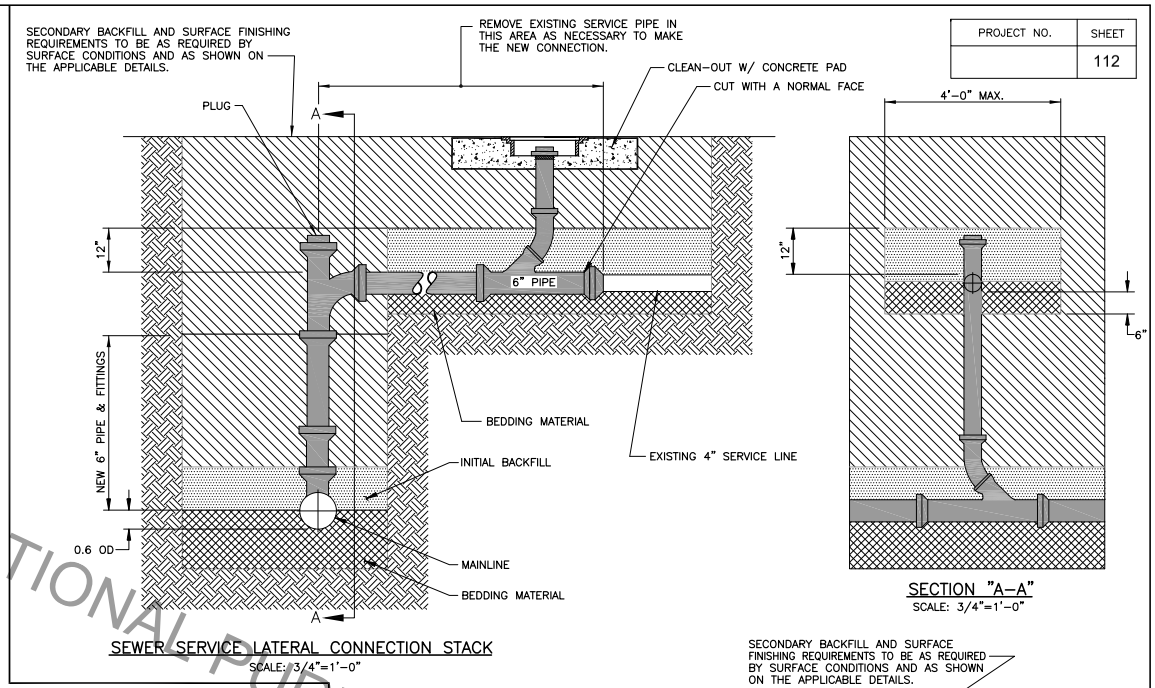
| DESIGNED | DRAWN | CHECKED | APPROVED |
|---|---|---|---|
| J.M. KLIER | G. VANNICE | B. HARMON | B. HARMON |

704-07




## TYPICAL TRENCH EXCAVATION & FINAL PAVEMENT REPLACEMENT DETAILS




| PROJECT NO. | SHEET |
|---|---|
| | 112 |

NOTES:

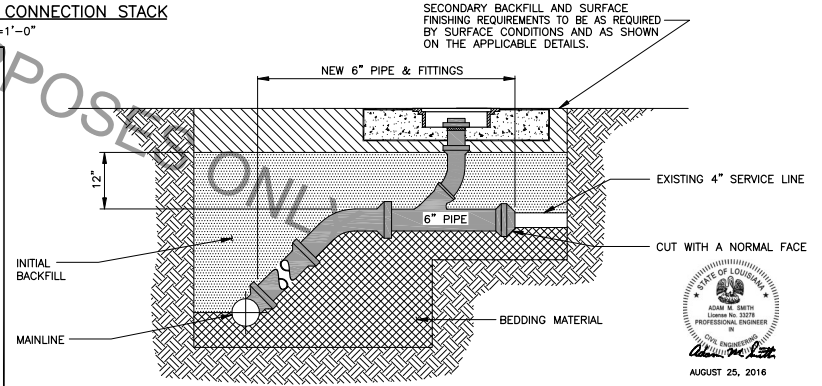
1. TRENCH WIDTH (W) SHALL BE AS SHOWN IN THE TABLE BELOW. PIPE SHALL BE CENTERED IN TRENCH.

| NOMINAL PIPE SIZE | "W" |
|---|---|
| UP TO 36" | 36" + O.D. |
| OVER 36" | 48" + O.D. |

2. CONTRACTOR TO REMOVE AND REPLACE CONCRETE PAVEMENT SLABS AS SHOWN. IF CONCRETE PAVEMENT JOINT (OR EDGE OF ROAD/BACK OF CURB) IS WITHIN 2', REMOVE PAVEMENT TO JOINT LINE. PAVEMENT TO CONFORM TO STANDARD CPS 502-01(STANDARD PAVEMENT DETAILS). REUSE EXISTING DOWELS IF NOT DAMAGED DURING PAVEMENT REMOVAL. REPLACE ALL DAMAGED DOWEL WITH ½" x 2'-0" DEFORMED BARS ON 2'-0" CENTERS WITH EPOXY.
3. WATER SHALL NOT BE PERMITTED IN TRENCH DURING CONSTRUCTION. DEWATER AS NECESSARY.
4. USE OF THE UNSTABLE SUBGRADE PIPE BEDDING DETAIL IS TO BE DETERMINED IN THE FIELD BY THE ENGINEER.
5. GEOTEXTILE FABRIC SHALL BE OVERLAPPED 8" MINIMUM.
6. IF LIMITS OF THE PIPE TRENCH FALL UNDER EXISTING ASPHALTIC OR PCC ROADWAYS AND/OR EXISTING PARKING LOTS, THE SECONDARY BACKFILL SHALL BE #610 STONE OR AS SPECIFIED IN SECTION 801 OF THE SPECIFICATIONS.

   IF LIMITS OF THE PIPE TRENCH FALL OUTSIDE OF, BUT WITHIN 10 FT. OF THE EDGE OF AN EXISTING ROADWAY, OR UNDER THE LIMITS OF A FUTURE ROADWAY TO BE CONSTRUCTED SUBSEQUENT TO SANITARY SEWER INSTALLATION; THE SECONDARY BACKFILL SHALL BE THE SAND-AGGREGATE MIXTURE. REFER TO SECTION 801 OF THE SPECIFICATIONS FOR SPECIFIC REQUIREMENTS.

   IN AREAS OUTSIDE THOSE DESCRIBED ABOVE, SECONDARY BACKFILL MATERIAL SHALL CONSIST OF USABLE EXCAVATED SOILS.
7. ASPHALTIC CONCRETE PAVEMENT SHALL BE REPLACED WITH FULL DEPTH ASPHALT CONSISTING OF A MINIMUM 7" THICKNESS OF MIX TYPE B BASE COURSE AND 2" THICKNESS OF WEARING COURSE FOR CITY/PARISH STREETS IN ACCORDANCE WITH THE SPECIFICATIONS. MINIMUM 4" MIX TYPE B (PG64-22) FOR PARKING LOTS AND DRIVEWAYS.
8. ASPHALT OR CONCRETE PAVEMENT OR UNIMPROVED GRANULAR SURFACE REMOVED IN EXCESS OF LIMITS SHOWN SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
9. BEDDING AND BACKFILL NEEDED IN EXCESS OF LIMITS SHOWN SHALL BE PROVIDED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
10. MAXIMUM PAYMENT LENGTHS FOR REMOVAL AND RESTORATION OF SURFACES SHALL BE THE SAME AS FOR THE EXCAVATION, BEDDING AND BACKFILL.
11. *PAY LIMITS OF SURFACE RESTORATION ON UNIMPROVED SURFACES SHALL BE LIMITED TO THE WIDTH OF THE SEWER SERVITUDE OR AS SPECIFIED ON THE DRAWINGS AND MUST BE APPROVED BY THE ENGINEER.
12. FINAL EDGES ALONG PAVEMENT REMOVAL LIMITS SHALL BE STRAIGHT, CLEAN, SOLID, VERTICAL FACES FREE FROM LOOSE MATERIAL PRIOR TO PAVEMENT RESTORATION. SAWCUTTING AT LIMITS SHOWN SHALL BE PAID ONLY ONCE PER TRENCH PATCH. ANY ADDITIONAL SAWCUTS FOR THE CONVENIENCE OF THE CONTRACTOR SHALL BE AT NO ADDITIONAL COST TO THE OWNER.
13. IMPROVED GRANULAR SURFACE LIMITS SIMILAR TO CONCRETE PAVEMENT LIMITS.




## BACKFILL FOR SERVICE LINE RECONNECTION

STATE OF LOUISIANA
ADAM M. SMITH
License No. 33278
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING
AUGUST 25, 2016

| STANDARD PLAN NO. | DATED | SHEET NO. |
|---|---|---|
| 801-01 | APRIL 17, 2015 | 1 OF 1 |

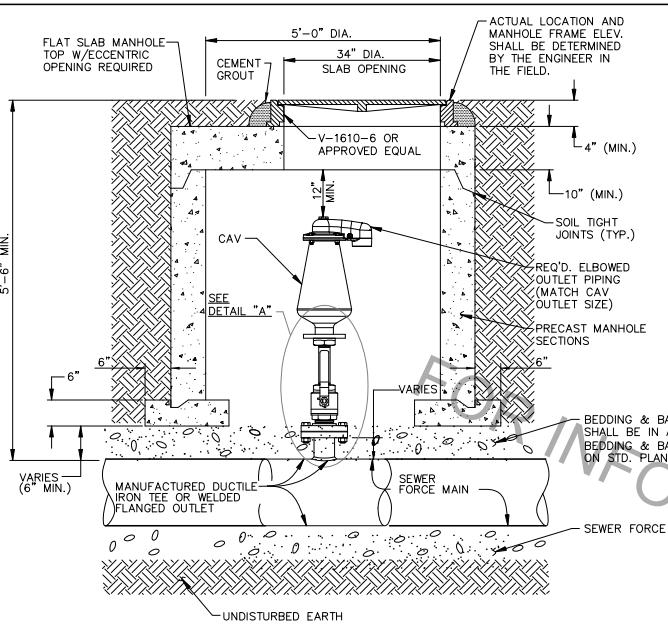
BEDDING AND BACKFILL DETAILS FOR SANITARY SEWER PIPE, FORCE MAINS AND SERVICE LINES

| DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|
| 5/16 | REVISED TITLE OF UNSTABLE SUBGRADE DETAIL | A.M.S. |
| 4/15 | DELETED GEOTEXTILE FABRIC EXCEPT FOR USE WITH #57 STONE AND REVISED GENERAL NOTES | A.M.S. |
| 4/13 | REVISED STACK DETAILS AND REVISED GENERAL NOTES | A.S. |
| 10/12 | ADDED GEOTEXTILE FABRIC ON SEC. BACKFILL | A.S. |

ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS
CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE

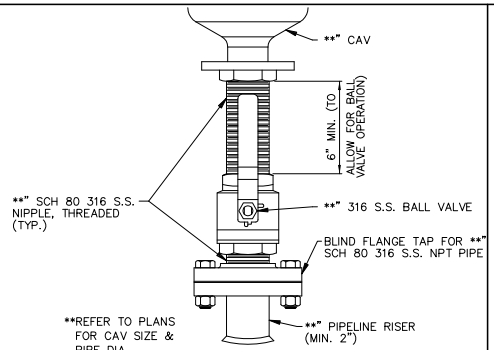
| DESIGNED | DRAWN | CHECKED | APPROVED |
|---|---|---|---|
| A. SCHULZE | G. VANNICE | N. COBB | A. SMITH |

801-01



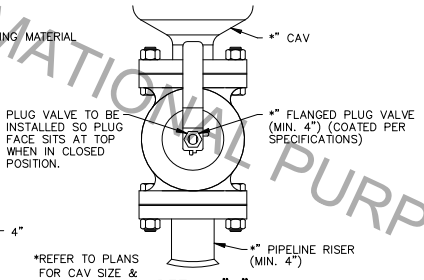

FORCE MAIN COMBINATION AIR RELEASE/VACUUM VALVE ASSEMBLY

N.T.S.



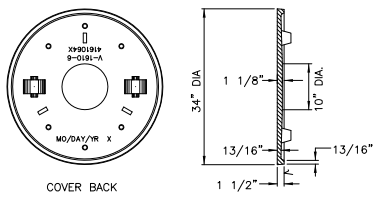

2" COMBINATION AIR/VACUUM ASSEMBLY

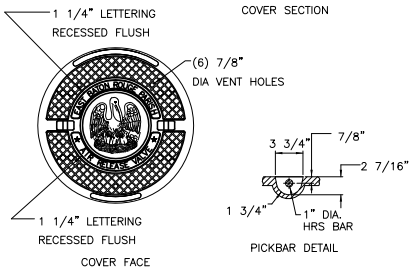
N.T.S.



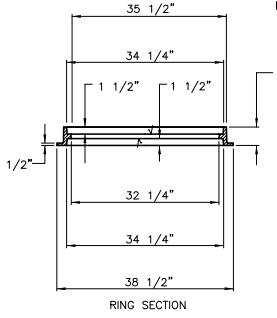

3" OR LARGER COMBINATION AIR/VACUUM ASSEMBLY

N.T.S.



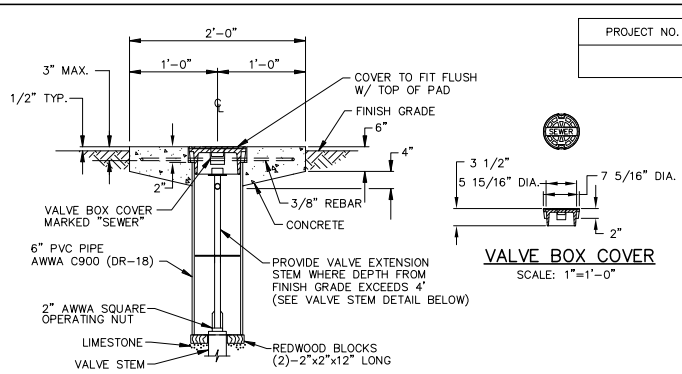

AIR RELEASE / VACUUM VALVE MANHOLE COVER W/ VENT HOLES & LOGO




AIR RELEASE / VACUUM VALVE MANHOLE FRAME REVERSIBLE RING TYPE

NOTE:

ALL CAST IRON FRAME AND COVERS SHALL BE TRAFFIC BEARING FRAME AND COVERS SHALL MEET OR EXCEED ALL REQUIREMENTS OF THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS DESIGNATION : M306-05 STANDARD SPECIFICATION FOR DRAINAGE, SEWER, UTILITY, AND RELATED CASTINGS. THEY SHALL HAVE AN ENVIRONMENTALLY SAFE, WATER-BASE ASPHALTIC COATING WHICH IS NONTOXIC, NONFLAMMABLE, COLORLESS, AND DRIES TO A HARD BLACK FINISH.





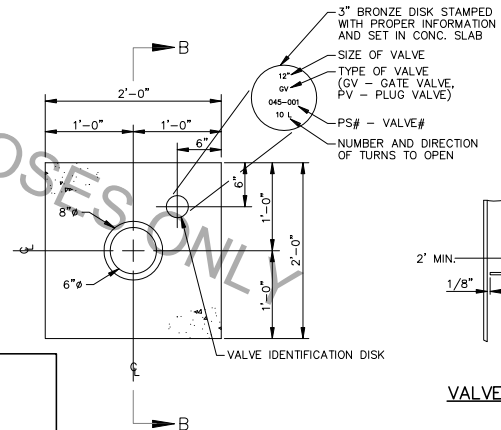


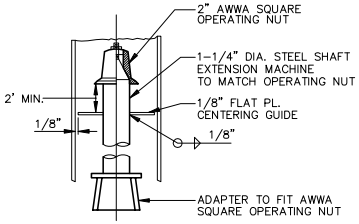
NOTES:

PROVIDE PROTECTIVE COATING TO EXTERIOR SURFACE OF VALVE BODY IN ACCORDANCE WITH SPECS.

DETAIL OF VALVE BOX

SCALE: 1 1/2"=1'-0"






| PROJECT NO. | SHEET |
|---|---|
| | 113 |

ADAM M. SMITH License No. 33278 PROFESSIONAL ENGINEER IN CIVIL ENGINEERING STATE OF LOUISIANA

SEPTEMBER 19, 2019

| DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|
| 9/19 | REVISED VALVE BOX & COMBINATION AIR/VACUUM ASSEMBLY DETAILS | A.M.S. |

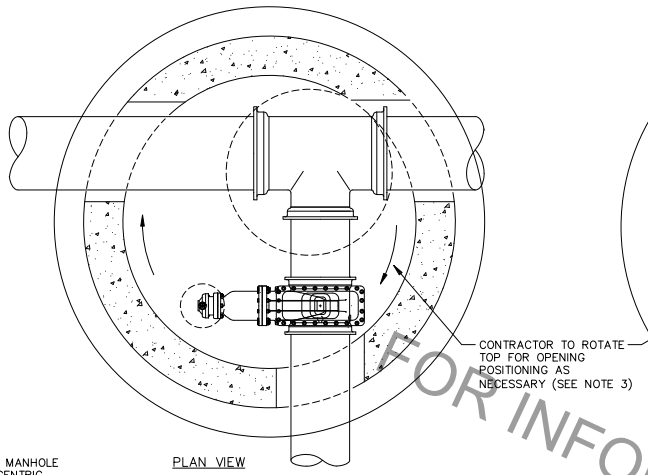
| STANDARD PLAN NO. | DATED | SHEET NO. |
|---|---|---|
| 804-01 | AUGUST 1, 2011 | 1 OF 3 |

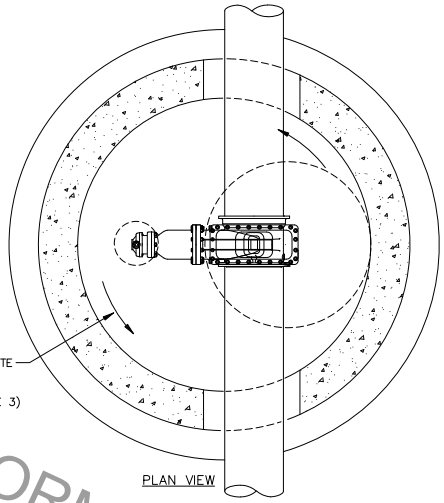
FORCE MAIN DETAILS

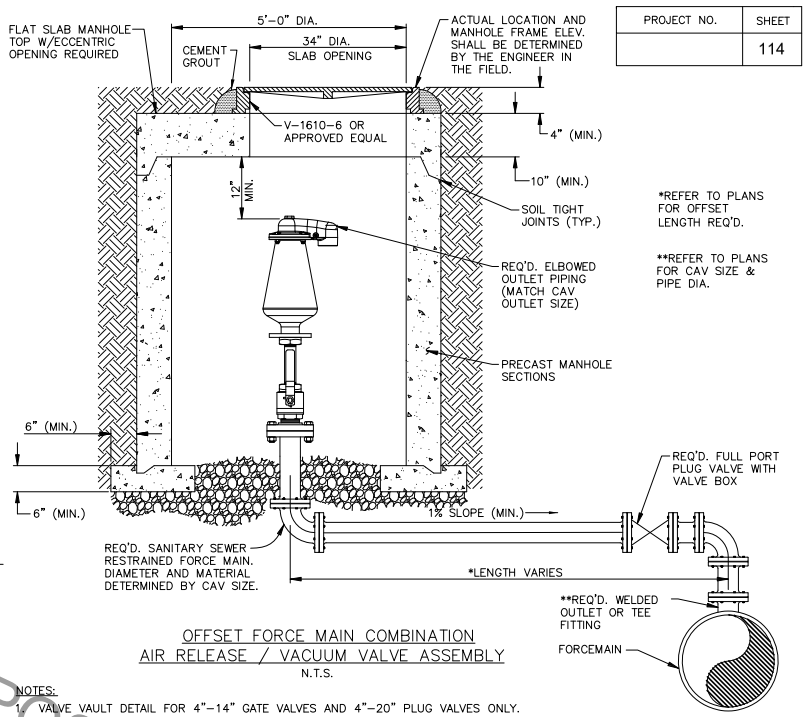
ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS
CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE

| DESIGNED | DRAWN | CHECKED | APPROVED |
|---|---|---|---|
| A. SCHULZE | G. VANNICE | N. COBB | A. SMITH |

| PROJECT NO. | SHEET |
|---|---|
| | 114 |



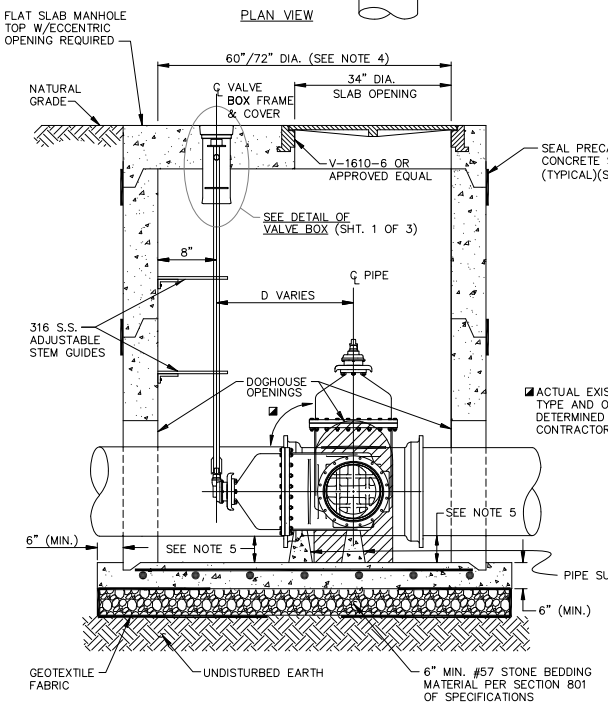



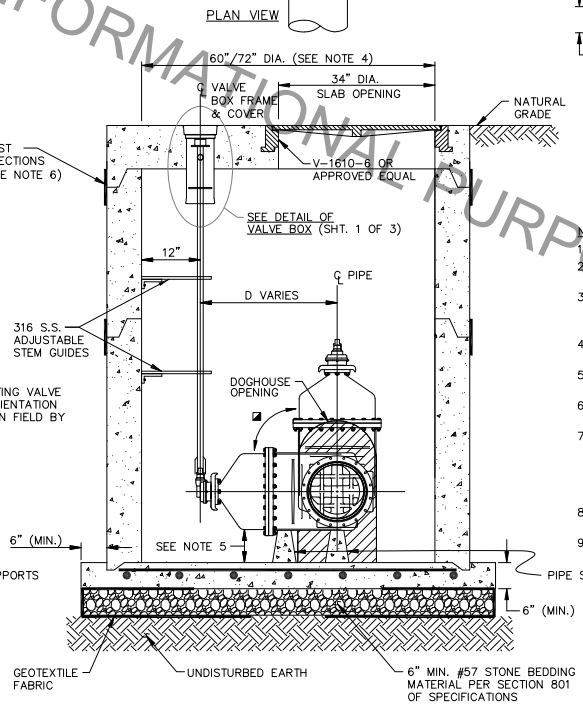

*REFER TO PLANS FOR OFFSET LENGTH REQ'D.

**REFER TO PLANS FOR CAV SIZE & PIPE DIA.

OFFSET FORCE MAIN COMBINATION
AIR RELEASE / VACUUM VALVE ASSEMBLY
N.T.S.




SECTION VIEW
ISOLATION VALVE VAULT (TEE BRANCH CONFIGURATION)
N.T.S.




SECTION VIEW
ISOLATION VALVE VAULT (IN-LINE CONFIGURATION)
N.T.S.

NOTES:
1. VALVE VAULT DETAIL FOR 4"-14" GATE VALVES AND 4"-20" PLUG VALVES ONLY.
2. PIPE OFFSET DISTANCE "D" IS BASED ON VALVE TYPE, SIZE, AND MANUFACTURER. CONTRACTOR IS RESPONSIBLE FOR COORDINATING VALVE MEASUREMENTS WITH PRECASTER FOR PROPER FINAL DIMENSIONS.
3. CONTRACTOR SHALL LOCATE VAULT OVER VALVE BASED ON ACTUAL VALVE ORIENTATION AND LINE CONFIGURATION TO ACHIEVE REQUIRED DISTANCE SHOWN FROM INTERIOR WALL TO THE CENTERLINE OF VALVE EXTENSION STEM. CONTRACTOR MAY ROTATE TOP SLAB AS NECESSARY TO HAVE VALVE STEM CENTERED IN VALVE BOX FRAME.
4. CONSTRUCT 60" DIA. VAULT FOR FORCE MAINS LESS THAN 24" DIA. AND FOR FORCE MAINS 24" AND LARGER CONSTRUCT 72" DIA. VAULT.
5. CLEARANCE FROM PIPE TO VAULT INVERT SHALL BE AS NECESSARY TO PROVIDE PROPER SUPPORTS FOR PIPE AND VALVE. CONTRACTOR MAY CHOOSE EITHER CONCRETE OR ADJUSTABLE SUPPORTS.
6. VAULT SECTIONS SHALL BE JOINED TOGETHER WITH FLEXIBLE GASKETS AND EXTERNALLY SEALED AT THE JOINTS IN ACCORDANCE WITH THE SPECIFICATIONS. REINFORCING FOR PRE-CAST SECTIONS AS PER ASTM C-478.
7. ALL CAST IRON FRAME AND COVERS SHALL BE TRAFFIC BEARING. FRAME AND COVERS SHALL MEET OR EXCEED ALL REQUIREMENTS OF THE LATEST AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS DESIGNATION: M306 STANDARD SPECIFICATION FOR DRAINAGE, SEWER, UTILITY, AND RELATED CASTINGS. THEY SHALL HAVE AN ENVIRONMENTALLY SAFE, WATER-BASE ASPHALTIC COATING WHICH IS NON-TOXIC, NONFLAMMABLE, COLORLESS, AND DRIES TO A HARD BLACK FINISH. CAST-IRON FRAMES SHALL BE CAST INTO AND FLUSH WITH THE VAULT FLAT TOP SLAB SURFACE.
8. VAULT BEDDING, BACKFILL, AND COMPACTION SHALL BE IN ACCORDANCE WITH THE SAME REQUIREMENTS FOR MANHOLES IN THE SPECIFICATIONS AND STANDARD PLAN 803-01.
9. CONTRACTOR SHALL NEATLY FILL DOGHOUSE OPENING AROUND PIPES WITH BRICK AND APPROVED NON-SHRINK GROUT TO ASSURE A WATERTIGHT SEAL.

STATE OF LOUISIANA
ADAM M. SMITH
License No. 33278
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING
MAY 24, 2018

| STANDARD PLAN NO. | DATED | SHEET NO. |
|---|---|---|
| 804-01 | MAY 24, 2018 | 2 OF 3 |

FORCE MAIN DETAILS

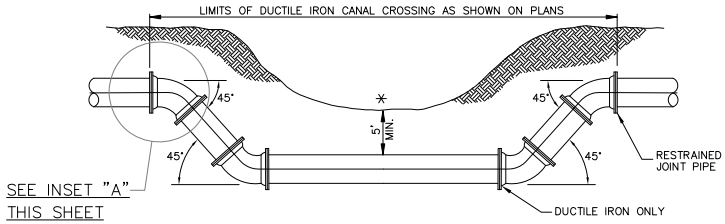
| DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|
| | | |

ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS
CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE

| DESIGNED | DRAWN | CHECKED | APPROVED |
|---|---|---|---|
| J. CRAIN | S. CORTEZ | R. LAMBERT | A. SMITH |

804-01

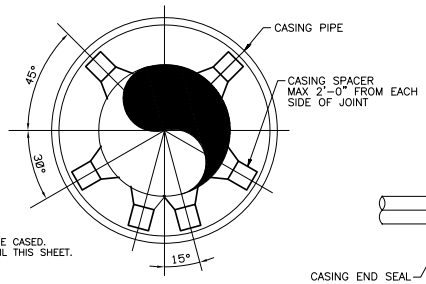
| PROJECT NO. | SHEET |
|---|---|
| | 115 |




TYPICAL CANAL &/OR UTILITY CROSSING

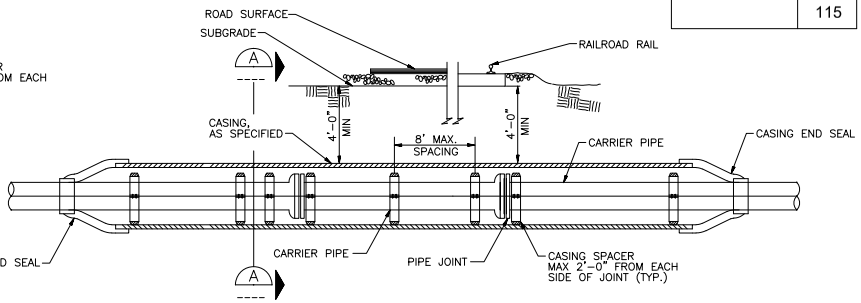
N.T.S.

* IF COVER IS LESS THAN 5', THE PIPE SHOULD BE CASED. REFER TO THE JACKED AND BORED CASING DETAIL THIS SHEET.



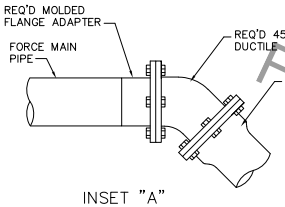

SECTION A

NTS




JACKED AND BORED CASING DETAIL

N.T.S.

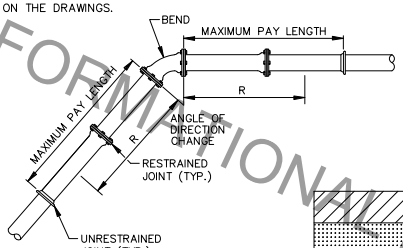



INSET "A"

DUCTILE IRON PIPE TO POLYETHYLENE PIPE CONNECTION

RESTRAINED JOINT NOTES:

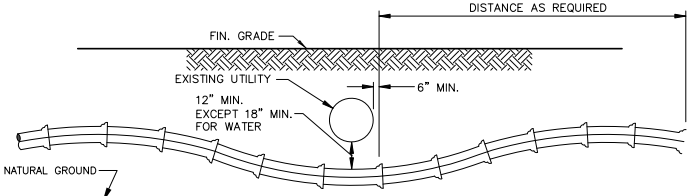
1. RESTRAINED JOINT PIPE SHALL BE USED AT ALL BENDS.
2. THE REQUIRED LENGTH OF RESTRAINED PIPE "R" SHALL BE AS SHOWN ON THE DRAWINGS.




FORCE MAIN BENDS

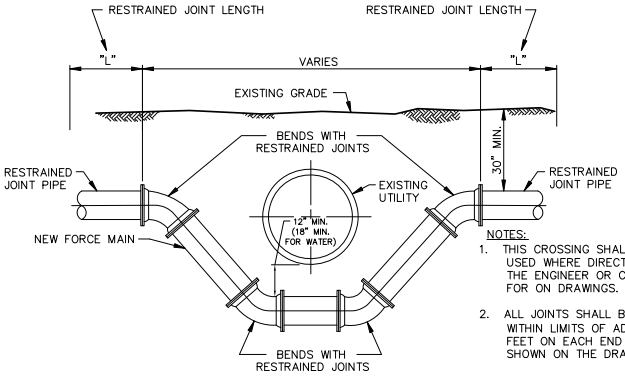
N.T.S.

CONSTRUCT UNIFORM PIPE DEFLECTION – NOT TO EXCEED 75% OF MANUFACTURER RECOMMENDED MAXIMUM DEFLECTION PER PIPE JOINT.




DEFLECTION TYPE UTILITY CROSSING

N.T.S.

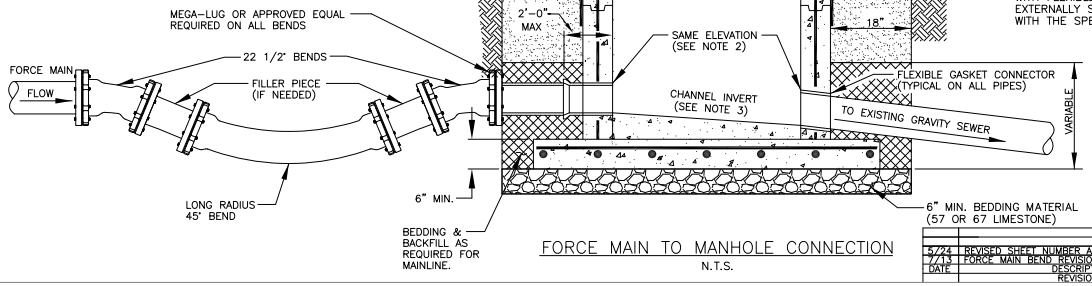



NOTES:

1. THIS CROSSING SHALL BE USED WHERE DIRECTED BY THE ENGINEER OR CALLED FOR ON DRAWINGS.
2. ALL JOINTS SHALL BE RESTRAINED WITHIN LIMITS OF ADJUSTMENT, PLUS "L" FEET ON EACH END OF ADJUSTMENT, AS SHOWN ON THE DRAWINGS.

TYPICAL FORCE MAIN ADJUSTMENT

N.T.S.




FORCE MAIN TO MANHOLE CONNECTION

N.T.S.

NOTES:

1. COAT INTERIOR OF MANHOLE WITH APPROVED EPOXY COATING PER SPECIFICATION SECTION 822.
2. ELEVATION OF FORCE MAIN CROWN SHALL BE AT SAME ELEVATION AS THE GRAVITY SEWER CROWN.
3. PROVIDE SMOOTH CHANNEL FROM FORCE MAIN TO GRAVITY SEWER.
4. MANHOLE SECTIONS SHALL BE JOINED TOGETHER WITH FLEXIBLE WATERTIGHT RUBBER GASKETS AND EXTERNALLY SEALED AT THE JOINTS IN ACCORDANCE WITH THE SPECIFICATIONS.

STATE OF LOUISIANA
ADAM M. SMITH
License No. 33278
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING

MAY 24, 2018

| DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|
| 5/24 | REVISED SHEET NUMBER AND TITLE | A.M.S. |
| 7/13 | FORCE MAIN BEND REVISION | A.S. |

| STANDARD PLAN NO. | DATED | SHEET NO. |
|---|---|---|
| 804–01 | AUGUST 1, 2011 | 3 OF 3 |

FORCE MAIN DETAILS

ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS
CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE

| DESIGNED | DRAWN | CHECKED | APPROVED |
|---|---|---|---|
| A. SCHULZE | G. VANNICE | R. WRIGHT | A. SMITH |

804–01

ATTACHMENT A

| GATES | | | | |
|---|---|---|---|---|
| WIDTH OF GATE SINGLE OR ONE LEAF OR DOUBLE GATE | GATE FRAME | | GATE POST | |
| | O.D.(IN.) | LBS/FT. | O.D.(IN.) | LBS/FT. |
| 13' MAXIMUM | 1.90 | 2.71 | 4.00 | 9.10 |
| 13' TO 18' | 1.90 | 2.71 | 6.625 | 18.97 |
| OVER 18' | 1.90 | 2.71 | 8.625 | 24.70 |
| | | | | |

The Contractor may substitute the following fencing materials in lieu of those materials specified:

Chain link fence posts, rails, braces and gate frame materials may be round pipe manufactured from steel conforming to ASTM A-569, cold rolled, electric welded and externally triple coated with a minimum of 0.9 ounce per square foot of high grade slab zinc conforming to ASTM B-6; a minimum of 15.0 micrograms of chromate conversion coating per square inch, and an electrostatically applied thermoplastic clear polyurethane acrylic coating having a minimum dry film thickness of not less than 0.3 mil. The interior surface shall also be protected by an application of zinc rich based organic coating (having a minimum zinc powder loading of not less than 87.0 percent by weight) to be applied after fabrication.

Posts, rails, braces and gate frame materials shall conform to the following schedule:

| USE | PIPE SIZE | MINIMUM WEIGHT |
|---|---|---|
| End, Corner, Slope and Pull Posts: | 3.50 Inches | 5.71 lbs. per L.F. |
| Line Posts | 3.00 Inches | 4.64 lbs. per L.F. |
| Gate Posts: | 3.50 Inches | 5.71 lbs. per L.F. |
| Top Rails and Braces: | 1.625 Inches | 1.84 lbs. per L.F. |
| Frame and Stiffner for gates: | 2.00 Inches | 2.28 lbs. per L.F. |

## GENERAL NOTES:

The fence installation and details shown are typical and may vary in accordance with different manufacturers, provided that they meet the Standard Specifications.

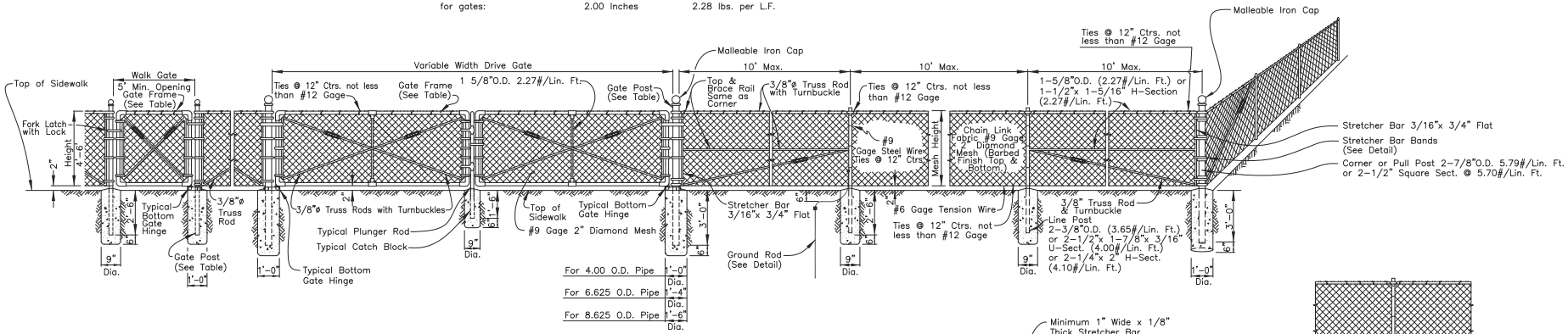
Any Galvanized Fence Item Which has its Surface Abraded Shall Be Painted With Rust-Oleum "Galvinoleum," or an Approved Equal.

Electrical grounding devices are to be installed in accordance with Subsection 902-3 of the Standard Specifications.

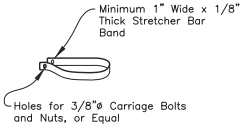
All bolts to be upset to discourage vandalism.

| PROJECT NO. | SHEET |
|---|---|
| | 116 |

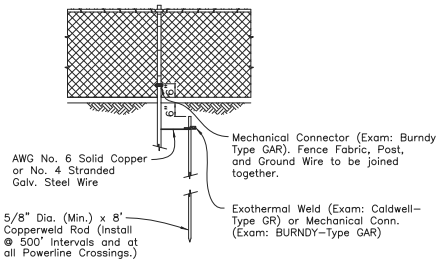
**NOTE:**
Lateral Fence to be same Construction As Frontage Fence.



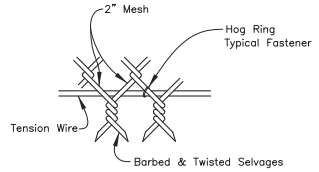

CHAIN LINK FENCE
N.T.S.



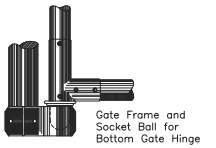

TYPICAL STRETCHER BAR BAND



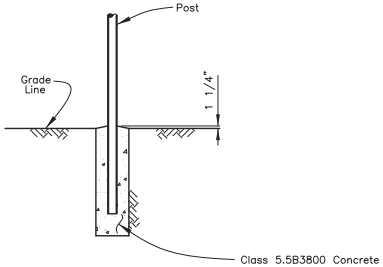

DETAIL OF GROUND WIRES FOR FENCE



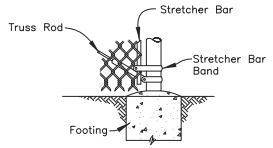

FABRIC & TENSION WIRE DETAIL
Tension Wire Req'd. on Bottom Only




TYPICAL BOTTOM GATE HINGE




DETAIL OF POST FOOTING




TERMINAL POST DETAIL

THOMAS A. STEPHENS License No. 15437 PROFESSIONAL ENGINEER IN CIVIL ENGINEERING STATE OF LOUISIANA
2/14/2012

| DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|
| | | |

| STANDARD PLAN NO. | DATED | SHEET NO. |
|---|---|---|
| 902-02 | February 6, 2008 | 1 OF 1 |

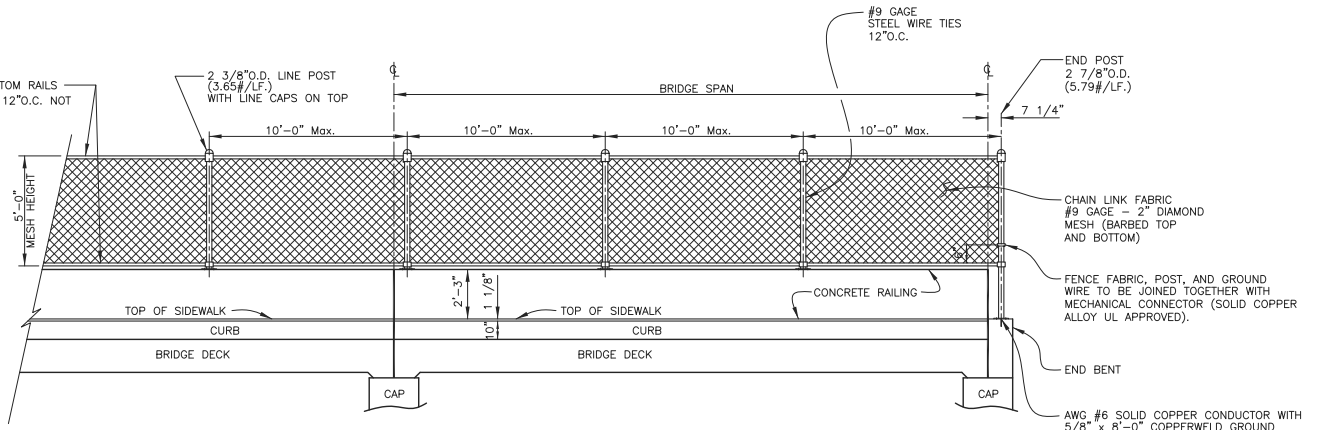
CHAIN LINK FENCE & GATES
4' - 5' - 6' HEIGHT

ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS
CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE

| DESIGNED | DRAWN | CHECKED | APPROVED |
|---|---|---|---|
| R. ELLIS | G. VANNICE | R. ELLIS | T. STEPHENS |

902-02

| PROJECT NO. | SHEET |
|---|---|
| | 117 |

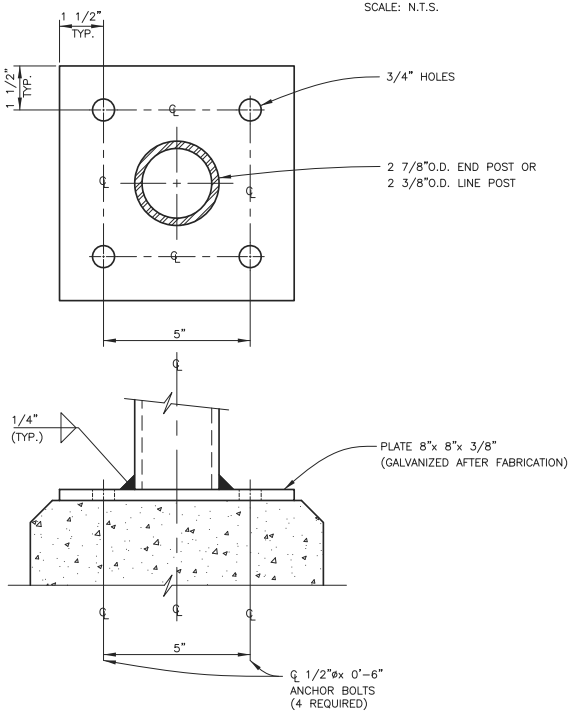



ELEVATION OF RAILING

SCALE: N.T.S.

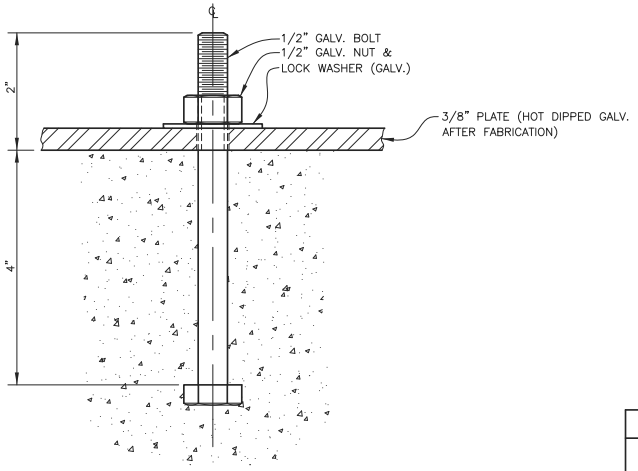
## GENERAL NOTES:

1. BRIDGE FENCING SHALL BE PAID FOR UNDER ITEM 9020115 PER LIN. FT. AND SHALL INCLUDE ALL LABOR, EQUIPMENT, AND NEW MATERIALS NECESSARY TO COMPLETE FENCING AND TIE INTO EXIST. FENCING ALONG CHANNEL.
2. ANY DAMAGE TO THE STRUCTURE DUE TO INSTALLATION OF FENCING WILL BE REPAIRED TO THE SATISFACTION OF THE ENGINEER. (NO DIRECT PAYMENT)
3. ANY GALVANIZED FENCE ITEM WHICH HAS ITS SURFACE ABRADED SHALL BE PAINTED WITH RUST-OLEUM "GALVINOLEUM," OR AN APPROVED EQUAL.
4. ALL METAL TO BE HOT - DIPPED GALVANIZED.




DETAIL SHOWING RAILING BASE PLATE

SCALE: HALF




ANCHOR BOLT DETAIL

ANCHOR BOLT AND FITTINGS TO BE INCLUDED IN PRICE BID FOR 5-FT. CHAIN LINK FENCE (ON-STRUCTURE) - ITEM NO. 9020115

SCALE: FULL

THOMAS A. STEPHENS
License No. 19417
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING
2/12/2015

| STANDARD PLAN NO. | DATED | SHEET NO. |
|---|---|---|
| 902-05 | February 8, 2008 | 1 OF 1 |

# 5-FOOT CHAIN LINK FENCE ON STRUCTURE

ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS
CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE

| DESIGNED | DRAWN | CHECKED | APPROVED |
|---|---|---|---|
| H. PYLANT | G. VANNICE | R. ELLIS | T. STEPHENS |

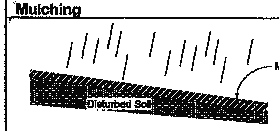
| DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|
| | | |

902-05

ENGINEERING AGADS14 STDJAY FORM G.V.

| PROJECT NO. | SHEET |
|---|---|
| | 118 |

## Mulching




**Applications:** Perimeter Control; **Slope Protection**; Sediment Trapping; Channel Protection; **Temporary Stabilization**; Permanent Stabilization; Waste Management; Housekeeping Practices

**Targeted Constituents:** ● Sediment; ○ Nutrients; ○ Toxic Materials; ○ Oil & Grease; ○ Floatable Materials; ○ Other Construction Wastes

**Implementation Requirements:** ● Capital Costs; ⊖ Maintenance; ○ Training; ○ Suitability for Slopes >5%

**Legend:** ● Significant Impact; ⊖ Medium Impact; ○ Low Impact; ? Unknown or Questionable Impact

**BMP** 1

City of Baton Rouge Parish of East Baton Rouge

Department of Public Works

**DESCRIPTION**
Mulching is the application of a layer of chopped straw, hay or other material which is spread uniformly over barren areas to reduce the effects of erosion from rainfall. Types of mulch include organic materials, straw, wood chips, bark or other fibers. Mulch also comes in prepackaged forms, using straw, hay or other material with organic and inorganic binding systems.

**PRIMARY USE**
Mulch is used to temporarily and/or permanently stabilize clear or freshly seeded areas. It protects the soil from erosion and moisture loss by lessening the effects of wind, water, and sunlight. It also decreases the velocity of sheet flow, thereby reducing the volume of sediment-laden water flow leaving the mulched area.

**APPLICATIONS**
Mulch may be used on any construction-related disturbed area for surface protection including:
- Freshly seeded or planted areas,
- Areas at risk due to the time period being unsuitable for growing vegetation,
- Areas that are not conducive to seeding or planting.

**DESIGN CRITERIA**
Mulch may be used by itself or in combination with netting or other anchors to promote soil stabilization.

Several manufacturers provide an organic mulch with an attached netting to simplify installation. Installation should adhere to manufacturer's specifications and requirements.

- Choice of mulch depends largely on slope, climate, and soil type in addition to availability of different materials. Straw and hay are the recommended choices due to their availability and biodegradability.
- Mulch should be applied in an even and uniform manner where concentrated water flow is negligible.

## Erosion Control Mats


**Applications:** Perimeter Control; **Slope Protection**; **Sediment Trapping**; Channel Protection; **Temporary Stabilization**; **Permanent Stabilization**; Waste Management; Housekeeping Practices

**Targeted Constituents:** ● Sediment; ○ Nutrients; ○ Toxic Materials; ○ Oil & Grease; ○ Floatable Materials; ○ Other Construction Wastes

**Implementation Requirements:** ● Capital Costs; ⊖ Maintenance; ○ Training; ● Suitability for Slopes >5%

**Legend:** ● Significant Impact; ⊖ Medium Impact; ○ Low Impact; ? Unknown or Questionable Impact

**BMP** 2

City of Baton Rouge Parish of East Baton Rouge

Department of Public Works

**DESCRIPTION**
An erosion control mat (ECM) is a geomembrane or biodegradable fabric placed over disturbed areas to limit the effects of erosion due to rainfall impact and runoff across barren soil. Erosion control mats are manufactured by a wide variety of vendors addressing a wide variety of conditions such as vegetation establishment, protection from heavy rainfall, and high velocity flow. Types of matting include organic (jute, straw) and synthetic (plastic and glass fiber) materials.

**PRIMARY USE**
Mats can provide both temporary and/or permanent stabilization for disturbed soil or barren areas. It is used for difficult to stabilize areas such as steep slopes, temporary or permanent drainage swales, embankments or high traffic (pedestrian) areas. Some mats are reusable, reducing the initial cost of the installation.

**APPLICATIONS**
Mats can be used on any construction-related disturbed area, but are particularly effective for erosion control of fine grained soils, and on short, steep slopes (such as stream banks) where erosion is high and growth of vegetation is slow.

**DESIGN CRITERIA**
A mat may be used by itself or in combination with netting or other anchors to promote soil stabilization. Choice of matting depends largely on slope, climate, soil type, and durability. Mats are usually installed according to the manufacturer's recommended guidelines. After appropriate installation, the matting should be checked for uniform contact with the soil, security of the top joints, and fastness of the staples with the ground.

Manufacturers information will verify acceptable applications for a particular product.

**LIMITATIONS**
Although matting is highly effective in controlling erosion, it may be less cost-effective than other BMPs for erosion control and it may require a

## Vegetation


**Applications:** Perimeter Control; **Slope Protection**; Sediment Trapping; **Channel Protection**; **Temporary Stabilization**; **Permanent Stabilization**; Waste Management; Housekeeping Practices

**Targeted Constituents:** ● Sediment; ○ Nutrients; ○ Toxic Materials; ○ Oil & Grease; ○ Floatable Materials; ○ Other Construction Wastes

**Implementation Requirements:** ⊖ Capital Costs; ⊖ Maintenance; ○ Training; ● Suitability for Slopes >5%

**Legend:** ● Significant Impact; ⊖ Medium Impact; ○ Low Impact; ? Unknown or Questionable Impact

**BMP** 3

City of Baton Rouge Parish of East Baton Rouge

Department of Public Works

**DESCRIPTION**
Vegetation, as a Best Management Practice, is the sowing of annual grasses, small grains or legumes to provide interim and permanent vegetative stabilization for disturbed areas. Unless otherwise specified, Bermuda Grass is to be used for permanent seeding. Temporary stabilization may be achieved during winter by seeding with Rye Grass.

**PRIMARY USE**
Vegetation is used as a temporary or permanent stabilization technique for areas disturbed by construction but not protected by pavement, building or other structures. As a temporary control, vegetation is used to stabilize stockpiles and borrow areas which are inactive for long periods of time. As a permanent control, grasses and other vegetation provide good protection for the soil along with some filtering for overland runoff. Subjected to acceptable runoff velocities, vegetation can provide a good method of permanent storm water management as well as a visual amenity to the site.

Other BMPs may be required to assist in the establishment of vegetation. These other techniques include erosion control matting, swales and dikes to direct flow around newly seeded areas and proper grading to limit runoff velocities during construction.

**APPLICATIONS**
Vegetative techniques can and should apply to every construction project with few exceptions. Vegetation effectively reduces erosion in swales, stock piles, berms, mild to medium slopes and along roadways. Vegetative strips can provide some protection when used as a perimeter control for utility and site development construction.

In many cases, the initial cost of temporary seeding may be high compared to tarps or covers for stockpiles or other barren areas subject to erosion yet inactive. This initial cost should be weighed with the amount of time the area is to remain inactive, since maintenance cost for vegetated areas is much less than most structural controls.

## Mulching

- Application of straw or hay mulch should be approximately 2 tons dry per acre spread uniformly across the disturbed area. Other material should be applied such that 25% of the soil is visible through the mulch.
- For areas using straw mulch and the slope is greater than 5-8%, anchoring of the mulch with a Crimper Tool is required.

**LIMITATIONS**
Mulches are subject to removal by wind or water under severe climatic conditions. Mulches lower the soil temperature which may result in longer seed germination periods.

**MAINTENANCE REQUIREMENTS**
Mulched areas must be inspected on a weekly basis, and after significant (>0.5 inch) rainfall, for thin or bare spots caused by natural decomposition or weather related events. Mulch in high traffic areas should be replaced on a regular basis to maintain uniform protection.

**BMP** 1

Department of Public Works

## Erosion Control Mats

contractor with considerable mat installation experience for installation.

**MAINTENANCE REQUIREMENTS**
Matted areas must be inspected on a weekly basis, and after significant (>0.5 inch) rainfall, for bare spots caused by weather related events. Missing or loosened matting must be replaced or re-anchored.

**BMP** 2

Department of Public Works

## Vegetation

**DESIGN CRITERIA**
*Surface Preparation*
- Interim or final grading must be completed prior to seeding, minimizing all steep slopes.
- Install all necessary erosion structures such as dikes, swales, diversions, etc., prior to seeding.
- Grades on borrow slopes steeper than 3:1 on the contour line before seeding.
- Provide 4-6 inches of topsoil over available soils.
- Seed-bed should be well pulverized, loose and uniform.

*Plant Selection, Fertilization and Seeding*
- Use only high quality, USDA certified seed.
- For permanent vegetative cover during the period from March to August (inclusive) use hulled Bermuda Grass applied at 10 - 12 pounds per acre.
- For permanent vegetative cover during the period from September to February (inclusive) use unhulled Bermuda Grass applied at 15 - 20 pounds per acre.
- For temporary stabilization on disturbed areas or stockpiles, use Rye Grass seed applied at 40 - 50 pounds per acre.
- Fertilizer shall be applied according to the manufacturer's recommendation with proper spreader equipment. Typical application rate for 10-10-10 grade fertilizer is 700-1000 pounds per acre. DO NOT OVER APPLY FERTILIZER.
- If hydro-seeding is used, do not mix seed and fertilizer more than 30 minutes before application.
- Evenly apply seed using cyclone seeder, seed drill, cultipacker or hydroseeder.
- Provide adequate water to aid in establishment of vegetation.
- Use appropriate mulching techniques where necessary.

**LIMITATIONS**
Vegetation is not appropriate for areas subjected to heavy pedestrian or vehicular traffic. As a temporary technique, vegetation may be costly when compared to other techniques.
Vegetation is not appropriate for rock, gravel or coarse grained soils unless 4 to 6 inches of topsoil is applied.

**MAINTENANCE REQUIREMENTS**
Protect newly seeded areas from excessive runoff and traffic until vegetation is established (mulching may be necessary). A watering and fertilizing schedule will be required as part of the SWPPP to assist in the establishment of the vegetation.

**BMP** 3

Department of Public Works

THOMAS A. STEPHENS
Licensed No. 19417
PROFESSIONAL ENGINEER
IN
STATE OF LOUISIANA
3/12/2013

| STANDARD PLAN NO. | DATED | SHEET NO. |
|---|---|---|
| 903–01 | FEBRUARY 25, 2008 | 1 OF 11 |

STORM WATER POLLUTION PREVENTION PLAN
BEST MANAGEMENT PRACTICES

ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS
CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE

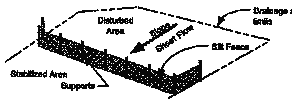
| DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|
| | | |

| DESIGNED | DRAWN | CHECKED | APPROVED |
|---|---|---|---|
| G. CHENG | G. VANNICE | G. CHENG | T. STEPHENS |

903–01

| PROJECT NO. | SHEET |
|---|---|
| | 119 |

## Silt Fence




**Applications**
- Perimeter Control
- Slope Protection
- Sediment Trapping
- Channel Protection
- Temporary Stabilization
- Permanent Stabilization
- Waste Management
- Housekeeping Practices

**Targeted Constituents**
- ● Sediment
- ○ Nutrients, Toxic Materials
- ○ Oil & Grease
- ⊖ Floatable Materials
- ○ Other Construction Wastes

**Implementation Requirements**
- ⊖ Capital Costs
- ● Maintenance
- ○ Training
- ⊖ Suitability for Slopes >5%

**Legend**
- ● Significant Impact
- ⊖ Medium Impact
- ○ Low Impact
- ? Unknown or Questionable Impact

**BMP**
4

City of Baton Rouge
Parish of
East Baton Rouge

Department of Public Works

**DESCRIPTION**
A silt fence consists of geotextile fabric supported by posts resting on other bracing stretched between either wooden or metal posts with the lower edge of the fabric securely embedded in the soil. The fence is typically located downstream of disturbed areas to intercept runoff in the form of sheet flow. Silt fence provides both filtration and dam for sedimentation to reduce sediment and it reduces the velocity of the runoff. Properly designed silt fence is economical since it can be re-located during construction and re-used on other projects.

**PRIMARY USE**
Silt fence is normally used as perimeter control located downstream of disturbed areas. It is only feasible for non-concentrated, sheet flow conditions.

**APPLICATIONS**
Silt fence is an economical means to treat overland, non-concentrated flows for all types of projects. Silt fences are used as perimeter control devices for both site developments and linear (roadway) type projects. They are most effective with coarse to silty soil types. Due to the potential of clogging, silt fence should not be used with clay soil types.

In order to reduce the length of silt fence, it should be placed adjacent to the down slope side of the construction activities.

**DESIGN CRITERIA**
- Fences are to be constructed along a line of constant elevation (along a contour line) where possible.
- Maximum slope adjacent to the fence is 1:1.
- Maximum distance of flow to silt fence should be 200 feet or less.
- Maximum concentrated flow to silt fence shall be 1 CFS per 25 feet of fence.
- If 50% or less of soil, by weight, passes the U.S. Standard sieve No. 200, select the equivalent opening size (E.O.S.) to retain 85% of the soil.
- Maximum equivalent opening size shall be 70 (#70 sieve).

**LIMITATIONS**
Minor ponding will likely occur at the upstream side of the silt fence resulting in minor localized flooding.

Fences which are constructed in swales or low areas subject to concentrated flow may be overlapped resulting in failure of the filter fence. Silt fences subject to areas of concentrated flow (watersheds with flows > 1 cfs) are not acceptable.

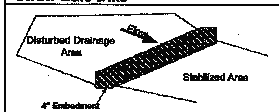
Silt fence can interfere with construction operations, therefore planning of access routes onto the site is critical.

Silt fence can fail structurally under heavy storm flows, creating maintenance problems and reducing the effectiveness of the system.

**MAINTENANCE REQUIREMENTS**
Inspections should be made on a weekly basis, especially after large storm events. If the fabric becomes clogged, it should be cleaned or if necessary, replaced.

Sediment should be removed when it reaches approximately one-half the height of the fence.

## Straw Bale Dike




**Applications**
- Perimeter Control
- Slope Protection
- Sediment Trapping
- Channel Protection
- Temporary Stabilization
- Permanent Stabilization
- Waste Management
- Housekeeping Practices

**Targeted Constituents**
- ⊖ Sediment
- ○ Nutrients, Toxic Materials
- ○ Oil & Grease
- ⊖ Floatable Materials
- ○ Other Construction Wastes

**Implementation Requirements**
- ⊖ Capital Costs
- ● Maintenance
- ○ Training
- ⊖ Suitability for Slopes >5%

**Legend**
- ● Significant Impact
- ⊖ Medium Impact
- ○ Low Impact
- ? Unknown or Questionable Impact

**BMP**
5

City of Baton Rouge
Parish of
East Baton Rouge

Department of Public Works

**DESCRIPTION**
A straw bale dike is a temporary barrier constructed of straw bales anchored with wood posts, that is used to intercept sediment-laden runoff generated by small disturbed areas. The straw bales can serve as both a filtration device and a containment device to treat and redirect flow. Bales can consist of hay or straw in which straw is defined as best quality straw from wheat, oats or barley. Bale of weed and grass seed and hay is defined as straw which includes weed and grass seed.

**PRIMARY USE**
A straw bale dike is used to trap sediment-laden storm runoff from small drainage areas with relatively level grades, allowing for reduction of velocity thereby causing sediment to settle out.

**APPLICATIONS**
Straw bale dikes are used to treat flow after it leaves a disturbed area on a relatively small (<1 acre) site. Due to the limited life of the straw bale, it is cost effective for small projects of a short duration. The limited weight and strength of the straw bale makes it suitable for small, flat (< 2 percent slope) contributing drainage areas. Due to the problems with straw degradation and the lack of uniform quality in straw bales, their use is discouraged except for small residential applications.

Straw bales can also be used as check dams (see Check Dam BMP 8-7) for small watercourses such as interceptor swales and borrow ditches. Due to the problems in securely anchoring the bales, only small watercourses can effectively use straw bale check dams.

**DESIGN CRITERIA**
- Straw bale dikes are to be constructed along a line of constant elevation (along a contour line).
- Straw bale dikes are suitable only for treating sheet flows across grades of 2% or flatter.
- Maximum contributing drainage area shall be 0.25 acre per 100 linear feet of dike.
- Maximum distance of flow to dike should be 100 feet or less.

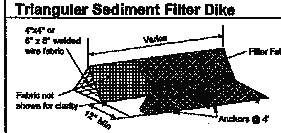
**LIMITATIONS**
Due to a short effective life caused by biological decomposition, straw bales must be replaced after a period of no more than 3 months. During the wet and warm seasons, however, they must be replaced more frequently as is determined by periodic inspections for structural integrity.

Straw bale dikes are not recommended for use with concentrated flows of any kind except for small check flows in which they can serve as a check dam.

The effectiveness of straw bales in reducing sediment is very limited. Improperly maintained, straw bales can have a negative impact on the water quality of the runoff.

**MAINTENANCE REQUIREMENTS**
Straw bales shall be replaced if there are signs of degradation such as straw located downstream from the bales, structural deficiencies due to rotting straw in the bale or other signs of deterioration. Sediment should be removed from behind the bales when it reaches a depth of approximately 6 inches.

## Triangular Sediment Filter Dike




**Applications**
- Perimeter Control
- Slope Protection
- Sediment Trapping
- Channel Protection
- Temporary Stabilization
- Permanent Stabilization
- Waste Management
- Housekeeping Practices

**Targeted Constituents**
- ● Sediment
- ○ Nutrients, Toxic Materials
- ○ Oil & Grease
- ⊖ Floatable Materials
- ○ Other Construction Wastes

**Implementation Requirements**
- ⊖ Capital Costs
- ● Maintenance
- ○ Training
- ⊖ Suitability for Slopes >5%

**Legend**
- ● Significant Impact
- ⊖ Medium Impact
- ○ Low Impact
- ? Unknown or Questionable Impact

**BMP**
6

City of Baton Rouge
Parish of
East Baton Rouge

Department of Public Works

**DESCRIPTION**
A Triangular Sediment Filter Dike is a self contained silt fence consisting of filter fabric wrapped around welded wire fabric shaped into a triangular cross section. While similar in use to a silt fence, the dike is reusable, sturdier, transportable and can be used on paved areas or in situations where it is impractical to install embedded posts for support.

**PRIMARY USE**
Triangular filter dikes are used in place of silt fence, treating sediment flow at the perimeter of construction areas and at the perimeter of the site. Also, the dikes can serve as stream protection devices by preventing sediment from entering the streams or as check dams in small swales.

Triangular sediment filter dikes are especially useful for construction areas surrounded by pavement, such as roadways, parkways, campus, etc., where silt fence or hay bale installation is [illegible]. Since they can be anchored without penetration, pavement damage can be minimized.

**APPLICATIONS**
Triangular dikes are used to provide perimeter control by detaining sediment on a disturbed site with drainage that would otherwise flow onto adjacent areas. Triangular dikes also serve as sediment trapping devices when used in areas of sheet flow across disturbed areas or are placed along stream banks to prevent sediment-laden sheet flow from entering the stream. The dikes can be subjected to more concentrated flows and a higher flowrate than silt fence.

**DESIGN CRITERIA**
- Dikes are to be installed along a line of constant elevation (along a contour line).
- Maximum slope perpendicular to the dike is 1:1.
- Maximum drainage flow to the dike shall be 11 CFS per 100 linear feet of dike.
- Maximum distance of flow to dike should be 200 feet or less.
- Maximum concentrated flow to dike shall be 1 CFS.

**LIMITATIONS**
Ponding will likely occur directly adjacent to the dike which may possibly cause flooding.

Triangular sediment filter dikes are not effective for conditions which include substantial concentrated flows or when they are not constructed along a contour line due to the potential for flow concentration and overtopping.

**MAINTENANCE REQUIREMENTS**
Inspections should be made on a weekly basis, especially after large (> 0.5 inches) storm events. If the fabric becomes clogged, it should be cleaned or if necessary, replaced.

Sediment should be removed when it reaches approximately 6 inches in depth. In addition, inspections should be made on a regular basis to check the structural integrity of the dike. If structural deficiencies are found, the dike should be immediately repaired or replaced.

As with silt fence, integrity of the filter fabric is important to the effectiveness of the dike. Overlap between dike sections must be checked on a regular basis and repaired if deficient.

## Silt Fence

- Minimum equivalent opening size shall be 100 (#100 sieve).
- If 50% or more of soil, by weight, passes the U.S. Standard sieve No. 200, silt fences shall not be used due to potential clogging.
- Sufficient room for the operation of sediment removal equipment shall be provided between the silt fence and other obstructions in order to properly maintain the fence.
- The ends of the fence shall be turned upstream to prevent bypass of stormwater.

**LIMITATIONS**
Minor ponding will likely occur at the upstream side of the silt fence resulting in minor localized flooding.

Fences which are constructed in swales or low areas subject to concentrated flow may be overlapped resulting in failure of the filter fence. Silt fences subject to areas of concentrated flow (watersheds with flows > 1 cfs) are not acceptable.

Silt fence can interfere with construction operations, therefore planning of access routes onto the site is critical.

Silt fence can fail structurally under heavy storm flows, creating maintenance problems and reducing the effectiveness of the system.

**MAINTENANCE REQUIREMENTS**
Inspections should be made on a weekly basis, especially after large storm events. If the fabric becomes clogged, it should be cleaned or if necessary, replaced.

Sediment should be removed when it reaches approximately one-half the height of the fence.

**BMP**
4

Department of Public Works

## Straw Bale Dike

- Dimensions for individual bales shall be 30 inches minimum length, 18 inches minimum height, 24 inches minimum width and shall weigh no less than 50 pounds when dry.
- Each straw bale shall be placed into an excavated trench having a depth of 4 inches and a width just wide enough to accommodate the bales themselves.
- Straw bales shall be installed in such a way that there is no space between bales

- Individual bales shall be held in place by at least two wood stakes driven a minimum distance of 4 inches below the 4" excavated trench to undisturbed ground, with the first stake driven at an angle toward the previously installed bale.
- The ends of the dike shall be turned upgrade to prevent bypass of stormwater.
- Place bales on sides such that bindings are not buried.

**LIMITATIONS**
Due to a short effective life caused by biological decomposition, straw bales must be replaced after a period of no more than 3 months. During the wet and warm seasons, however, they must be replaced more frequently as is determined by periodic inspections for structural integrity.

Straw bale dikes are not recommended for use with concentrated flows of any kind except for small check flows in which they can serve as a check dam.

The effectiveness of straw bales in reducing sediment is very limited. Improperly maintained, straw bales can have a negative impact on the water quality of the runoff.

**MAINTENANCE REQUIREMENTS**
Straw bales shall be replaced if there are signs of degradation such as straw located downstream from the bales, structural deficiencies due to rotting straw in the bale or other signs of deterioration. Sediment should be removed from behind the bales when it reaches a depth of approximately 6 inches.

**BMP**
5

Department of Public Works

## Triangular Sediment Filter Dike

- If 50% or less of soil, by weight, passes the U.S. Standard sieve No. 200, select the equivalent opening size (E.O.S.) to retain 85% of the soil.
- Maximum equivalent opening size shall be 70 (#70 sieve).
- Minimum equivalent opening size shall be 100 (#100 sieve).
- If 85% or more of soil, by weight, passes the U.S. Standard sieve No. 200, triangular sediment dike shall not be used due to clogging.
- Sufficient room for the operation of sediment removal equipment shall be provided between the dike and other obstructions in order to properly remove sediment.
- The ends of the dike shall be turned upgrade to prevent bypass of stormwater.

**LIMITATIONS**
Ponding will likely occur directly adjacent to the dike which may possibly cause flooding.

Triangular sediment filter dikes are not effective for conditions which include substantial concentrated flows or when they are not constructed along a contour line due to the potential for flow concentration and overtopping.

**MAINTENANCE REQUIREMENTS**
Inspections should be made on a weekly basis, especially after large (> 0.5 inches) storm events. If the fabric becomes clogged, it should be cleaned or if necessary, replaced.

Sediment should be removed when it reaches approximately 6 inches in depth. In addition, inspections should be made on a regular basis to check the structural integrity of the dike. If structural deficiencies are found, the dike should be immediately repaired or replaced.

As with silt fence, integrity of the filter fabric is important to the effectiveness of the dike. Overlap between dike sections must be checked on a regular basis and repaired if deficient.

**BMP**
6

Department of Public Works

| DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|
| | | |

THOMAS A. STEPHENS
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PROFESSIONAL ENGINEER
IN
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3/12/2013

| STANDARD PLAN NO. | DATED | SHEET NO. |
|---|---|---|
| 903-01 | FEBRUARY 25, 2008 | 2 OF 11 |

STORM WATER POLLUTION PREVENTION PLAN
BEST MANAGEMENT PRACTICES

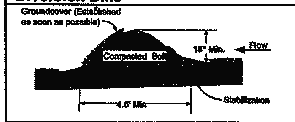
ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS
CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE

| DESIGNED | DRAWN | CHECKED | APPROVED |
|---|---|---|---|
| G. CHENG | G. VANNICE | G. CHENG | T. STEPHENS |

903-01

| PROJECT NO. | SHEET |
|---|---|
| | 120 |

## Diversion Dike




**DESCRIPTION**
A diversion dike is a compacted soil mound which redirects runoff to a desired location. The dike is typically stabilized with natural grass for low velocities or with stone or erosion control mats for higher velocities.

**PRIMARY USE**
The diversion dike is normally used to intercept offsite flow upstream of the construction area and direct the flow around the disturbed soils. It can also be used downstream of the construction area to direct flow into a sediment restriction device such as a sediment basin or protected inlet. The diversion dike serves the same purpose and, based on the topography of the site, can be used in combination with an interceptor swale.

**APPLICATIONS**
By intercepting runoff before it has the chance to cause erosion, diversion dikes are very effective in reducing erosion at a reasonable cost. They are applicable to a large variety of projects including site developments and linear projects such as roadways and pipeline construction. Diversion dikes are normally used as perimeter controls for construction sites with large amounts of offsite flow from neighboring properties. Used in combination with swales, the diversion dike can be quickly installed with a minimum of equipment and cost, using the same excavation as the dike. No sediment removal technique is required if the dike is properly stabilized and the runoff is intercepted prior to crossing disturbed areas.

Significant savings in structural controls can be realized by using diversion dikes to direct sheet flow to a central area such as a sediment basin or other sediment reduction structure if the runoff crosses disturbed areas.

**DESIGN CRITERIA**
- The maximum contributing drainage area should be 10 acres or
- Maximum depth of flow at the dike shall be 1 foot for 2 year design storm.
- The maximum width of the flow at the dike shall be 20 feet.
- Side slopes of the diversion dike shall be 3:1 or flatter.

**Applications**
- Perimeter Control
- Slope Protection
- Sediment Trapping
- Channel Protection
- Temporary Stabilization
- Permanent Stabilization
- Waste Management
- Housekeeping Practices

**Targeted Constituents**
- ● Sediment
- ○ Nutrients Toxic Materials
- ○ Oil & Grease
- ● Floatable Materials
- ● Other Construction Wastes

**Implementation Requirements**
- ● Capital Costs
- ● Maintenance
- ○ Training
- ● Suitability for Slopes >5%

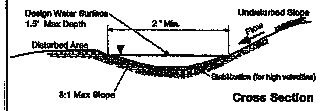
**Legend**
- ● Significant Impact
- ◐ Medium Impact
- ○ Low Impact
- ? Unknown or Questionable Impact

**BMP**
7

City of Baton Rouge Parish of East Baton Rouge

**Department of Public Works**

## Interceptor Swale



Cross Section

**DESCRIPTION**
An interceptor swale is a small v-shaped or parabolic channel which collects runoff and directs it to a desired location. It can either have a natural grass lining or depending on slope and design velocity, a protective lining of erosion matting, stone or concrete.

**PRIMARY USE**
The interceptor swale can either be used to direct sediment laden flow from disturbed areas into a controlled outlet or to direct "clean" runoff around disturbed areas. Since the swale is easy to install during early grading operations, it can serve as the first line of defense in reducing runoff across disturbed areas. As a method of reducing runoff across the disturbed construction area, it reduces the requirements of structural measures to capture sediment from runoff since the flow is reduced. By intercepting sediment laden flow downstream of the disturbed area, runoff can be directed into a sediment basin or other BMP for sedimentation as opposed to long runs of silt fence, straw bales or other filtration method.

Based on site topography, swales can be effectively used in combination with diversion dikes.

**APPLICATIONS**
Common applications for interceptor swales include roadway projects, site development projects with substantial offsite flow impacting the site and sites with a large area(s) of disturbance. It can be used in conjunction with diversion dikes to intercept flows. Temporary swales can be used throughout the project to direct flows away from staging, storage and loading areas along with specific areas of construction. Note that runoff which crosses disturbed areas or is directed into unstabilized swales must be routed into a treatment BMP such as a sediment basin.

Grass lined swales are an effective permanent stabilization technique. The grass effectively filters both sediment and other pollutants while reducing velocity.

**Applications**
- Perimeter Control
- Slope Protection
- Sediment Trapping
- Channel Protection
- Temporary Stabilization
- Permanent Stabilization
- Waste Management
- Housekeeping Practices

**Targeted Constituents**
- ● Sediment
- ○ Nutrients Toxic Materials
- ○ Oil & Grease
- ● Floatable Materials
- ● Other Construction Wastes

**Implementation Requirements**
- ● Capital Costs
- ● Maintenance
- ○ Training
- ● Suitability for Slopes >5%

**Legend**
- ● Significant Impact
- ◐ Medium Impact
- ○ Low Impact
- ? Unknown or Questionable Impact

**BMP**
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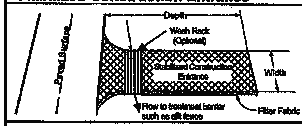
City of Baton Rouge Parish of East Baton Rouge

**Department of Public Works**

## Stabilized Construction Entrance




**DESCRIPTION**
A stabilized construction entrance consists of a pad consisting of gravel, crushed stone, recycled concrete or other rock like material on top of geotextile filter cloth to facilitate the wash down and removal of sediment and other debris from construction equipment prior to exiting the construction site. For added effectiveness, a wash rack area can be incorporated into the design to further reduce sediment tracking. For long term projects, cattle guards or other type of permanent rock system can be used in conjunction with a wash rack. This directly addresses the problem of silt and mud deposition in roadways used for construction site access.

**PRIMARY USE**
Stabilized construction entrances are used primarily for sites in which significant truck traffic occurs on a daily basis. It reduces the need to remove sediment from streets. If used properly, it also directs the majority of traffic to a single location, reducing the number and quantity of disturbed areas on the site and providing protection for other structural controls through traffic control.

**APPLICATIONS**
Stabilized construction entrances are a required part of the erosion control plan for all site developments larger than 5 acres and a recommended practice for all construction sites. It is not suitable for long, linear projects. If possible, small entrances should be incorporated into small lot construction due to the large percentage of disturbed area on the site and the high potential for offsite tracking of silt and mud.

**DESIGN CRITERIA**
- Stabilized construction entrances are to be constructed such that drainage across the entrance is directed to a swale/ditch, stabilized outlet on site with provisions for storage
- The entrance must be properly graded so that storm water is not allowed to leave the site and enter roadways.
- Minimum width of entrance shall be 15 feet, but in no case shall the width be less than that of the entry way to be used.

**Applications**
- Perimeter Control
- Slope Protection
- Sediment Trapping
- Channel Protection
- Temporary Stabilization
- Permanent Stabilization
- Waste Management
- Housekeeping Practices

**Targeted Constituents**
- ● Sediment
- ○ Nutrients Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Wastes

**Implementation Requirements**
- ● Capital Costs
- ● Maintenance
- ○ Training
- ○ Suitability for Slopes >5%

**Legend**
- ● Significant Impact
- ◐ Medium Impact
- ○ Low Impact
- ? Unknown or Questionable Impact

**BMP**
9

City of Baton Rouge Parish of East Baton Rouge

**Department of Public Works**

## Diversion Dike

- Minimum width of the embankment at the top shall be 2 feet.
- Minimum embankment height shall be 18 inches as measured from the toe of slope on the upgrade side of the berm.
- For velocities less than 5 feet per second, the minimum stabilization for the dike and adjacent flow areas is grass, erosion control mats or mulch. For velocities greater than 5 feet per second, stone stabilization or high velocity erosion control mats should be used. Velocities greater than 8 feet per second must be approved by the local jurisdiction.
- The dikes shall remain in place until all disturbed areas which are protected by the dike are permanently stabilized unless other controls are put into place to protect the disturbed area.
- Flow line of dike shall have a positive grade to drain to a controlled outlet.

**LIMITATIONS**
Compacted earth dikes require stabilization immediately upon placement so as not to contribute to the problem they are addressing.

The diversion dikes can be a hinderance to construction equipment moving on the site, therefore their locations must be carefully planned prior to installation.

**MAINTENANCE REQUIREMENTS**
Dikes must be inspected on a weekly basis and after each significant (>0.5 inch) rainfall to determine if silt is backing up behind the dike, or if erosion is occurring on the face of the dike. Silt shall be removed in a timely manner. If erosion is occurring on the face of the dike, the slopes of the face shall either be stabilized through mulch or seeding or the slopes of the face shall be reduced.

**BMP**
7

**Department of Public Works**

## Interceptor Swale

**DESIGN CRITERIA**
- Maximum depth of flow in the swale shall be 1.5 feet based on a 2 year design storm peak flow. Positive overflow must be provided to accommodate larger storms.
- Side slopes of the swale shall be 3:1 or flatter.
- Minimum design channel freeboard shall be 6 inches.
- The minimum required channel stabilization for grades less than 2 percent and velocities less than 5 feet per second may be grass, erosion control mats or mulching. For grades in excess of 2 percent, or velocities exceeding 5 feet per second, stabilization in the form of high velocity erosion mats, a three inch layer of crushed stone or rip rap is required. Velocities greater than 8 feet per second will require approval by the PROGRAM MANAGER.
- Check dams can be used to reduce velocities in steep swales. See check dam BMP fact sheet for design criteria.
- Interceptor swales must be designed for flow capacity based on Manning's Equation to ensure a proper channel section. Alternate channel sections may be used when properly designed and accepted.
- Consideration must be given to the possible impact that any swale may have on upstream or downstream conditions.
- Swales must maintain positive grade to an acceptable outlet.

**LIMITATIONS**
Interceptor swales must be stabilized quickly upon excavation so as not to contribute to the erosion problem they are addressing.

Swales may be unsuitable to the site conditions (too flat or steep).

Limited flow capacity for temporary swales. For permanent swales, the 1.5 feet maximum depth can be increased as long

**MAINTENANCE REQUIREMENTS**
Inspection must be made weekly and after each significant (0.5" or greater) rain event to locate and repair any damage to the channel or to clear debris or other obstructions so as not to diminish flow capacity. Damage from storms or normal construction activities such as fire ruts or disturbance of swale stabilization shall be repaired as soon as practical.

**BMP**
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**Department of Public Works**

## Stabilized Construction Entrance

- Maximum depth of entrance shall be 8 inches for the entire length of the control.
- Minimum dimensions for the entrance shall be as follows:

| Tract Area | Avg. Lot Depth | Min. Width of Entrance | Min. Depth of Entrance |
|---|---|---|---|
| < 1 Acre | 100 feet | 15 feet | 20 feet |
| < 5 Acres | 200 feet | 20 feet | 30 feet |
| < 10 Acres | > 200 feet | 20 feet | 40 feet |
| > 10 Acres | > 200 feet | 25 feet | 50 feet |

**LIMITATIONS**
Selection of the construction entrance location is critical in that to be effective, it must be used exclusively.

Stabilized entrances are rather expensive considering that it must be installed in combination with one or more other sediment control techniques, but it may be cost effective compared to labor intensive street cleaning.

**MAINTENANCE REQUIREMENTS**
Inspections should be made on a regular basis and after large storm events in order to maintain whether or not sediment and pollution are being effectively detained on site.

When sediment has substantially clogged the void area between the rocks, the aggregate must most be washed down or replaced.

Periodic re-grading and top dressing with additional stone must be done to keep the efficiency of the entrance from diminishing.

**BMP**
9

**Department of Public Works**

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3/14/2008

| STANDARD PLAN NO. | DATED | SHEET NO. |
|---|---|---|
| 903–01 | FEBRUARY 25, 2008 | 3 OF 11 |

STORM WATER POLLUTION PREVENTION PLAN
BEST MANAGEMENT PRACTICES

ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS
CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE

| DESIGNED | DRAWN | CHECKED | APPROVED |
|---|---|---|---|
| G. CHENG | G. VANNICE | G. CHENG | T. STEPHENS |

| DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|
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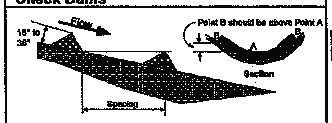
903–01

| PROJECT NO. | SHEET |
|---|---|
| | 121 |

## Check Dams




**Applications**
Perimeter Control
Slope Protection
Sediment Trapping
Channel Protection
Temporary Stabilization
Permanent Stabilization
Waste Management
Housekeeping Practices

**Targeted Constituents**
- Sediment
- Nutrients, Toxic Materials
- Oil & Grease
- Floatable Materials
- Other Construction Wastes

**Implementation Requirements**
- Capital Costs
- Maintenance
- Training
- Suitability for Slopes >5%

**Legend**
- Significant Impact
- Medium Impact
- Low Impact
- ? Unknown or Questionable Impact

**BMP**
10

City of Baton Rouge Parish of East Baton Rouge
Department of Public Works

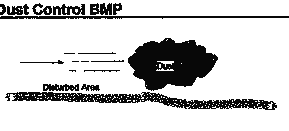
**DESCRIPTION**
Check dams are small barriers consisting of straw bales, rock, or earth berms placed across a drainage swale or ditch. They reduce the velocity of small concentrated flows, provide a limited barrier for sediment and help disperse concentrated flows, reducing potential erosion.

**PRIMARY USE**
Check dams are used for long drainage swales or ditches in which permanent vegetation may not be established and erosive velocities are present. They are typically used in conjunction with other techniques such as inlet protection, rip rap or other sediment reduction techniques. Check dams provide limited treatment. They are more useful in reducing flow to acceptable levels for other techniques.

**APPLICATIONS**
Check dams are typically used only in construction in swales for long linear projects such as roadways. They can also be used in short swales with a steep slope to reduce unacceptable velocities.

**DESIGN CRITERIA**
- Check dams should be placed at a distance and height to allow small pools to form between each one. Typically, dam height should be between 18" and 30". Dams should be spaced such that the top of the downstream dam should be at the same elevation as the toe of the upstream dam.
- See design criteria for straw bales, sand bag berms, etc. for specific criteria. Maximum allowable flow shall be based on the specific technique utilized and the velocity of flow.
- Major flows (greater than 2 year design storm) must pass the check dam without causing excessive upstream flooding.
- Check dams should be used in conjunction with other sediment reduction techniques prior to releasing flow offsite.

## Dust Control BMP




**Applications**
Perimeter Control
Slope Protection
Sediment Trapping
Channel Protection
Temporary Stabilization
Permanent Stabilization
Waste Management
Housekeeping Practices

**Targeted Constituents**
- Sediment
- Nutrients, Toxic Materials
- Oil & Grease
- Floatable Materials
- Other Construction Wastes

**Implementation Requirements**
- Capital Costs
- Maintenance
- Training
- Suitability for Slopes >5%

**Legend**
- Significant Impact
- Medium Impact
- Low Impact
- ? Unknown or Questionable Impact

**BMP**
11

City of Baton Rouge Parish of East Baton Rouge
Department of Public Works

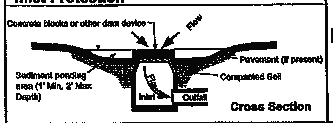
**DESCRIPTION**
Dust control measures are used to stabilize soil from wind erosion, and reduce dust generated by construction activities. Dust which settles on surfaces both on-site and off-site may be washed by storm water into waterways.

**APPLICATIONS**
- Clearing and grading activities
- Construction vehicles traffic on unpaved roads
- Drilling and blasting activities
- Sediment tracking onto paved roads
- Soil and debris stockpile piles
- Batch drop from front end loaders
- Areas with unstabilized soil

**DESIGN CRITERIA**
- Schedule construction activities to minimize the area where, and time period when soils are exposed.
- Quickly stabilize exposed soils using vegetation, mulching, spray-on adhesives, calcium chloride, sprinkling, and stone/gravel layering.
- Identify and stabilize key access points prior to commencement of construction.
- Minimizing the impact of dust by anticipating the direction of prevailing winds.
- Direct most construction traffic to stabilize roadways within the project site.

**LIMITATIONS**
- Watering prevents dust only for a short period and should be applied daily (or more often) to be effective. Overwatering may cause a contaminated overflow.
- Oils should not be used for dust control because it may migrate into drainageway and/or seep into the soil.
- Certain chemically-treated subgrades may make soil water repellent, increasing runoff.

## Inlet Protection




**Applications**
Perimeter Control
Slope Protection
Sediment Trapping
Channel Protection
Temporary Stabilization
Permanent Stabilization
Waste Management
Housekeeping Practices

**Targeted Constituents**
- Sediment
- Nutrients, Toxic Materials
- Oil & Grease
- Floatable Materials
- Other Construction Wastes

**Implementation Requirements**
- Capital Costs
- Maintenance
- Training
- Suitability for Slopes <5%

**Legend**
- Significant Impact
- Medium Impact
- Low Impact
- ? Unknown or Questionable Impact

**BMP**
12

City of Baton Rouge Parish of East Baton Rouge
Department of Public Works

**DESCRIPTION**
Inlet protection consists of a variety of methods of intercepting sediment at low point inlets through the use of stone, filter fabric and other materials. This is normally located at the inlet, providing either detention or filtration to reduce sediment and floatable materials in storm water.

**PRIMARY USE**
Inlet protection is normally used as a secondary defense in site erosion control. It is normally used in new developments that include new inlets or roads with new curb inlets or during major repairs to existing roadways. Inlet protection has limited use in developed areas due to the potential for flooding, traffic safety and pedestrian safety and maintenance problems. Inlet protection can reduce sediment in storm sewer systems by serving as a back up system to onsite controls or by reducing sediment loads from controls with limited effectiveness such as straw bale dikes.

**APPLICATIONS**
Different variations are used for different conditions as follows:
- Filter barrier protection (similar to a silt fence barrier around the inlet) is appropriate when the drainage area is less than one acre and the basin slope is less than five (5) percent. This type of protection is not applicable in paved areas.
- Block and gravel (crushed stone, recycled concrete is also appropriate) protection is used when flows exceed 0.5 c.f.s. and it is necessary to allow for overtopping to prevent flooding
- Wire mesh and gravel protection (crushed stone, recycled concrete is also appropriate) is used when flows exceed 0.5 c.f.s. and construction traffic may occur over the inlet. This form of protection may be used with both curb and drop inlets

## Check Dams

**LIMITATIONS**
Minor ponding will occur upstream of the check dams.

For heavy flows or high velocity flows, extensive maintenance or replacement of the dams will be required.

Check dams are not a total treatment technique.

**MAINTENANCE REQUIREMENTS**
Maintenance of the dams should adhere to the maintenance requirements of the management practice used for the dam.

**BMP**
10

Department of Public Works

## Dust Control BMP

**MAINTENANCE REQUIREMENTS**
Most dust control measures require frequent, often daily, attention.

**ADDITIONAL INFORMATION**
Dust control BMP's generally stabilize exposed dust particles. For heavily traveled and disturbed areas, wet suppression (watering), chemical dust suppression, gravel or asphalt surfacing, temporary gravel construction entrances, equipment wash-out areas, and haul truck covers can be employed as dust control applications. Permanent or temporary vegetation seed mulching and fences can be employed for areas of occasional or no construction traffic. Preventive measures would include minimizing surface areas to be disturbed.

Many of the reasonably available control measures for controlling dust from construction sites can also be implemented as BMPs for storm water pollution prevention. These BMPs include:

- Pave, vegetate, or chemically stabilize access points where exposed traffic surfaces adjoin paved roads.
- Provide covers for haul trucks transporting materials that contribute to dust.
- Provide suppressive or chemical stabilization of exposed soils.
- Provide for rapid clean-up of sediments deposited on paved roads. Furnish stabilized construction road entrances and vehicle wash down areas.
- Stabilize unpaved haul roads, parking and staging areas. Reduce speed and trips on unpaved roads.
- Implement dust control measures for material stockpiles.
- Prevent drainage of sediment laden storm water onto paved surfaces.
- Stabilize abandoned construction sites using vegetative or chemical stabilization methods.
- Limit the amount of areas disturbed by clearing and earth moving operations by scheduling these activities in phases.

For the chemical stabilization, there are many products available as dust palliatives for chemically stabilizing gravel roadways and stockpiles.

In addition, there are many other BMPs identified in this

- Seeding and Plantings
- Stabilized Construction Entrance
- Construction Road Stabilization
- Mulching

**BMP**
11

Department of Public Works

## Inlet Protection

- Excavated impoundment protection around a drop inlet may be used for protection against sediment entering a storm drain system. With this method, it is necessary to install weep holes to allow the impoundment to drain completely. The impoundment shall be sized such that the volume of excavation shall be equal to 1800 to 3600 cubic feet per acre of contributing drainage area entering the inlet for full effectiveness. Smaller volumes can be used for reduced effectiveness.

**DESIGN CRITERIA**
- Filter fabric protection shall be designed and maintained in a manner similar to silt fence.
- Maximum depth of flow shall be eight (8) inches or less depending on vehicular and pedestrian traffic.
- Positive drainage is critical in the design of inlet protection. If overflow is not provided for at the inlet, flows which exceed the capacity of the inlet protection system shall be routed through established swales, streets or other watercourses to minimize damage due to ponding and to provide for public safety.

**LIMITATIONS**
Ponding will occur at the inlet with possible flooding as a result.

Inlet protection is only viable at low point inlets. Inlets which are on a slope cannot be effectively protected because stormwater will bypass the inlet and continue downstream, causing an overload condition at inlets beyond.

**MAINTENANCE REQUIREMENTS**
Inspections should be made on a weekly basis, especially after large (> 0.5 inches) storm events. When silt fence is used and the fabric becomes clogged, it should be cleaned or if necessary, replaced. Also, sediment should be removed when it reaches approximately one-half the height of the fence. If a sump is used, sediment should be removed when the volume of the basin is reduced by 50%.

For systems using stone filters, when the stone filter becomes clogged with sediment, the stones must be pulled away from the inlet and cleaned or replaced. Since cleaning of gravel at a construction site may be difficult, an alternative approach would be to use the clogged stone as fill material and put new stone around the inlet.

**BMP**
12

Department of Public Works

STATE OF LOUISIANA
THOMAS A. STEPHENS
License No. 19617
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING
2/14/2008

| STANDARD PLAN NO. | DATED | SHEET NO. |
|---|---|---|
| 903–01 | FEBRUARY 25, 2008 | 4 OF 11 |

STORM WATER POLLUTION PREVENTION PLAN
BEST MANAGEMENT PRACTICES

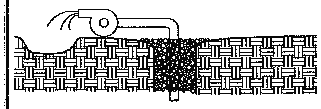
ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS
CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE

| DATE | DESCRIPTION REVISIONS | BY | DESIGNED | DRAWN | CHECKED | APPROVED |
|---|---|---|---|---|---|---|
| | | | G. CHENG | G. VANNICE | G. CHENG | T. STEPHENS |

903–01

| PROJECT NO. | SHEET |
|---|---|
| | 122 |

## Dewatering Operations



**Applications**
Perimeter Control
Slope Protection
**Sediment Trapping**
Channel Protection
Temporary Stabilization
Permanent Stabilization
Waste Management
Housekeeping Practices

**Targeted Constituents**
- ○ Sediment
- ○ Nutrients
  Toxic Materials
- ⊖ Oil & Grease
- ○ Floatable Materials
- ● Other Construction Wastes

**Implementation Requirements**
- ⊖ Capital Costs
- ○ Maintenance
- ⊖ Training
- ○ Suitability for Slopes >5%

**Legend**
- ● Significant Impact
- ⊖ Medium Impact
- ○ Low Impact
- ? Unknown or Questionable Impact

**BMP**
13

City of Baton Rouge
Parish of
East Baton Rouge

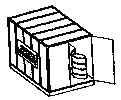
Department of
Public Works

**DESCRIPTION**
Prevent or reduce the discharge of pollutants to storm water from dewatering operations by using sediment controls and by testing the water for contamination.

**APPLICATIONS**
There are two general classes or pollutants that may result from dewatering operations: sediment, and trucks and petroleum products. A high sediment content in dewatering discharges is common because of the nature of the operation. On the other hand, trucks and petroleum products are not commonly found in dewatering discharges unless, the site or surrounding area has been used for light or heavy industrial activities, or the area has a history of groundwater contamination.

**DESIGN CRITERIA**
- Use sediment controls to remove sediment from water generated from dewatering.
- Use filtration to remove sediment from a sediment trap or basin. Filtration can be achieved with:
  - Sump pit and a standpipe in the center with holes and wrapped in filter fabric. The standpipe is surrounded by stones which filters the water as it collects in the pit before being pumped out;
  - Feeding suction hose allowing cleaner surface water to be pumped out; or
  - Standpipe in the sediment basin with slits and wrapped in filter fabric to remove sediments.
- Trucks and Petroleum Products:
  - In areas suspected of having groundwater contamination, protect yourself early in the excavation process by sampling and having the water tested at a certified laboratory. Check with the Louisiana Department of Environmental Quality and the PROGRAM MANAGER for their requirements, including additional water quality tests and disposal options.

## Material Delivery And Storage



**Applications**
Perimeter Control
Slope Protection
Sediment Trapping
Channel Protection
Temporary Stabilization
Permanent Stabilization
Waste Management
**Housekeeping Practices**

**Targeted Constituents**
- ○ Sediment
- ○ Nutrients
  Toxic Materials
- ⊖ Oil & Grease
- ○ Floatable Materials
- ● Other Construction Wastes

**Implementation Requirements**
- ⊖ Capital Costs
- ○ Maintenance
- ⊖ Training
- ○ Suitability for Slopes >5%

**Legend**
- ● Significant Impact
- ⊖ Medium Impact
- ○ Low Impact
- ? Unknown or Questionable Impact

**BMP**
14

City of Baton Rouge
Parish of
East Baton Rouge

Department of
Public Works

**DESCRIPTION**
Prevent or reduce the discharge or pollutants to storm water from material delivery and storage by minimizing the storage of hazardous materials on-site, storing materials in a designated area, installing secondary containment, conducting regular inspection, and training employees and subcontractors.

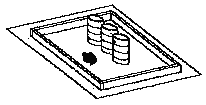
This best management practice covers only material delivery and storage. For information on wastes, see the waste management BMPs.

**APPLICATIONS**
The following materials are commonly stored on construction sites:
- Pesticides and herbicides.
- Fertilizers.
- Detergents.
- Petroleum products such as fuel, oil, and grease.
- Other hazardous chemicals such as acids, lime, glues, paints, solvents, and curing compounds.

Storage of these materials on-site can pose the following risks:
- Storm water contamination.
- Injury to workers or visitors.
- Groundwater contamination.
- Soil contamination.

**DESIGN CRITERIA**
- Designate an area of the construction site for material delivery and storage.
  - Place near the construction entrance, away from waterways
  - Avoid transport near drainage paths or waterways
  - Surround with earth berms

## Spill Prevention And Control



**Applications**
Perimeter Control
Slope Protection
Sediment Trapping
Channel Protection
Temporary Stabilization
Permanent Stabilization
Waste Management
**Housekeeping Practices**

**Targeted Constituents**
- ○ Sediment
- ○ Nutrients
  Toxic Materials
- ⊖ Oil & Grease
- ○ Floatable Materials
- ● Other Construction Wastes

**Implementation Requirements**
- ○ Capital Costs
- ○ Maintenance
- ⊖ Training
- ○ Suitability for Slopes >5%

**Legend**
- ● Significant Impact
- ⊖ Medium Impact
- ○ Low Impact
- ? Unknown or Questionable Impact

**BMP**
15

City of Baton Rouge
Parish of
East Baton Rouge

Department of
Public Works

**DESCRIPTION**
Prevent or reduce the discharge of pollutants to storm water from leaks and spills by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training employees.

This best management practice covers only spill prevention and control. However, Material Delivery and Storage and Material Use, also contain useful information, particularly on spill prevention. For information on wastes, see the waste management BMPs.

**APPLICATIONS**
The following steps will help reduce the storm water impacts of leaks and spills:

**General Measures**
- Hazardous materials and wastes should be stored in covered containers and protected from vandalism.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- Train employees in spill prevention and cleanup.

**Cleanup**
- Clean up leaks and spills immediately.
- On paved surfaces, clean up spills with as little water as possible. Use a rag for small spills, a mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be sent to either a certified laundry (rags) or disposed of as hazardous waste.
- Never hose down or bury dry materials spills. Sweep up or excavate the materials and dispose of properly. See the waste management BMPs

## Dewatering Operations

- Contaminated water can be expensive to treat and/or dispose of properly. However, addressing the problem before construction is much less expensive than after the structures are in place.

**LIMITATIONS**
The presence of contaminated water may indicate contaminated soil as well. If contaminated water is discovered or suspected, the CONTRACTOR shall stop dewatering and immediately notify the PROGRAM MANAGER.

**MAINTENANCE REQUIREMENTS**
Maintain sediment controls and filters in good working order.

Inspect excavated areas daily for signs contaminated water as evidenced by discoloration, oily sheen, or odors.

BMP
13

Department of
Public Works

## Material Delivery And Storage

- Storage of reactive, ignitible, or flammable liquids must comply with the most fire codes and BTR Airport Rescue and Fire Fighting (ARFF) regulations. Contact ARFF, Captain Milton Thomas (504-355-2066), to review site materials, quantities, and proposed storage area to determine specific requirements. See the Flammable and Combustible Liquid Code NFPA30.
- Keep an accurate, up-to-date inventory in your SWPPP of the materials delivered and stored on-site.
- Keep your inventory down. Store only the amount you need, for only as long as you need it.
- Store as few hazardous materials on-site as possible.
- Handle hazardous materials as infrequently as possible.
- Designate a secure material storage area away from drainage courses and near the site entrance.
- Whenever possible, store materials in a covered area with secondary containment such as an earthen dike, horse trough, or even kid's wading pool for non-reactive materials such as detergents, oil, grease and paints. Small amounts of material may be secondarily contained in "battery" trays or cement mixing trays.
- Do not store chemicals, drums, or bagged materials directly on the ground. Place these items in secondary containment.
- If drums must be kept uncovered, store them at a slight angle to reduce ponding or rainwater on the lids and to reduce corrosion.
- Try to keep chemicals in their original containers, and keep them well labeled.
- Train employees and subcontractors.
- Employees trained in emergency spill cleanup procedures should be present when dangerous materials or liquid chemicals are unloaded.

**LIMITATIONS**
Storage sheds often must meet building and fire code requirements.

**MAINTENANCE REQUIREMENTS**
Keep the designated storage area clean and well organized.
Conduct routine weekly inspections and check for external corrosion of material containers.
Keep an ample supply of spill cleanup materials near the storage area.

BMP
14

Department of
Public Works

## Spill Prevention And Control

**Reporting**
- Immediately report spills to the BTR Airport Rescue & Fire Fighting Unit (504-355-2066). Federal regulations require that any oil spill into a water body or onto an adjoining shoreline be reported to the National Response Center (NRC) at 800-424-8802 (24 hour).

**Vehicle and Equipment Maintenance**
- If maintenance must occur on-site, use a designated area, located away from drainage courses, prevent the runon of storm water and the runoff of spills.
- Regularly inspect on-site vehicles and equipment for leaks, and repair immediately.
- Check incoming vehicles and equipment (including delivery trucks, and employee and subcontractor vehicles) for leaking oil and fluids. Do not allow leaking vehicles or equipment on-site.
- Always use secondary containment, such as a drain pan or deep cloth, to catch spills or leaks when removing or changing fluids.
- Place drip pans or absorbent materials under equipment when not in use.
- Use absorbent materials on small spills rather than hosing down or burying the spill. Remove the absorbent materials promptly and dispose of properly.
- Promptly transfer used fluids to the proper waste or recycling drums. Don't leave full drip pans or other open containers lying around.
- Oil filters disposed of in trash cans or dumpsters can leak oil and contaminate storm water. Place the oil filter in a funnel over a waste oil recycling drum to drain excess oil before disposal. Oil filters can also be recycled. Ask your oil supplier or recycler about recycling oil filters.
- Store cracked batteries in a non-leaking secondary container. Do this with all cracked batteries even if you think all the acid has drained out. If you drop a battery, treat it as if it is cracked. Put in into the containment area until you are sure it is not leaking.

**Vehicle and Equipment Fueling**
- If fueling must occur on-site, use designated areas, located away from drainage courses, to prevent the runon of storm water and the runoff of spills.
- Discourage "topping-off" of fuel tanks.
- Always use secondary containment, such as a drain pan, when fueling to catch spillovers.

**LIMITATIONS**
If necessary, use a private spill cleanup company.

**MAINTENANCE REQUIREMENTS**
Keep ample supplies or spill control and cleanup materials on-site, near storage, unloading, and maintenance areas.

Update your spill cleanup materials as changes occur in the types of chemicals on-site.

BMP
15

Department of
Public Works

THOMAS A. STEPHENS
Louisiana No. 19417
PROFESSIONAL ENGINEER
IN
CIVIL ENGINEERING
2/12/2015

| STANDARD PLAN NO. | DATED | SHEET NO. |
|---|---|---|
| 903–01 | FEBRUARY 25, 2008 | 5 OF 11 |

STORM WATER POLLUTION
PREVENTION PLAN
BEST MANAGEMENT PRACTICES

| DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|
| | | |

ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS
CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE

| DESIGNED | DRAWN | CHECKED | APPROVED |
|---|---|---|---|
| G. CHENG | G. VANNICE | G. CHENG | T. STEPHENS |

903–01

| PROJECT NO. | SHEET |
|---|---|
| | 123 |

## Lime Stabilization BMP


**DESCRIPTION**
Lime stabilization is used extensively in some areas to stabilize pavement subbases for roadways, parking lots and other paved surfaces. Hydrated lime is applied to the soil and mixed through disking and other techniques, then allowed to cure. This process will reduce the potential for runoff to carry fine silicate, where it may impact aquatic life through changing the pH balance of streams, ponds and other water bodies.

**PRIMARY USE**
This BMP consists of a series of techniques that should be implemented when lime is required for soil stabilization.

**APPLICATIONS**
Each of the techniques listed can be used under a variety of conditions. The engineer should determine the applicability of the technique based on site conditions such as available open space, quantity of area to be stabilized, proximity of nearby water courses and other BMPs employed at the site. The use of diversion dikes and interceptor swales (see appropriate

in conjunction with these techniques to reduce the impact of the lime.

**DESIGN CRITERIA**
- The contractor shall limit lime operations to that which can be thoroughly mixed and compacted by the end of each work day.
- No traffic other than water trucks and mixing equipment shall be allowed to pass over the spread lime until after completion of mixing.
- Areas adjacent and downstream of stabilized areas shall be roughened to intercept lime from runoff and reduce runoff velocity.
- Geotextile fabrics such as those used for silt fence should not be used to address lime since the grain size of lime is significantly smaller than the equivalent opening size of the fabric.
- For areas which phasing of lime operations is impractical, use of a curing seal such as Liquid Asphalt, Grade MC-250 or MC-800 applied at a rate of 0.15 gallons per square yard of surface can be used to protect the base.

**Applications**
Perimeter Control
Slope Protection
Sediment Trapping
Channel Protection
Temporary Stabilization
Permanent Stabilization
Waste Management
Housekeeping Practices

**Targeted Constituents**
- ○ Sediment
- ○ Nutrients
  Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Wastes

**Implementation Requirements**
- ○ Capital Costs
- ○ Maintenance
- ○ Training
- ○ Suitability for Slopes >5%

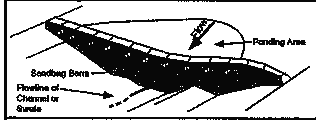
**Legend**
- ● Significant Impact
- ◎ Medium Impact
- ○ Low Impact
- ? Unknown or Questionable Impact

BMP
16

City of Baton Rouge
Parish of
East Baton Rouge

Department of
Public Works

## Sand Bag Berm




**DESCRIPTION**
Sandbag berms consist of stacked sandbags installed across a watercourse to direct flow around construction or to allow sedimentation to occur for flows downstream of disturbed areas. There are overflow pipes located in the top of the berms to allow controlled outflow of water after sedimentation has occurred.

**PRIMARY USE**
A sandbag berm is a temporary sediment control method that addresses the problem of construction in creeks, channels and other watercourses which carry a constant flow and is subjected to high, concentrated flows. A sandbag berm can also be used to create a small sedimentation pond prior to the completion of a permanent detention basin.

Sandbag berms can be used as check dams in temporary swales or borrow ditches.

Sandbag berms are not recommended for typical perimeter controls where sheet flow is prevalent.

**APPLICATIONS**
During utility or any type of construction in channels or stream beds, sandbag berms can be used as check dams across channels, serve as a barrier for utility trenches or even provide a temporary channel crossing for construction equipment without seriously affecting stream conditions. Sandbag berms can also be installed parallel to a roadway, providing a corridor of sediment control similar to that provided by a silt fence or hay bales with the exception that a sand bag dike is capable of controlling much higher flows and is much more durable. For site construction sandbag berms can be used to divert or direct flow or create a temporary sediment basin with the added dimension of being able to be moved to accommodate changes in construction much more easily than compacted earth berms.

**Applications**
Perimeter Control
Slope Protection
Sediment Trapping
Channel Protection
Temporary Stabilization
Permanent Stabilization
Waste Management
Housekeeping Practices

**Targeted Constituents**
- ○ Sediment
- ○ Nutrients
  Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Wastes

**Implementation Requirements**
- ● Capital Costs
- ○ Maintenance
- ○ Training
- ● Suitability for Slopes >5%

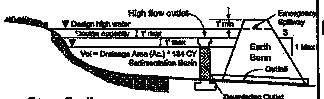
**Legend**
- ● Significant Impact
- ◎ Medium Impact
- ○ Low Impact
- ? Unknown or Questionable Impact

BMP
17

City of Baton Rouge
Parish of
East Baton Rouge

Department of
Public Works

## Sediment Basin




**DESCRIPTION**
A sediment basin is a pond area with a controlled outlet in which sediment-laden runoff is directed to allow settling of suspended sediment from the runoff. It provides treatment for the runoff as well as detention and controlled release of runoff, minimizing flood impacts downstream.

**PRIMARY USE**
Sediment basins should be used for all sites with adequate open space to site the basin and the ability to direct a majority of the site drainage into the basin. For sites with disturbed areas of 10 acres and larger that are part of a common drainage area, sediment basins are required as either temporary or permanent controls unless specific site conditions limit their use.

**APPLICATIONS**
Sediment basins serve as treatment devices which can be used on a variety of project types. It is normally used in site development projects in which large areas of land are available for the basin, a stream or drainage way crosses the site, or a specific water feature is planned for the site. Sediment basins are highly effective at reducing sediment and other pollutants for design storm conditions. It also reduces maintenance requirements due to the control location of the sediment and minimal structural requirements of the basin.

**DESIGN CRITERIA**
- Maximum drainage area contributing to the basin should be 10 acres or less. Larger sediment basins will require specific measures to address the potential for overtopping of the basin and possible failure of the berm.
- Minimum capacity of the basin shall be 3600 cubic feet per disturbed acre of contributing drainage area.
- Deposited sediment shall be removed when the storage capacity of the basin has been depleted by 20%.
- Minimum width of the embankment at the top shall be 6 feet.
- Minimum embankment slope shall be 3:1.
- Minimum embankment height shall be 9 feet as measured from

**Applications**
Perimeter Control
Slope Protection
Sediment Trapping
Channel Protection
Temporary Stabilization
Permanent Stabilization
Waste Management
Housekeeping Practices

**Targeted Constituents**
- ● Sediment
- ◎ Nutrients
  Toxic Materials
- ○ Oil & Grease
- ◎ Floatable Materials
- ○ Other Construction Wastes

**Implementation Requirements**
- ● Capital Costs
- ◎ Maintenance
- ○ Training
- ● Suitability for Slopes >5%

**Legend**
- ● Significant Impact
- ◎ Medium Impact
- ○ Low Impact
- ? Unknown or Questionable Impact

BMP
18

City of Baton Rouge
Parish of
East Baton Rouge

Department of
Public Works

## Lime Stabilization BMP

- Use of sediment basins with a significant (>36 hour) drawdown time is encouraged for large stabilized areas (see Sediment Basin BMP).

**LIMITATIONS**
These techniques are part of an overall plan to reduce pollutants from an active construction site. In the case of pollution due to lime, prevention of contamination is the only effective method to address this pollutant. Proper application and mixing along with sprinkling applications when there is a significant probability of rain will reduce lime runoff.

**MAINTENANCE REQUIREMENTS**
None.

BMP
16

Department of
Public Works

## Sand Bag Berm

**DESIGN CRITERIA**
- Berms are to be constructed along a line of constant elevation (a contour line) for use as perimeter control devices.
- Maximum flow through rate shall be 0.1 CFS per square foot of berm surface.
- Minimum height shall be 18 inches.
- Minimum width of the berm shall be 18 inches at the top and 54 inches measured at the bottom.
- Maximum side slopes shall be 2:1.
- Maximum design freeboard shall be 0.5 feet.
- Sandbags shall be consist of jute, polypropylene, polyethylene or polyamide woven fabric. Jute shall be composed of a uniform weave of undyed and unbleached single jute yarn weighing an average of 1.2 pounds per linear end of cloth with approximately 78 warp ends per width of cloth. Polypropylene, polyethylene or polyamide woven fabric shall have a minimum unit weight of 4 ounces per square yard, a grab break strength of 200 psi minimum and ultraviolet stability exceeding 70 percent, and shall be filled with coarse sand or pea gravel.
- 4" diameter Schedule 40 or greater PVC pipe segments approximately 24 inches in length shall be used immediately below the top layer of sandbags to allow for flow through the berm.
- For severe velocities or high flows, woven wire mesh can be used to maintain the integrity of the berm.
- Sufficient room for the operation of sediment removal equipment shall be provided between the berm and other obstructions in order to properly remove sediment.
- The ends of the berm shall be turned upgrade or shall be into natural grades to prevent bypass of stormwater.
- In channel applications, the center of the berm must be lower than the outside ends to prevent bypass around the berm.

**LIMITATIONS**
Sandbag berms are a costly, labor intensive technique which is suitable only for areas subjected to high concentrated flows. The permeability of the berms makes it unsuitable for low flow, perimeter conditions.

Ponding will occur directly upstream from the berm creating the possibility of a flooding concern which should be considered prior to its placement.

For sandbag berms located in high flow areas such as creeks, the potential for berm damage during high flows increases the requirement for maintenance.

**MAINTENANCE REQUIREMENTS**
Inspections should be made on a daily basis and after each significant (>0.5 inches) rain event. The sandbags shall be reshaped or replaced as need during the inspection. Silt should be removed when it reaches a depth of six (6) inches. In addition, weekly inspections should be made on the PVC pipe segments to assure clear flow.

BMP
17

Department of
Public Works

## Sediment Basin

the toe of slope on the downstream side.
- The basin outlet shall be designed to accommodate a 10 year design storm without causing damage to the containment structure.
- Minimum outlet capacity shall be 0.5 CFS per acre of contributing drainage area.
- The sediment basin shall have a minimum design dewatering time of 36 hours.
- The basin must be laid out such that the effective flow length of the basin should be at least twice the effective flow width.
- The outlet of the outfall pipe shall be stabilized with rip rap or other form of stabilization with design flows and velocities based on 25 year design storm peak flows. For velocities in excess of 8 feet per second, velocity dissipation measures should be used to reduce outfall velocities.

**LIMITATIONS**
Sediment basins can be rather large depending on site conditions, requiring the use of expensive development area and comprehensive planning for construction phasing prior to implementation.

Storm events which exceed the design storm event can cause damage to the spillway structure of the basin and may impact downstream concerns.

**MAINTENANCE REQUIREMENTS**
Sediment shall be removed and the basin shall be regraded to its original dimensions at such point that the capacity of the impoundment has been reduced to 20% of its original storage capacity. The removed sediment shall be stockpiled or redistributed in areas which are protected from erosion.

The basin outlet structure and emergency spillway (if present) should be checked frequently and after each major rain event to check for damage and to insure that obstructions are not diminishing the effectiveness of the structures.

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Department of
Public Works


| DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|

| STANDARD PLAN NO. | DATED | SHEET NO. |
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| 903–01 | FEBRUARY 25, 2008 | 6 OF 11 |

STORM WATER POLLUTION
PREVENTION PLAN
BEST MANAGEMENT PRACTICES

ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS
CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE

| DESIGNED | DRAWN | CHECKED | APPROVED |
|---|---|---|---|
| G. CHENG | G. VANNICE | C. CHENG | T. STEPHENS |

903–01

| PROJECT NO. | SHEET |
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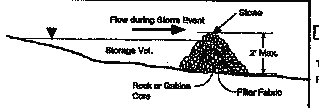
| | 124 |

## Stone Outlet Sediment Trap




**DESCRIPTION**
A stone outlet sediment trap is a small ponding area formed by placing a stone embankment or gabion core with an integral stone filter outlet across a drainage swale for the purpose of detaining sediment-laden runoff generated by construction activities. The sediment trap detains runoff long enough to allow most of the suspended sediment to settle while still allowing for diffused flow of runoff.

**PRIMARY USE**
A sediment trap is used in situations where flows are concentrated in a drainage swale or channel. The sediment trap reduces velocities and allows for settling of sediment while allowing the area behind the trap to de-water. This is normally used for long term (18 months or less) applications in which a sediment basin is not feasible due to site or construction method restrictions. The use of a gabion core as opposed to a
dewatering the area as necessary.

**APPLICATIONS**
Temporary stone outlet sediment traps are installed at locations where concentrated flows require a protected outlet to contain sediment or spread flow prior to discharge.

**DESIGN CRITERIA**
- Maximum drainage area contributing to the trap shall be 3 acres. For larger drainage areas, a sediment basin should be used.
- The minimum length of the crest, in feet, of the stone outlet shall be equal to 6 times the size (acres) of the contributing drainage area.
- Deposited sediment shall be removed when the depth of sediment is equal to one-third of the height of the outlet structure as measured from the original toe of slope to the crest of the outlet, or has reached a depth of one foot, whichever is less.
- Minimum width of the embankment at the top shall be 3 feet.
- Minimum embankment slope shall be 3:1.

**Applications**
Perimeter Control
Slope Protection
Sediment Trapping
Channel Protection
Temporary Stabilization
Permanent Stabilization
Waste Management
Housekeeping Practices

**Targeted Constituents**
- ● Sediment
- ○ Nutrients
- ○ Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Wastes

**Implementation Requirements**
- ● Capital Costs
- ◐ Maintenance
- ○ Training
- ● Suitability for Slopes >5%

**Legend**
- ● Significant Impact
- ◐ Medium Impact
- ○ Low Impact
- ? Unknown or Questionable Impact

**BMP**
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City of Baton Rouge
Parish of
East Baton Rouge

Department of
Public Works

## Vehicle And Equipment Cleaning

**DESCRIPTION**
Prevent or reduce the discharge of pollutants to storm water from vehicle and equipment cleaning by using off-site facilities, washing in designated areas only, discharges to the storm drain by infiltrating or recycling the wash water and training employees and subcontractors.

**APPLICATIONS**
Washing vehicles and equipment outdoors or in areas where wash water

**DESIGN CRITERIA**
- Use off-site commercial washing businesses as much as possible. For operations involving a large number of vehicles or pieces of equipment, consider conducting this work at an off-site commercial business equipped to handle and dispose of the wash waters properly. Performing this work off-site can also be economical by eliminating the need for a separate washing operation at your site.
- If washing must occur on-site, use designated, bermed wash areas to prevent wash water contact with storm water, creeks, rivers, and other water bodies.
for wash water collection and subsequent infiltration into the ground.
- Use as little water as possible to avoid having to install erosion and sediment controls for the wash area.
- Use phosphate-free, biodegradable soaps.
- Educate employees and subcontractors on pollution prevention measures.
- Do not permit steam cleaning on-site. Steam cleaning can generate significant pollutant concentrations leading to potential storm water and groundwater contamination.
- In construction areas where truck tires contact road, provide a cleaning areas for removing soil before truck leaves site. Truck tire cleaning area should not be directly adjacent to drainage conveyances. A vegetated buffer area should be located downstream of the tire wash. For heavy use of the wash area, silt fencing, or sediment trapping may be necessary.

**Applications**
Perimeter Control
Slope Protection
Sediment Trapping
Channel Protection
Temporary Stabilization
Permanent Stabilization
Waste Management
Housekeeping Practices

**Targeted Constituents**
- ● Sediment
- ○ Nutrients
- ○ Toxic Materials
- ● Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Wastes

**Implementation Requirements**
- ○ Capital Costs
- ● Maintenance
- ● Training
- ○ Suitability for Slopes >5%

**Legend**
- ● Significant Impact
- ◐ Medium Impact
- ○ Low Impact
- ? Unknown or Questionable Impact

**BMP**
20

City of Baton Rouge
Parish of
East Baton Rouge

Department of
Public Works

## Vehicle And Equipment Fueling

**DESCRIPTION**
Prevent fuel spills and leaks, and reduce their impacts to storm water by using off-site facilities, fueling in designated areas only, enclosing or covering stored fuel, implementing spill controls, and training employees and subcontractors.

**APPLICATIONS**
Fueling vehicles and equipment outdoors or in areas where wash water flows onto the ground can pollute storm water.

**DESIGN CRITERIA**
- Use of off-site fueling stations as much as possible. If you fuel a large number of vehicles or pieces of equipment, consider using an off-site fueling station equipped to handle fuel and spills properly. Performing this work off-site can also be accomplished by eliminating the need for a separate fueling area at your site.
- If fueling must occur on-site, use designated areas, located away from drainage courses to prevent the runoff of storm water and the runoff of spills.
- Discourage "topping-off" of fuel tanks.
- Always use secondary containment, such as a drain pan, when fueling to catch spills/leaks.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- Use absorbent materials on small spills rather than hosing down or burying the spill. Remove the absorbent materials promptly and dispose of properly.
- Carry out all Federal and State requirements regarding stationary above ground storage tanks.
- Do not use mobile fueling of mobile construction equipment around the site; rather, transport the equipment to designated fueling areas. With the exception of tracked equipment such as bulldozers and perhaps small forklifts, most vehicles should be able to travel to a designated area with little lost time.

**Applications**
Perimeter Control
Slope Protection
Sediment Trapping
Channel Protection
Temporary Stabilization
Permanent Stabilization
Waste Management
Housekeeping Practices

**Targeted Constituents**
- ○ Sediment
- ○ Nutrients
- ○ Toxic Materials
- ● Oil & Grease
- ○ Floatable Materials
- ○ Other Construction Wastes

**Implementation Requirements**
- ● Capital Costs
- ○ Maintenance
- ● Training
- ○ Suitability for Slopes >5%

**Legend**
- ● Significant Impact
- ◐ Medium Impact
- ○ Low Impact
- ? Unknown or Questionable Impact

**BMP**
21

City of Baton Rouge
Parish of
East Baton Rouge

Department of
Public Works

## Stone Outlet Sediment Trap

- Maximum embankment height shall be 2 feet as measured from the toe of slope to the crest of the stone outlet. The height of the compacted earth embankment shall be one foot higher than the crest of the outlet.
- The maximum allowable flow-through rate shall be 0.1 CFS per square foot of the frontal area of the outlet structure.
- The effective life of the stone outlet sediment trap is approximately 18 months.

**LIMITATIONS**
Limited applications due to cost of construction, availability of materials, and the amount of land required.

Can cause minor flooding upstream of dam, impacting construction operations.

This technique serves as a temporary measure during construction. It should not be used for more than 18 months due to reduced efficiency.

**MAINTENANCE REQUIREMENTS**
Sediment shall be removed and the area directly behind the berm shall be regraded to its original dimensions at such point when the capacity of the impoundment has been reduced to one-half of its original storage capacity. The removed sediment shall be stockpiled or redistributed in areas which are protected from erosion.

The stone outlet structure should be inspected frequently and after each major rain event to check for clogging of the void spaces between stones. If the aggregate appears to be silted in such that efficiency is diminished, the stone should be replaced.

**BMP**
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Department of
Public Works

## Vehicle And Equipment Cleaning

**LIMITATIONS**
Even phosphate-free, biodegradable soaps have been shown degrades.
Sending vehicles/equipment off-site should be done in conjunction with Entrance BMP.

**MAINTENANCE REQUIREMENTS**
Minimal.

**BMP**
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Department of
Public Works

## Vehicle And Equipment Fueling

- Train employees and subcontractors in proper fueling and cleanup procedures.

**LIMITATIONS**
Sending vehicles/equipment off-site should be done in conjunction with Stabilized Construction Entrance BMP.

**MAINTENANCE REQUIREMENTS**
Keep ample supplies of spill cleanup materials on-site.
Inspect fueling areas and storage tanks on a regular schedule.

**BMP**
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Department of
Public Works

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2/12/2013

| STANDARD PLAN NO. | DATED | SHEET NO. |
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| 903-01 | FEBRUARY 25, 2008 | 7 OF 11 |

STORM WATER POLLUTION
PREVENTION PLAN
BEST MANAGEMENT PRACTICES

ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS
CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE

| DESIGNED | DRAWN | CHECKED | APPROVED |
|---|---|---|---|
| G. CHENG | G. VANNICE | G. CHENG | T. STEPHENS |

| DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|
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903-01

ATTACHMENT A

| PROJECT NO. | SHEET |
|---|---|
| | 125 |

## Solid Waste Management

**DESCRIPTION**
Large volumes of solid waste are often generated at construction sites including: packaging, pallets, wood waste, concrete waste, soil, electrical wiring, cuttings, and a variety of other materials. The solid waste management practice lists techniques to minimize the potential of storm water contamination from solid waste through appropriate storage and disposal practices.

**PRIMARY USE**
These practices should be a part of all construction practices. By limiting the trash and debris on site, storm water quality is improved along with reduced clean up requirements at the completion of the project.

**APPLICATIONS**
The solid waste management practice for construction sites is based on proper storage and disposal practices by construction workers and supervisors. Key elements of the program are education and modification of improper disposal habits. Cooperation and vigilance is required on the part of supervisors and workers to ensure that the recommendations and procedures are followed. Following are lists describing the targeted materials and recommended procedures:

- Targeted Solid Waste Materials
  - Paper and cardboard containers
  - Plastic packaging
  - Styrofoam packing and forms
  - Insulation materials (non-hazardous)
  - Wood pallets
  - Wood cuttings
  - Pipe and electrical cuttings
  - Concrete, brick, and mortar waste
  - Shingle cuttings and waste
  - Roofing tar
  - Steel (cuttings, nails, rust residue)
  - Gypsum board cuttings and waste
  - Sheathing cuttings and waste
  - Miscellaneous cutting and waste
  - Food waste
  - Demolition waste

*Storage Procedures*
- Wherever possible, minimize production of solid waste materials.
- Designate a foreman or supervisor to oversee and enforce proper solid waste procedures.
- Instruct construction workers in proper solid waste procedures.
- Segregate potentially hazardous waste from non-hazardous construction site debris.

**Applications**
Perimeter Control
Slope Protection
Sediment Trapping
Channel Protection
Temporary Stabilization
Permanent Stabilization
**Waste Management**
Housekeeping Practices

**Targeted Constituents**
- ○ Sediment
- ● Nutrients / Toxic Materials
- ○ Oil & Grease
- ● Floatable Materials
- ● Other Construction Wastes

**Implementation Requirements**
- Capital Costs
- Maintenance
- Training
- ○ Suitability for Slopes >5%

**Legend**
- ● Significant Impact
- ◐ Medium Impact
- ○ Low Impact
- ? Unknown or Questionable Impact

BMP 22

City of Baton Rouge Parish of East Baton Rouge

Department of Public Works

## Hazardous Waste Management

**DESCRIPTION**
The hazardous waste management BMP addresses the problem of storm water polluted with hazardous waste through spills or other forms of contact. The objective of the Management Program is to minimize the potential of stormwater contamination from common construction site hazardous wastes through appropriate recognition, handling, storage and disposal practices.

It is not the intent of this Management Program to supersede or replace normal site assessment and remediation procedures. Significant spills and/or contamination warrant immediate response by trained professionals. Suspected job-site contamination should be immediately reported to regulatory authorities and protective actions taken. The General Permit requires reporting of significant spills to the National Response Center (NRC) at (800) 424-8802.

**PRIMARY USE**
These management practices along with applicable OSHA and EPA guidelines should be incorporated at all construction sites which use or generate hazardous wastes. Many wastes such as fuel, oil, grease, fertilizer and pesticide are present at most construction sites.

**INSTALLATION, APPLICATION AND DISPOSAL CRITERIA**
The hazardous waste management techniques presented here are based on proper recognition, handling, and disposal practices by construction workers and supervisors. Key elements of the management program are education, proper disposal practices, as well as provisions for safe storage and disposal. Following are lists describing the targeted materials and recommended procedures:

- Targeted Hazardous Waste Materials
  - Paints
  - Solvents
  - Stains
  - Wood preservatives
  - Cutting oils
  - Greases
  - Roofing tar
  - Pesticides
  - Paste & lube oils
  - Lead based paints (Demolition)

*Storage Procedures*
- Wherever possible, minimize use of hazardous materials.
- Minimize generation of hazardous wastes on the job-site.
- Segregate potentially hazardous waste from non-hazardous construction site debris.

**Applications**
Perimeter Control
Slope Protection
Sediment Trapping
Channel Protection
Temporary Stabilization
Permanent Stabilization
**Waste Management**
Housekeeping Practices

**Targeted Constituents**
- ○ Sediment
- ● Nutrients / Toxic Materials
- ● Oil & Grease
- ○ Floatable Materials
- ● Other Construction Wastes

**Implementation Requirements**
- Capital Costs
- Maintenance
- Training
- ○ Suitability for Slopes >5%

**Legend**
- ● Significant Impact
- ◐ Medium Impact
- ○ Low Impact
- ? Unknown or Questionable Impact

BMP 23

City of Baton Rouge Parish of East Baton Rouge

Department of Public Works

## Concrete Waste Management

**DESCRIPTION**
Concrete waste at construction sites comes in two forms: 1) excess fresh concrete mix including truck and equipment washing, and 2) concrete dust and concrete debris resulting from demolition. Both forms have the potential to impact water quality through storm water runoff contact with the waste.

**PRIMARY USE**
Concrete waste is present at most construction sites. This BMP should be utilized at sites in which concrete waste is present.

**APPLICATIONS**
A number of water quality parameters can be affected by introduction of concrete - especially fresh concrete. Concrete affects the pH of runoff, causing significant chemical changes in water bodies and harming aquatic life. Suspended solids in the form of both cement and aggregate dust are also generated from both fresh and demolished concrete waste.

*Current Unacceptable Waste Concrete Disposal Practices*
- Dumping in vacant areas on the job-site
- Illicit dumping off-jobsite
- Dumping into ditches or drainage facilities

*Recommended Disposal Practices*
- Avoid unacceptable disposal practices listed above.
- Develop pre-determined, safe concrete disposal areas.
- Provide a washout area with a minimum of 5 cubic feet of containment area volume for every 10 cubic yards of concrete poured.
- Never dump waste concrete illicitly or without property owners knowledge and consent.
- Treat runoff from storage areas through the use of structural controls as required.

*Education*
- Drivers and equipment operators should be instructed on proper disposal and equipment washing practices (see above).
- Supervisors must be made aware of the potential environmental consequences of improperly handled concrete waste.

*Enforcement*
- The construction site manager or foreman must ensure that employees and pre-mix companies follow proper procedures for concrete disposal and equipment washing.
- Employees violating disposal or equipment cleaning directives must be re-educated or disciplined if necessary.

**Applications**
Perimeter Control
Slope Protection
Sediment Trapping
Channel Protection
Temporary Stabilization
Permanent Stabilization
**Waste Management**
Housekeeping Practices

**Targeted Constituents**
- ○ Sediment
- ○ Nutrients / Toxic Materials
- ○ Oil & Grease
- ○ Floatable Materials
- ● Other Construction Wastes

**Implementation Requirements**
- Capital Costs
- Maintenance
- Training
- ○ Suitability for Slopes >5%

**Legend**
- ● Significant Impact
- ◐ Medium Impact
- ○ Low Impact
- ? Unknown or Questionable Impact

BMP 24

City of Baton Rouge Parish of East Baton Rouge

Department of Public Works

## Solid Waste Management

- Keep solid waste materials under cover in either a closed dumpster or other enclosed trash container that limits contact with rain and runoff.
- Store waste materials away from drainage ditches, swales and catch basins.
- Do not allow trash containers to overflow.
- Do not allow waste materials to accumulate on the ground.
- Prohibit littering by workers and visitors.
- Police site daily for litter and debris.
- Enforce solid waste handling and storage procedures.

*Disposal Procedures*
- If feasible, segregate recyclable wastes from non-recyclable waste materials and dispose of properly.
- General construction debris may be hauled to a licensed construction debris landfill (typically less expensive than a sanitary landfill).
- Use waste facilities approved by local jurisdiction.
- Runoff which comes into contact with unprotected waste shall be directed into structural treatment such as silt fence to remove debris.

*Education*
- Educate all workers on solid waste storage and disposal procedures.
- Instruct workers in identification of solid waste and hazardous waste.
- Have regular meetings to discuss and reinforce disposal procedures (incorporate in regular safety seminars).
- Clearly mark on all solid waste containers which materials are acceptable.

*Quality Control*
- Foreman and/or construction supervisor shall monitor on-site solid waste storage and disposal procedures.
- Discipline workers who repeatedly violate procedures.

*Requirements*
- Job-site waste handling and disposal education and awareness program.
- Commitment by management to implement and enforce Solid Waste Management Program.
- Compliance by workers.
- Sufficient and appropriate waste storage containers.
- Timely removal of stored solid waste materials.
- Possible modest cost impact for additional waste storage containers.
- Small cost impact for training and monitoring.
- Minimal overall cost impact.

**LIMITATIONS**

Only addresses non-hazardous solid waste.
One part of a comprehensive construction site management program.

BMP 22

Department of Public Works

## Hazardous Waste Management

- Designate a foreman or supervisor to oversee hazardous materials handling procedures.
- Keep liquid or semi-liquid hazardous waste in appropriate containers (closed drums or similar) and under cover.
- Store waste materials away from drainage ditches, swales and catch basins.
- Use containment berms in fueling and maintenance areas and where the potential for spills is high.
- Ensure that adequate hazardous waste storage volume is available.
- Ensure that hazardous waste collection containers are conveniently located.
- Do not allow potentially hazardous waste materials to accumulate on the ground.
- Enforce hazardous waste handling and disposal procedures.
- Clearly mark on all hazardous waste containers which materials are acceptable for the container.

*Disposal Procedures*
- Regularly schedule hazardous waste removal to minimize on-site storage.
- Use only reputable, licensed hazardous waste haulers.

*Education*
- Instruct workers in identification of hazardous waste.
- Educate workers of potential dangers to humans and the environment from hazardous wastes.
- Instruct workers on safety procedures for common construction site hazardous wastes.
- Educate all workers on hazardous waste storage and disposal procedures.
- Have regular meetings to discuss and reinforce identification, handling and disposal procedures (incorporate in regular safety seminars).
- Establish a continuing education program to indoctrinate new employees.

*Quality Assurance*
- Foreman and/or construction supervisor shall monitor on-site hazardous waste storage and disposal procedures.
- Educate and if necessary, discipline workers who violate procedures.
- Ensure that the hazardous waste disposal contractor is reputable and licensed.

*Requirements*
- Job-site hazardous waste handling and disposal education and awareness program.
- Commitment by management to implement hazardous waste management practices.
- Compliance by workers.
- Sufficient and appropriate hazardous waste storage containers.
- Timely removal of stored hazardous waste materials.

*Costs*
- Possible modest cost impact for additional hazardous storage containers.
- Small cost impact for training and monitoring.
- Potential cost impact for hazardous waste collection and disposal by licensed hauler - actual cost depends on type of material and

BMP 23

Department of Public Works

## Concrete Waste Management

*Demolition Practices*
- Monitor weather and wind direction to ensure concrete dust is not entering drainage structures and surface waters.
- Where appropriate, construct sediment traps or other types of sediment detention devices downstream of demolition activities.

*Requirements*
- Use a pre-determined disposal site(s) approved by LADEQ for waste concrete (See BMP 22 Solid Waste Management). Inform PROGRAM MANAGER of selected disposal site(s).
- Prohibit dumping waste concrete anywhere but pre-determined areas.
- Assign pre-determined truck and equipment washing areas.
- Educate drivers and operators on proper disposal and equipment cleaning procedures.

*Costs*
- Minimal cost impact for training and monitoring.
- Concrete disposal cost depends on availability and distance to suitable disposal areas.
- Additional costs involved in equipment washing could be significant.

**LIMITATIONS**
This concrete waste management program is one part of a comprehensive construction site waste management program.

BMP 24

Department of Public Works

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2/12/2008

| STANDARD PLAN NO. | DATED | SHEET NO. |
|---|---|---|
| 903–01 | FEBRUARY 25, 2008 | 8 OF 11 |

STORM WATER POLLUTION PREVENTION PLAN
BEST MANAGEMENT PRACTICES

ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS
CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE

| DATE | DESCRIPTION REVISIONS | BY | DESIGNED | DRAWN | CHECKED | APPROVED |
|---|---|---|---|---|---|---|
| | | | G. CHENG | G. VANNICE | G. CHENG | T. STEPHENS |

903–01

## Sandblasting Waste Management

**DESCRIPTION**

The objective of this management program is to minimize the potential of storm water quality degradation from sandblasting activities at construction sites. The key issues in this program are prudent handling and storage of sandblast media, dust suppression, and proper collection and disposal of spent media. It is not the intent of this program to outline all of the worker safety issues pertinent to this practice. Safety issues should be addressed by construction safety programs as well as local, state, and federal regulations.

**INSTALLATION/APPLICATION CRITERIA**

Since the media consists of fine abrasive granules, it can be easily transported by air and running water. Sandblasting activities typically create a significant dust problem which must be contained and collected to prevent off-site migration of these.

*Operational Procedures*

- Use only inert, non-degradable sandblast media.
- Use appropriate equipment for the job, do not over-blast.
- Wherever possible, blast in a downward direction.
- Install a wind sock or other wind direction instrument.
- Cease blasting activities in high winds or if wind direction could transport grit to drainage facilities.
- Install dust shielding around sandblasting areas.
- Collect and dispose of all spent sandblast grit, use dust containment fabrics and dust collection hoppers and barrels.
- Non-hazardous sandblast grit may be disposed in permitted construction debris landfills or permitted sanitary landfills.
- If sandblast media cannot be fully contained, construct sediment traps downstream from blasting area where appropriate.
- Use fencing where appropriate in areas where blast media cannot be fully contained.
- If necessary, install misting equipment to remove sandblast grit from the air - prevent runoff from misting operations from entering drainage systems.
- Use vacuum grit collection systems where possible.
- Keep records of sandblasting materials, procedures, and weather conditions on a daily basis.
- Take all reasonable precautions to ensure that sandblasting grit is contained and kept away from drainage structures.

*Educational Issues*

- Educate all on-site employees of potential dangers to humans and the environment from sandblast grit.

**Applications**
Perimeter Control
Slope Protection
Sediment Trapping
Channel Protection
Temporary Stabilization
Permanent Stabilization
Waste Management
Housekeeping Practices

**Targeted Constituents**
○ Sediment
● Nutrients
Toxic Materials
○ Oil & Grease
○ Floatable Materials
● Other Construction Wastes

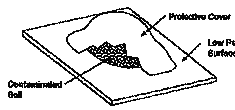
**Implementation Requirements**
● Capital Costs
● Maintenance
● Training
○ Suitability for Slopes >5%

**Legend**
● Significant Impact
◐ Medium Impact
○ Low Impact
? Unknown or Questionable Impact

BMP 25

City of Baton Rouge Parish of East Baton Rouge
Department of Public Works

## Contaminated Soil Management




**DESCRIPTION**
Prevent or reduce the discharge of pollutants to storm water from contaminated soil and highly acidic or alkaline soils by conducting pre-construction surveys, inspecting excavations regularly, and remediating contaminated soil promptly.

**APPLICATIONS**
Contaminated soils may occur on your site for several reasons including:

- Past site uses and activities.
- Detected or undetected spills and leaks; and

**DESIGN CRITERIA**

- Conduct thorough site planning including pre-construction geologic surveys.
- Look for contaminated soil as differences in soil properties.
- Seal bedrock fractures with grout or bentonite to reduce seepage from excavation.
- Prevent leaks and spills to the maximum extent practicable. Contaminated soil can be expensive to treat and/or dispose of properly. However, addressing the problem before building construction is much less expensive than after the buildings are in place.
- Test suspected soils at a certified laboratory.
- If the soil is contaminated, work with the local regulatory agencies to develop options for treatment and/or disposal.

**LIMITATIONS**
If necessary, use a private spill cleanup company.

**MAINTENANCE REQUIREMENTS**
Contaminated soils that cannot be treated on-site must be disposed of off-site by a licensed hazardous waste hauler.
The presence of contaminated soil may indicate contaminated water as well.

**Applications**
Perimeter Control
Slope Protection
Sediment Trapping
Channel Protection
Temporary Stabilization
Permanent Stabilization
Waste Management
Housekeeping Practices

**Targeted Constituents**
○ Sediment
◐ Nutrients
Toxic Materials
○ Oil & Grease
○ Floatable Materials
◐ Other Construction Wastes

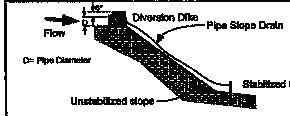
**Implementation Requirements**
● Capital Costs
○ Maintenance
◐ Training
○ Suitability for Slopes >5%

**Legend**
● Significant Impact
◐ Medium Impact
○ Low Impact
? Unknown or Questionable Impact

BMP 26

City of Baton Rouge Parish of East Baton Rouge
Department of Public Works

## Pipe Slope Drain




**DESCRIPTION**
A pipe slope drain is a temporary pipe line typically utilizing flexible pipe that conveys runoff down unstabilized slopes. The drain is anchored on the upstream end with some form of headwall to limit erosion and secure the pipe.

**PRIMARY USE**
A pipe slope drain is used on sites with a long, unstabilized, steep slope area which is subject to erosion from overland flow. It is normally used in combination with interceptor swales or diversion dikes to direct the flow into the pipe slope. The pipe slope drain can provide service for a relatively large area. It does not treat the runoff, therefore if the runoff contains sediment, treatment through a controlled outlet will be required before the flow is released offsite.

**APPLICATIONS**
Sites with large banks or grade changes such as roadway embankments are candidates for a pipe slope drain. Slope protection must be made to direct the flow into the pipe drain, some grading is normally required upstream of the pipe slope drain. Installed properly, slope erosion can be greatly reduced (but not entirely eliminated) through the use of the drain.

Pipe slope drains also require a stabilized outlet. This is critical since the velocities at the outfall are normally high. Velocity dissipators as well as stone or concrete rip rap are typically required to reduce the velocity and spread the flow, reducing erosion. Flow from a pipe slope drain should be routed to a sediment reduction practice through interceptor swales, diversion dikes or other suitable methods.

**DESIGN CRITERIA**

- The entrance to the pipe slope drain may be a standard corrugated metal pre-fabricated flared end section with an integral toe plate extending a minimum of 6 inches from the bottom of the end section. The grade of the entrance shall be 5 percent maximum.
- The base of the entrance shall have a minimum height of the pipe diameter + 6" and a minimum width of 3 times the pipe diameter.
- All sections of the pipe slope drain shall be connected using watertight collars or gasketed watertight fittings.
- All sediment laden runoff conveyed by the pipe slope drain shall be directed to a sediment trapping facility.
- Temporary pipe slope drains are to be sized to accommodate runoff flows equivalent to a 10 year storm as calculated using the Rational Method and

**Applications**
Perimeter Control
Slope Protection
Sediment Trapping
Channel Protection
Temporary Stabilization
Permanent Stabilization
Waste Management
Housekeeping Practices

**Targeted Constituents**
● Sediment
○ Nutrients
Toxic Materials
○ Oil & Grease
◐ Floatable Materials
○ Other Construction Wastes

**Implementation Requirements**
● Capital Costs
● Maintenance
○ Training
● Suitability for Slopes >5%

**Legend**
● Significant Impact
◐ Medium Impact
○ Low Impact
? Unknown or Questionable Impact

BMP 28

City of Baton Rouge Parish of East Baton Rouge
Department of Public Works

## Sandblasting Waste Management

- Instruct all on-site employees of the potential hazardous nature of sandblast grit and the possible symptoms of over-exposure to sandblast grit.
- Instruct operators of sandblasting equipment on safety procedures and personal protective equipment.
- Instruct operators on proper procedures regarding storage, handling and containment of sandblast grit.
- Instruct operators to recognize unfavorable weather conditions regarding sandblasting activities.
- Instruct operators and supervisors on current local, state and federal regulations regarding fugitive dust and hazardous waste from sandblast grit.
- Have weekly meeting with operators to discuss and reinforce proper operational procedures.
- Establish a continuing education program to indoctrinate new employees.

*Materials Handling Recommendations*

- Sandblast media should always be stored under cover away from drainage structures.
- Ensure that stored media or grit is not subject to transport by wind.
- Ensure that all sandblasting equipment as well as storage containers comply with current local, state and federal regulations.
- Refer to Hazardous Waste BMP hazardous components.
- Capture and treat runoff which comes into contact with sandblasting material or waste.

*Quality Assurance*

- Foreman and/or construction supervisor should monitor all sandblasting activities and safety procedures.
- Educate and if necessary, discipline workers who violate procedures.
- Take all reasonable precautions to ensure that sandblast grit is not transported off-site or into drainage facilities.

*Requirements*

- Education and awareness program for all employees regarding control of sandblasting and potential dangers to humans and the environment.
- Operator and supervisor education program for those directly involved in sandblasting activities.
- Instructions on material handling, proper equipment operation, personal protective equipment, fugitive dust control, record keeping and reporting.
- Proper sandblast equipment for the job.
- Site-specific fugitive dust control and containment equipment.
- Site-specific fugitive dust control procedures.
- Compliance by supervisors and workers.

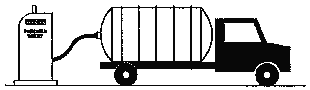
*Costs*

- Minimal cost for training and monitoring.
- Potential for significant cost for containment procedures on large jobs.
- Potential for significant costs associated with cleanup, correction and remediation if contamination occurs.

BMP 25

Department of Public Works

## Sanitary/Septic Waste Management



**DESCRIPTION**
Prevent or reduce the discharge of pollutants to storm water from sanitary/septic waste by providing convenient, well-maintained facilities, and arranging for regular service and disposal.

**APPLICATION**
This BMP is

**DESIGN CRITERIA**

- Sanitary or septic wastes should be treated or disposed of in accordance with State and local requirements.
- Locate sanitary facilities in a convenient location.
- Untreated raw sewage should never be discharged or buried.
- Temporary sanitary systems should treat wastes to appropriate levels before discharging.
- If using an on-site disposal system (OSDS), such as a septic system, contact the
- If discharging to the sanitary sewer, contact the local sewage treatment plant for their requirements.
- Sanitary/septic facilities should be maintained in good working order by a licensed service.
- Arrange for regular waste collection by a licensed hauler before facilities overflow.

**LIMITATIONS**
There are no major limitations to this best management practice.

**MAINTENANCE REQUIREMENTS**
Inspect facilities regularly. Arrange for regular waste collection.

**Applications**
Perimeter Control
Slope Protection
Sediment Trapping
Channel Protection
Temporary Stabilization
Permanent Stabilization
Waste Management
Housekeeping Practices

**Targeted Constituents**
○ Sediment
● Nutrients
Toxic Materials
○ Oil & Grease
○ Floatable Materials
○ Other Construction Wastes

**Implementation Requirements**
○ Capital Costs
◐ Maintenance
○ Training
◐ Suitability for Slopes >5%

**Legend**
● Significant Impact
◐ Medium Impact
○ Low Impact
? Unknown or Questionable Impact

BMP 27

City of Baton Rouge Parish of East Baton Rouge
Department of Public Works

## Pipe Slope Drain

Meanings equation, but in no case shall pipes be sized smaller than is shown in the following table

| Minimum Pipe Size | Maximum Contributing Drainage Area |
|---|---|
| 12" | 0.5 Acres |
| 18" | 1.5 Acres |
| 24" | 2.5 Acres |
| 24" | 3.5 Acres |
| 30" | 6.0 Acres |

- Maximum drainage area for individual pipe slope drains shall be 5 acres. For areas larger than 5 acres, additional drains shall be added.
- Both the entrance and outfall of the pipe slope drain should be properly stabilized. Grass can normally be used at the entrance, but armor type stabilization such as stone or concrete rip rap is normally required to address the high velocities of the outfall.
- An effectiveness rating is based on the ratio of storm water routed away from the slope and into the pipe drain versus the total area of the drainage basin. A minimum value of 0.40 and a maximum value of 0.85 is used for the rating.

**LIMITATIONS**

- Drains must be located away from construction areas since the drain can easily be damaged by construction traffic.
- Securing the pipe to the slope can be difficult and requires significant maintenance during the life of the system.
- In situations where pipe slope drains convey sediment laden runoff, pipes can become clogged during large rain events causing water to overtop the diversion dike thereby creating a serious erosion condition.
- Grading is normally required upstream of the pipe slope drain in order to direct flow into the system. This can cause additional cost and maintenance.
- A pipe slope drain reduces erosion but does not prevent it or reduce the amount of sediment in runoff. Additional measures should be used in conjunction with the pipe slope drain to treat the flow.

**MAINTENANCE REQUIREMENTS**
Inspection must be made of the pipe after each significant (>0.5 inch) rain event to locate and repair damage to inlets or clogging of the pipe. In cases where the diversion dike has deteriorated from around the entrance of the pipe, it may be necessary to reinforce the dike with sandbags or to install a concrete collar to prevent failure. Signs of erosion around the pipe drain should be addressed in a timely manner by stabilizing the area with erosion control mats, crushed stone, concrete or other acceptable method.

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STORM WATER POLLUTION PREVENTION PLAN
BEST MANAGEMENT PRACTICES

ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS
CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE

| DESIGNED | DRAWN | CHECKED | APPROVED |
|---|---|---|---|
| G. CHENG | G. VANNICE | G. CHENG | T. STEPHENS |

| DATE | DESCRIPTION REVISIONS | BY |
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## Permanent Structural Controls


**DESCRIPTION**
Permanent erosion techniques consist of a wide variety of erosion prevention methods including gabions, retaining walls, and rip rap. These are not included as individual BMPs since they go beyond construction phase measures and due to the fact that their use is widespread in the region and the variety of design factors influencing design.

**PRIMARY USE**
Permanent erosion control is required at the completion of the construction phase of the project. This includes permanent structural methods as well as non-structural methods such as vegetation.

**APPLICATIONS**
Due to high installation cost and long term maintenance, permanent structural methods should be used only when necessary to address severe erosive conditions. In certain instances however, retaining walls are an effective method to reduce site slopes, reducing runoff velocity. Gabions and concrete rip-rap are effective in reducing stream bank erosion under severe concentrated flow conditions and at pipe outfalls.

**DESIGN CRITERIA**
Most structural controls such as gabions and rip-rap are designed based on the velocity of flow and the size of the stone used. Project plans will address this as part of standard details. Specifications for rip rap will be provided in design specifications for stone size based on the design velocity of flow across the structure. Manufacturers' information addresses stone size along with basket dimensions for gabions.

Design of retaining walls is based on a variety of structural conditions including soil compressive strength, unit height and water table influence. Tables of dimensions for retaining walls based on site conditions are available from a variety of sources including the Concrete Reinforcing Steel Institute (CRSI).

A critical aspect with regards to the design of many permanent controls is adequate anchoring of the structure to prevent undermining of the

**Applications**
- Perimeter Control
- Slope Protection
- Sediment Trapping
- Channel Protection
- Temporary Stabilization
- Permanent Stabilization
- Waste Management
- Housekeeping Practices

**Targeted Constituents**
- (●) Sediment
- ( ) Nutrients Toxic Materials
- ( ) Oil & Grease
- ( ) Floatable Materials
- ( ) Other Construction Wastes

**Implementation Requirements**
- (●) Capital Costs
- (●) Maintenance
- ( ) Training
- (●) Suitability for Slopes >5%

**Legend**
- (●) Significant Impact
- (◐) Medium Impact
- ( ) Low Impact
- (?) Unknown or Questionable Impact

**BMP**
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City of Baton Rouge Parish of East Baton Rouge

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## Temporary Sediment Tank


**DESCRIPTION**
A temporary sediment tank (TST) is a large trunk mounted tank used to hold sediment laden water to provide for sedimentation and filtration. For smaller applications, 55 gallon drums or other water tight container can be used for storage. Water is pumped into the tank where it is detained. If desired an outlet with a geotextile filter can be provided to release the flow after a period of detention.

**PRIMARY USE**
A TST is typically used at construction sites in urban areas where conventional methods of sediment removal (e. g., sediment traps, sediment basins) are not practical.

**APPLICATIONS**
Applications for a TST include utility construction in confined areas (such as a business district or large developed area) or localized construction in which other BMPs are not required such as small, dispersed construction (tank farms). This includes passage from excavation in heavily developed areas, such as a central business district, with flows due to groundwater or runoff entering the trench or excavated area.

**DESIGN CRITERIA**
- A TST can be used as either a sedimentation or filtration device. If an oil sheen is present in the runoff, additional treatment will be required before release of runoff.
- For use as a small scale sedimentation basin, de-watering discharge is directed into the TST to a level below the tank midpoint and held for a minimum of 2 hours to allow settlement of a majority of the suspended particles. The tank should be designed for a controlled release when the contents of the tank reach a level higher than the midpoint. When sediment occupies 1/3 the capacity of the TST, it should be removed from the tank.
- As a filtration device, a TST is used for collecting de-watering discharge and flowing it through a filtered opening at the outlet of

**Applications**
- Perimeter Control
- Slope Protection
- Sediment Trapping
- Channel Protection
- Temporary Stabilization
- Permanent Stabilization
- Waste Management
- Housekeeping Practices

**Targeted Constituents**
- (●) Sediment
- ( ) Nutrients Toxic Materials
- ( ) Oil & Grease
- ( ) Floatable Materials
- ( ) Other Construction Wastes

**Implementation Requirements**
- (●) Capital Costs
- (●) Maintenance
- ( ) Training
- (●) Suitability for Slopes >5%

**Legend**
- (●) Significant Impact
- (◐) Medium Impact
- ( ) Low Impact
- (?) Unknown or Questionable Impact

**BMP**
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City of Baton Rouge Parish of East Baton Rouge

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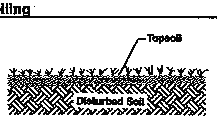
## Topsoiling




**STANDARD FOR TOPSOILING[1]**

**TOPSOILING**

**Definitions:** Topsoiling is the stripping, storing and spreading of fertile topsoil over disturbed areas.

**Purpose:** Topsoiling will provide a more suitable soil medium if the existing or constructed surface is unfavorable for plant growth. Topsoiling will greatly increase the success of establishing good vegetations, help reduce soil erosion, and enhance the beauty of the development.

**Conditions Where Practices Applies:**

**Topsoiling is Used Where:**

- The texture and quality of the exposed subsoil or parent material are not suitable for producing adequate vegetative growth.
- The soil material is so shallow that the rooting zone is not deep enough to support plants with continuing supplies of moisture and plant nutrients.
- The soil is extremely acidic or contains material toxic to plant growth.

**Design Criteria**

- **Topsoil Materials**
  The site should be explored to determine if there is sufficient surface soil of good quality to justify stripping. If

**Applications**
- Perimeter Control
- Slope Protection
- Sediment Trapping
- Channel Protection
- Temporary Stabilization
- Permanent Stabilization
- Waste Management
- Housekeeping Practices

**Targeted Constituents**
- (●) Sediment
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- ( ) Other Construction Wastes

**Implementation Requirements**
- (●) Capital Costs
- (●) Maintenance
- ( ) Training
- (●) Suitability for Slopes >5%

**Legend**
- (●) Significant Impact
- (◐) Medium Impact
- ( ) Low Impact
- (?) Unknown or Questionable Impact

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## Permanent Structural Controls

foundation and washout of sediment at the edges of the structure. Where applicable, proper anchoring in the form of embedment or "toe in" of the structure is required.

**LIMITATIONS**
The initial cost is an important consideration in selection of permanent structural controls.

Stream bank erosion protection such as rip rap provides limited protection unless used extensively due to the potential for erosion at the edges of the rip rap.

**MAINTENANCE REQUIREMENTS**
Most stone or concrete structures require little maintenance, but may be subject to vandalism. As mentioned above, erosion around the structure may undermine the integrity of the structure. When maintenance is required, it is typically very extensive and costly.

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## Temporary Sediment Tank

the tank to reduce suspended sediment volume. The filter opening in the TST should have an EOS (see silt fence BMP) of 70 or smaller.

**LIMITATIONS**
This is a specialized technique for the situations listed. It is not cost effective for normal sediment removal conditions.

The use of a temporary sediment tank is limited by the capacity of the tank, the time required for settlement of suspended material, and disposal of the water and the sediment.

**MAINTENANCE REQUIREMENTS**
The temporary sediment tank should be inspected periodically during and after use. A tank should be cleaned out when it becomes 1/3 full of sediment.

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## Topsoiling

additional off-site topsoil is needed, it should meet the following standards as well:

- Topsoil should be friable and loamy (loam, sandy loam, silt loam, sandy clay loam, clay loam).
- Topsoil should be free of debris, objectionable weeds and stones, and contain no toxic substances that may be harmful to plant growth.
- Organic matter content should not be less than 0.75 percent by weight; pH range should be from 5.0 - 7.5.

- **Stripping and Stockpiling**
  Stripping should be confined to the immediate construction area. A 4-6 inch stripping depth is common, but may vary depending on the particular soil.

  Topsoil should be stockpiled so that natural drainage is not obstructed and off-site sediment damage does not occur. stockpile sideslopes should not exceed 2:1. A perimeter silte with a outlet or straw bale barriers should surround the stockpiles. Temporary seeding should be completed within 15 days of stockpile formation.

- **Site Preparation**
  When topsoiling, maintain needed erosion control practices such as diversion dikes, sediment basins, waterways, etc.

  Grading - Grades on the areas to be topsoiled, which have been previously established, should be maintained.

  Liming - Where the pH of the subsoil is .0 or less or the soil is composed of heavy clays, agricultural lime be spread in accordance with the soil test on the vegetative establishment practice being used.

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STORM WATER POLLUTION PREVENTION PLAN
BEST MANAGEMENT PRACTICES

ENGINEERING DIVISION
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## Topsoiling

**Bonding** – After and immediately prior to dumping and spreading the topsoil, the subgrade should be loosened by disking and scarifying to a depth of at least two inches to insure bonding of the topsoil and subsoil.

**Applying Topsoil**
Topsoil should be handled when it is dry enough to work without damaging soil structure. A uniform application of 4 to 6 inches unsettled should be made.

No sod or seed should be placed on soil which has been treated with soil sterilants until sufficient time has elapsed to permit dissipation of toxic materials.

**General Notes**

There are advantages and disadvantages in topsoiling:

- Stripping, stockpiling, reapplying or importing topsoil may not always be cost-effective. Topsoiling can delay seeding or sodding operations and increase the exposure time of denuded areas. Also, most topsoils contain weed seeds, and weeds may compete with desirable species.
- On the other hand, the advantages of topsoil include its high organic matter content, friable nature, water-holding capacity, and nutrient content, which makes it an excellent medium for growth and greatly reduces chances of failure.

Further, preparing a seedbed in subsoil may be considered instead of topsoiling, as some subsoils may provide a good growth medium which is generally free of weed seeds.

If topsoiling is to be done, it should be determined if an adequate volume of topsoil exists on the site. The stockpile should be located for proper non-erosive drainage and such that it does not interfere with work on the site. Sufficient time should be allowed for spreading and bonding topsoil

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## Topsoiling

prior to seeding, sodding or planting; topsoil and subsoil should be properly bonded. Topsoil should not be applied to a subsoil with contrasting texture (ex a clay) unless the surface of the subsoil is scarified to provide a good bond with the topsoil.

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| STANDARD PLAN NO. | DATED | SHEET NO. |
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STORM WATER POLLUTION
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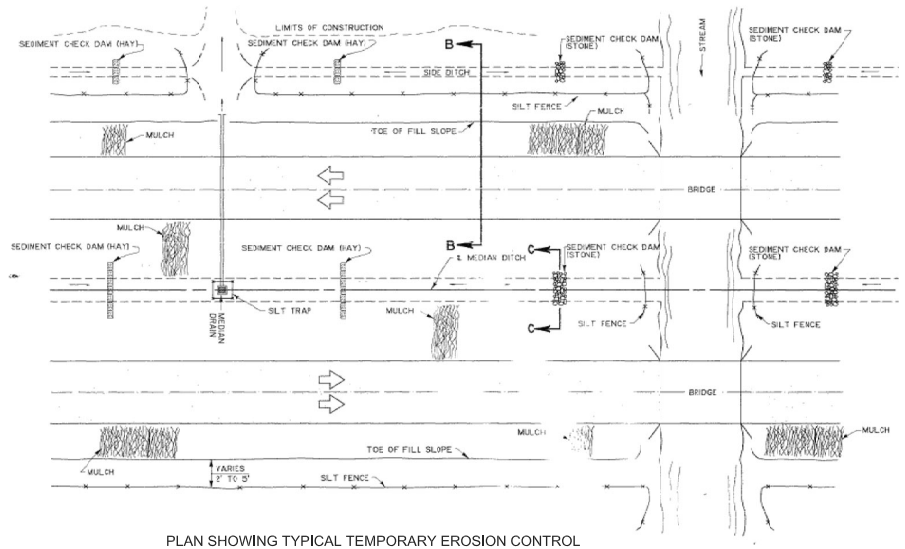
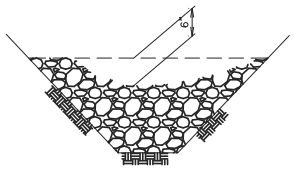



PLAN SHOWING TYPICAL TEMPORARY EROSION CONTROL

MULCHES:
Mulches are the application of mats of material placed on the soil surface to prevent erosion by protecting the soil surface from raindrop impact and to reduce the velocity of overland flow. Mulches can be organic or synthetic. Mulches shall be in accordance with the Standard Specifications for mulches. A few guidelines for the use of Mulches are:

1. Use on cut and embankment slopes which have not been completed to plan grade or where the weather or soil conditions will not permit completing them within a reasonable time;
2. Use on cleared, grubbed, and scalped areas where soil erosion is likely to occur;
3. Use with temporary seeding.

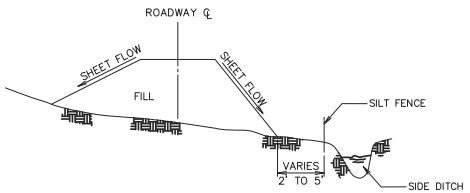



SECTION C–C

TEMPORARY SEDIMENT CHECK DAM (STONE)

NOTES:
A stone check dam is a small temporary dam constructed across a swale or drainage ditch. The purpose of this measure is to reduce the velocity of concentrated stormwater flows, thereby reducing erosion of the of the swale or ditch. The stone check dam will trap small amounts of sediments generated in the ditch itself, however it should not be used as a sediment trapping device. A few basic design guidelines for the use of Stone Check Dams are:

1. Use in small open channels which drain 10 acres or less;
2. Do not use in a live stream;
3. Use in a temporary ditch or swale which, because of their short length of service, cannot receive a non–erodible lining;
4. Use in permanent ditches or swales which will not receive a permanent lining for an extended period of time;
5. use in temporary or permanent ditches or swales which need protection during the establishment of grass linings.
6. For stone specifications, see Section 705, 2lb class.




SECTION B–B

TEMPORARY SILT FENCE APPLICATION

(FOR CONSTRUCTION DETAILS AND SPECIFICATIONS SEE SHEET 2 OF 2)

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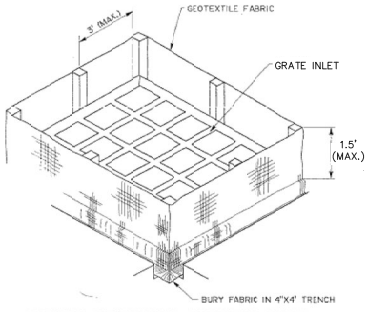
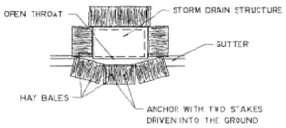
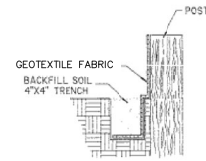



ISONETRIC VIEW SHOWING GEOTEXTILE FABRIC

(BACKFILL SOIL NOT SHOWN)




PLAN SHOWING HAY BALES

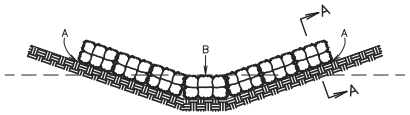



SECTION THRU TRENCH SHOWING GEOTEXTILE FABRIC

NOTES:
The temporary drop inlet silt trap is to be used for small drainage areas (less than 1 acre) where the storm drain is functional before the area is stabilized. The trap can be either geotextile fabric or hay bales.

1. Wooden stakes supporting the fabric shall be 2" X 2" or 2" X 4" with a minimum length of 3 feet. The stakes shall be spaced around the inlet at a maximum spacing of 3 feet;
2. The height of the fabric above the inlet shall be limited to 1.5' and the bottom of the fabric shall be buried in a trench approximately 4" wide by 4" deep. The fabric shall be stapled to the post with ½" staples;
3. The trap should be inspected regularly after each storm. The sediment should be removed and make sure each stake is firmly in the ground.
4. The geotextile fabric shall conform to Type F or G as per Standard Specifications.

TEMPORARY INLET SILT TRAP



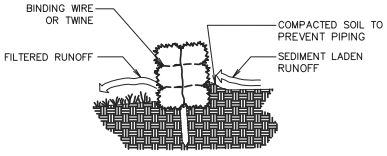

POINTS A SHOULD BE HIGHER THAN POINT B.

ELEVATION

TEMPORARY SEDIMENT CHECK DAM (HAY)

NOTES:
A hay bale barrier is a temporary sediment barrier consisting of a row of entrenched and anchored bales of straw or hay. The hay bale barrier is also used as a check dam to reduce the velocity in small ditches or swales. A few basic design guidelines for the use of a Hay Bale Barrier are:

1. Use where erosion would occur in the form of sheet and rill erosion;
2. Use in minor swales or ditches where the maximum drainage area is 2 acres;
3. Only use where the effectiveness is required for less than 3 months;
4. Do not use in live streams or in swales or ditches where there is a possibility of a washout.




SECTION A–A

LADOTD Standard Plan EC-01 has been adopted with modifications for use by the City/Parish as Standard Plan 903-02.

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CIVIL ENGINEERING
3/16/2015

| STANDARD PLAN NO. | DATED | SHEET NO. |
|---|---|---|
| 903–02 | November 28, 2009 | 1 OF 2 |

TEMPORARY EROSION CONTROL INSTALLATION DETAILS

| DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|
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ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS
CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE

| DESIGNED | DRAWN | CHECKED | APPROVED |
|---|---|---|---|
| G. L. P. | G. VANNICE | G. L. P. | T. STEPHENS |

903–02

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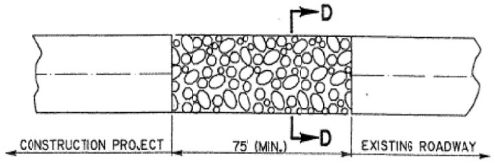
| | 130 |




PLAN


SECTION D–D

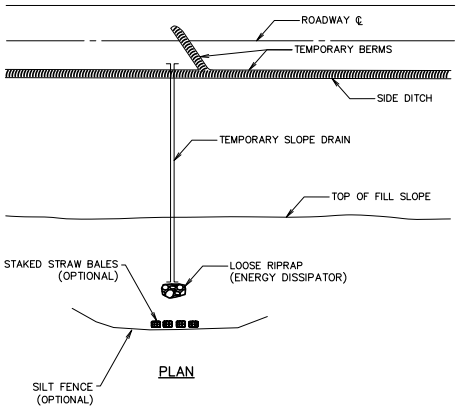
## TEMPORARY STONE CONSTRUCTION ENTRANCE

PAY AS SPECIAL ITEM, TEMPORARY STONE CONSTRUCTION ENTRANCE

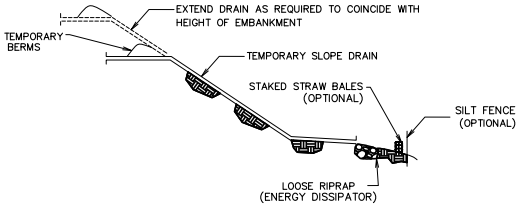
NOTES:
TEMPORARY STONE CONSTRUCTION ENTRANCE AND/OR WASH RACK

A stone stabilized pad located at points of vehicular ingress and egress on the construction site to reduce the amount of mud transported onto public roads. If the action of the vehicle traveling over the gravel pad is not sufficient to remove the majority of the mud, then the tires must be washed before the vehicle enters a public road. A few basic design guidelines for the use of a Stone Construction Entrance and/or Wash Racks are:

1. The stone layer must be a least 6 inches thick;
2. The length of the pad must be at least 75 feet and it must extend the Width of the vehicular ingress and egress;
3. A geotextile fabric underliner is required. The geotextile fabric shall be Type D or per the Standard Specifications;
4. If a wash rack is necessary, provisions must be made to intercept the wash Water and trap the sediment before it is carried off–site.
6. For stone specifications, see Section 705, 2lb class.




PLAN




ELEVATION

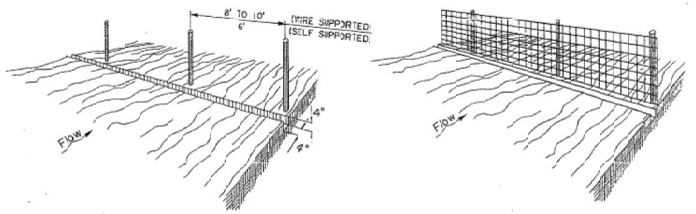
## TEMPORARY SLOPE DRAIN

NOTES:
A temporary slope drain is a device used to carry water from the construction work area to a lower elevation. Slope drains may be plastic sheets, metal or plastic pipe, stone gutters, fiber mats, or concrete or asphalt ditches. A few basic design guidelines for the use of a Temporary Slope Drain are:

1. The spacing of the slope drains varies with the road grade.
   For Grades: 0.0% – 2.0% use 500' spacing
   2.1% – 5.0% use 200' spacing
   Greater than 5.0% use 100' spacing
2. Slope drain material: Smooth pipe – 8" minimum
   Corrugated pipe –12" minimum
   Plastic sheeting –4' wide minimum
   Plastic sheeting –3 mils thick minimum
3. Plastic sheeting can be staked down or weighted with rocks or Logs. The area under the sheeting should be shaped to provide an adequate channel.
4. The outlet end should be protected or have some means of dissipating energy. The flow should be directed through a sediment trap such as silt fence or hay bales.
5. To insure proper operation, temporary slope drains should be inspected regularly and after each storm, for clogging or displacement. Erosion at the outlet should be checked and the silt traps cleaned if necessary.

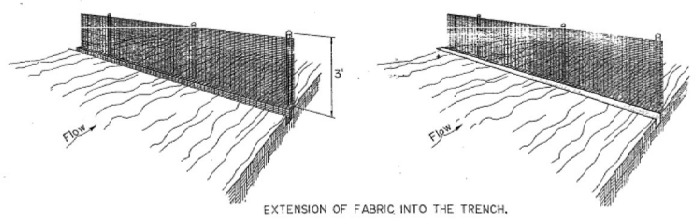
1. SET POSTS AND EXCAVATE A 4" X 4" TRENCH UPSLOPE ALONG THE LINE OF POSTS.

2. STAPLE WIRE FENCING TO THE POSTS.

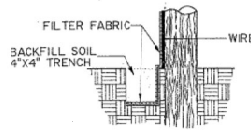



3. ATTACH THE FILTER FABRIC TO THE WIRE FENCE AND EXTEND IT INTO THE TRENCH.

4. BACKFILL AND COMPACT EXCAVATED SOIL.




EXTENSION OF FABRIC INTO THE TRENCH.




## CONSTRUCTION OF TEMPORARY SILT FENCING

(WIRE SUPPORTED SILT FENCE IS SHOWN. SELF SUPPORTED SILT FENCE WILL BE CONSTRUCTED ACCORDING TO MANUFACTURERS SPECIFICATIONS.)

NOTES:
Silt fencing is a temporary sediment barrier consisting of a filter fabric support by post and stretched across an area to intercept and detain small amounts of sediment. Silt fencing shall be in accordance with Section 903 of the Standard Specifications. A few basic guidelines for the use of Silt Fencing are:

1. Use where erosion would occur in the form of sheet and rill Erosion;
2. Use where the maximum drainage area behind the silt fence is ¼ acre per 100 feet of silt fence length;
3. Use where the maximum slope length behind the barrier is 100 feet;
4. Use where the maximum gradient behind the barrier is 2:1;
5. Do not use silt fences in live streams or in ditches or swales where flows exceed one cubic foot per second.

STATE OF LOUISIANA
THOMAS A. STEPHENS
License No. 19417
PROFESSIONAL ENGINEER
CIVIL ENGINEERING
3/12/2013

| DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|
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| STANDARD PLAN NO. | DATED | SHEET NO. |
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| 903–02 | November 28, 2009 | 2 OF 2 |

TEMPORARY EROSION CONTROL INSTALLATION DETAILS

ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS
CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE

| DESIGNED | DRAWN | CHECKED | APPROVED |
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## GENERAL PROVISIONS

- All Temporary Traffic Control (TTC) Devices used shall be in accordance with the City–Parish Standard Specifications for Public Works Construction, the current edition of the Manual on Uniform Traffic Control Devices (MUTCD), and the requirements of the National Cooperative Highways Research Program (NCHRP) 350 for Test Level 3. The MUTCD is available at http:mutcd.fhwa.dot.gov/
- The Contractor shall provide one or more authorized Traffic Control Supervisor (TCS) in accordance with the Standard Specifications.
- Materials used for Temporary Traffic Controls shall be in accordance with the City–Parish Standard Specifications for Public Works Construction and when applicable the City–Parish Qualified Products List (C–P QPL).
- No temporary traffic controls shall be erected without the approval of the City–Parish Traffic Engineer and until work is about to begin, unless they are covered.
- No lane closures, lane shifts, diversions, or detours shall occur without the authorization of the City–Parish Traffic Engineer.
- Responsibility is hereby placed upon the contractor for the installation, maintance, and operation of all temporary traffic control devices called for in these plans or required by the Project Engineer for the protection of the traveling public as well as all Department and construction personal. All reflective devices such as signs, drums, barricades, vertical panels, delineators of any type, etc. shall be cleaned or washed periodically to maintain their effectiveness, as required by conditions or Project Engineer.
- The contractor shall also be responsible for the maintenance of all permanent signs and pavement markings left in place as essential to the safe movement and guidance of traffic within the project limits.
- The City–Parish Traffic Engineer shall serve as a technical advisor to the Project Engineer for all Traffic Control matters.
- "Road Work XX Miles" sign shall be required on all projects and located at beginning of the project unless otherwise noted. The sign shall be a minimum Thirty–Six (36) inch X Sixty (60) inch unless otherwise noted.
- Warning signs used for lane closures or lane shifts in which the roadway shall be returned to full public use within Fourteen (14) hours or less may be placed on NCHRP350 approved portable sign frames.
- The City–Parish will approve any detour route marking required to guide travelers around the construction area, but the contractor will be responsible for the required signage.

## SPEED LIMITS

- Speed limits shall be lowered by Ten (10) mph for any construction, maintenance, or utility operation that requires one or more of the following: (A) the condition of the original highway is degraded due to milled surfaces or uneven pavements; (B) work is in progress in the immediate vicinity of the travel way requiring lane closures, lane width reductions, or low speed diversions; (C) workers present on the shoulder within Two (2) ft of the edge of traveled way without barrier protection.
- The reduced speed zone shall only apply to those portions of the project limits affected. The Project Engineer may allow SPEED LIMIT WHEN FLASHING signs to supplement reduced speed zones.
- At the end of the reduced speed zone, a speed limit sign displaying the original speed limit before construction shall be installed.
- If conditions warrant, the City–Parish Traffic Engineer may authorize the reduction of the speed limit by more than Ten (10) mph.

## PAVEMENT MARKINGS (see C–P QPL)

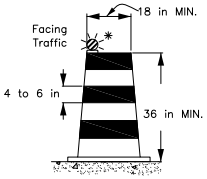
- All pavement markings within the limits of the project that are in conflict with the project signing or the required traffic movements shall be removed from the pavement by blast cleaning or grinding (Existing striping shall not be painted over with black paint or covered with tape).
- If special pavement markings are needed, they shall be reflectorized, removable, and accompanied by the proper signage.
- Temporary Raised Pavement Markers (RPMs) may be added to supplement temporary striping in areas of transition, in tapers, in detours, and in other areas of need as directed by the Project Engineer.
- Materials and placement of temporary pavement markings shall conform to Section 905 of the Standard Specifications. If no pay item exists, temporary markings will be considered incidental to traffic control.

## SIGNS

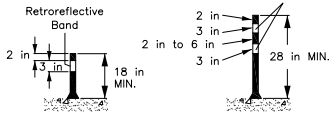
- All signs used for temporary traffic controls shall follow the Department's Standard Plans and the MUTCD. Signs shown in the Standard Plan illustrations are typical and may vary with each specific condition.
- More appropriate signing for a specific condition may be required or substituted with the approval of the Project Engineer and reviewed by the City–Parish Traffic Engineer.
- When projects are separated by less than one mile, they shall be signed as one project.
- At no time shall signs warning against a particular operation be left in place once the operation has been completed or where the obstacle has been removed.
- Signs over Ten (10) sq ft shall be mounted on two post and signs over Twenty (20) sq ft shall be mounted on at least three post.
- Signs shall have a minimum of Two (2) bolts per post.
- Permanent signs no longer applicable or in conflict shall be removed or covered with a strong, lightweight, opaque material.
- Warning signs used for temporary traffic controls shall meet the following guidelines unless otherwise noted in the plans: (A) size shall be Forty–Eight (48) ft X Forty–Eight (48) ft, (B) see the Departments Standard Specifications and the C–P QPL for sheeting information, (C) a minimum of a Two (2) lb U–Channel post may be used driven to a minimum depth of Three (3) ft, (D) sign height shall be a minimum of Five (5) ft above the roadway surface unless there is a concern for pedestrians or bicycle traffic in which it shall be a minimum of Seven (7) ft, (E) lateral distance of signs shall be a minimum of Six (6) ft from the edge of shoulder or edge of pavement if no shoulder exist and Two (2) ft from the back of curb in urban areas.
- Vinyl Roll Up signs will be allowed for short term (less than Twelve (12) hours) daytime work provided that they meet all size, color, retroreflectivity requirements, and NCHRP 350.
- Mesh rollup signs shall not be allowed on any project.
- All signs shall be removed or covered when no longer applicable.
- Contractor shall use caution not to damage existing signs which remain in place. Any signs damaged by work operations shall be replaced at the Contractor's expense.

## CHANNELIZING DEVICES

- The following devices may be used: Tubular Markers, Vertical panels, Cones, Drums, and Super Cones. Drums (at standard spacing) and Super Cones (at 1/2 Standard spacing) are the only devices allowed to be used in taper area on the interstate system during daylight hours. Only drums can be used in tapers during night operations.
- Retroreflective material pattern used on super cones shall match that used on drums and conform to Section 1020–1.2(C) of the Standard Specifications.
- Spacing of channelizing devices such as cones, panels, drums, and Type I or II barricades shall not exceed a distance in feet equal to the speed limit when used for taper channelization and a distance in feet of twice the speed limit when used for tangent channelization.
- Twenty–Eight (28) inch traffic cones are not allowed on: 1) interstates, 2) Highways with speeds greater than Forty (40) mph.
- During night time operations: 1) Twenty–Eight (28) inch and Thirty–Six (36) inch cones are not allowed, 2) drums are the only device allowed in the taper.



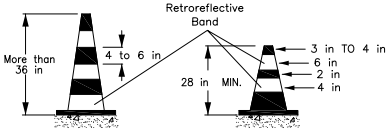

DRUM



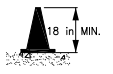

Day and Low–Speed Roadway ≤40 mph

Night and/or Freeway High–Speed Roadway ≥45 mph

TUBULAR MARKERS

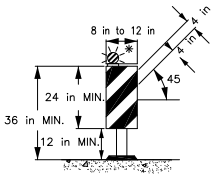



Night and/or Freeway Highway–Speed Roadway ≥45 mph

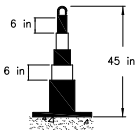



Day and Low–Speed Roadway ≤40 mph

CONES




VERTICAL PANEL

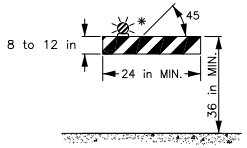



SUPER CONE

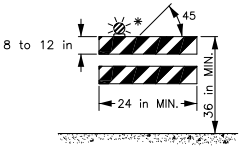
✱ Warning light (optional)

## BARRICADES

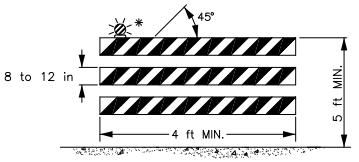
- Barricades shall be designed and applied in accordance with these Standard Plans and the current MUTCD guidance. Generally three types of barricades are used as below. Specific project applications shall be reviewed and approved by the City–Parish Traffic Engineer and shall not deployed without such approval.
- Steady burn lights shall be used when barricades are used in a series for chanelization.
- Type I barricades shall be used on low speed roads or urban streets.
- Type II barricades shall be used on high speed roads.
- Type III barricades shall be used to close a road section to traffic and shall extend completely across a roadway and its shoulders or from curb to curb.
- When signs and lights are to be mounted to a barricade, they must meet NCHRP 350 requirements.




TYPE I BARRICADE ✱✱




TYPE II BARRICADE ✱✱




TYPE III BARRICADE ✱✱

✱ Warning light (optional)

✱✱ Rail stripe widths shall be Six (6) inch, except that Four (4) inch wide stripes may be used if rail lengths are less than Thirty–Six (36) inch. The sides of barricades facing traffic shall have retroreflective rail faces.


September 10, 2020

| DATE | DESCRIPTION REVISIONS | BY |
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| STANDARD PLAN NO. | DATED | SHEET NO. |
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# TEMPORARY TRAFFIC CONTROL

ENGINEERING DIVISION
DEPARTMENT OF TRANSPORTATION AND DRAINAGE
CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE

| DESIGNED | DRAWN | CHECKED | APPROVED |
|---|---|---|---|
| MUTCD | G. C.HENG | S. EDEL | I. PARTENHEIMER |

905–01

| PROJECT NO. | SHEET |
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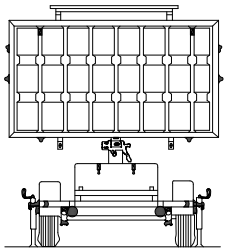
LIGHTING

- All temporary lighting shall be LED.
- Lighting shall supplement barricades that close one or more lanes or that extends across the roadway. A minimum of two lights will be used, but where a travel way ends immediately after a barricade, a minimum of Four (4) lights shall be used. Lighting shall be by approved electrical installations. Battery operated equipment shall conform to NCHRP 350.
- High intensity flashing lights shall be used to mark the first advance warning sign.
- Low intensity flashing lights shall be used to mark all other hazards off the travel way.
- Steady burning lights shall be used on all traffic control devices used for channelizations.
- Flashing units will be mounted as high as possible and battery compartments shall be mounted Six (6) inches from the ground.

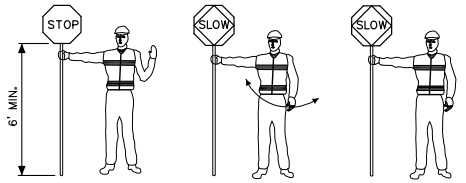
PORTABLE CHANGEABLE MESSAGE SIGNS

- When working within the traveled way, including shoulders and auxiliary lanes. Changeable Message Signs (CMS) shall be used on all Interstate Highways and on all other roadways (where space is available) with an ADT greater than Twenty Thousand (20,000) and should be delineated with retroreflective TTC devices.
- When used in advance of a lane closure or a lane shift, the CMS should be placed on the right hand side of the road a minimum distance of Two (2) miles in advance of the taper for Interstates and to be determined by the City–Parish Traffic Engineer on other roadways.
- CMS messages shall be approved by the City–Parish Traffic Engineer.
- When Portable Changeable Message signs are not being used, they should be removed; if not removed, they should be shielded by guardrail or barriers; or if the previous Two (2) options are not feasible, they should be delineated with retroreflective TTC devices.



FLAGGERS

- All flaggers must be qualified. The contractor shall be responsible for training or assuring that all flaggers are qualified to perform flagging duties. A certificate indicating completion of a flagger training course shall be availabel to the engineer if requested. A Qualified Flagger is one that has attended courses such as those offered by the American Traffic Safety Services Association (ATSSA) or other courses approved by the City–Parish.
- When utilized, a flagger shall use a minimum Eighteen (18) inch sign on a minimum Six (6) ft stop/slow paddle and wear ANSI Class 2 vest during day time operations and ANSI Class 3 ensemble during night operations. In all flagging operations, the flagger must be visible from flagger advance warning sign.
- Flagger stations shall be in a highly visible location far enough in advance of the work site so that approaching traffic will have sufficient distance to reduce speed before entering the project. 200–300 feet is desirable. In urban areas, the advances distance may be decreased.

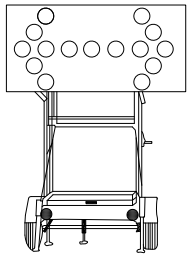



To Stop Traffic | Traffic Proceed | To Alert & Slow Traffic

USE OF HAND SIGN

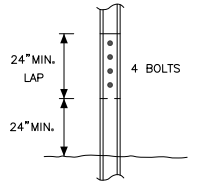
FLASHING ARROW PANELS

- Flashing Arrow Panels shall be used for lane closures on all facilities with Two (2) or more lanes in a single direction and a speed limit greater than Thirty–Five (35) mph.
- When used, flashing arrow panels should be located on the shoulder at the beginning of the taper.
- Where the shoulder width is limited, the flashing arrow panel should be placed within the closed lane as close to the beginning of the taper as practical.
- All Flashing Arrow Panels shall be Four (4) ft x Eight (8) ft Type C with LED lighting.
- When Flashing Arrow Panels signs are not being used, they should be removed; if not removed, they should be shielded by guardrail or barriers; or if the previous two options are not feasible, they should be delineated with retroreflective TTC devices.



ALLOWABLE LAP SPLICE FOR U–CHANNELL POST

U–channel posts may be spliced where long length are required. The upper section shall overlap the lower section by at least Twenty–Four (24) inches. The bottom edge of the upper section of the splice shall be a minimum of Twenty–Four (24) inches above the ground. The spliced sections shall be secured with at least Four (4) 5/16 inch diameter hexhead bolts spaced equally along the splice.




Front View

HIGHWAY–RAIL GRADE CROSSING

1. When a highway–rail grade crossing exists within or upstream of the merging taper and it is anticipated that backups resulting from the lane closure might extend through the highway–rail grade crossing, the TTC zone should be extended so that the merging taper precedes the highway–rail grade crossing.
2. When a highway–rail grade crossing exists within the acitivity area, provisions should be made to provide road users operating on the left side of the normal centerline with comparable warning devices as supplied for road users operating on the right side of the normal centerline.
3. When a highway–rail grade crossing exists within the activity area, early coordination with the railroad company should occur before work starts.
4. When a highway–rail grade crossing exists within the activity area, a flagger may be used at the highway–rail grade crossing to minimize the probability that vehicles are stopped within Fifteen (15) ft of the highway–rail grade crossing, measured from both sides of the outside rails.
5. A truck–mounted attenuator may be used on the work vehicle and/or the shadow vehicle.

STATE OF LOUISIANA
INGOLF A. PARTENHEIMER
REG. No. 28190
REGISTERED PROFESSIONAL ENGINEER IN ELECTRICAL ENGINEERING

September 10, 2020

| DATE | DESCRIPTION REVISIONS | BY |
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| STANDARD PLAN NO. 905–01 | DATED JULY 3, 2019 | SHEET NO. 2 OF 2 |
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TEMPORARY TRAFFIC CONTROL

ENGINEERING DIVISION
DEPARTMENT OF TRANSPORTATION AND DRAINAGE
CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE

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| MUTCD | G. C.HENG | S.EDEL | I. PARTENHEIMER |

| PROJECT NO. | SHEET |
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### Suggested Advance Warning Sign Spacing

| Road Types | Distance Between Signs* | | |
|---|---|---|---|
| | A | B | C |
| Urban (40 mph or less) | 100 | 100 | 100 |
| Urban (45 mph or more) | 350 | 350 | 350 |
| Rural | 500 | 500 | 500 |

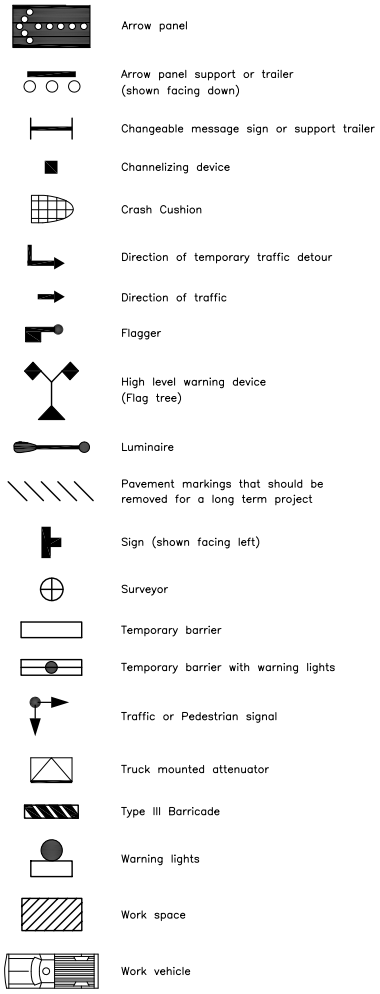
* Distances are shown in feet. The column headings A, B, and C are the dimensions shown in Typical Application Figures. The A dimension is the distance from the transition or point of restriction to the first sign. The B dimension is the distance between the first and second signs. The C dimension is the distance between the second and third signs. (The third sign is the first one in a three-sign series encountered by a driver approching a TTC zone.)

### Formulas for Determining Taper Lengths

| Speed Limit (S) | Taper Length (L) Feet |
|---|---|
| 40 mph or less | $L \quad \frac{WS^2}{60}$ |
| 45 mph or more | $L \quad WS$ |

Where:
L = taper length in feet
W = width of offset in feet
S = posted speed limit in mph.

### *Meaning of Symbols on Typical Application Diagrams*



Arrow panel
Arrow panel support or trailer (shown facing down)
Changeable message sign or support trailer
Channelizing device
Crash Cushion
Direction of temporary traffic detour
Direction of traffic
Flagger
High level warning device (Flag tree)
Luminaire
Pavement markings that should be removed for a long term project
Sign (shown facing left)
Surveyor
Temporary barrier
Temporary barrier with warning lights
Traffic or Pedestrian signal
Truck mounted attenuator
Type III Barricade
Warning lights
Work space
Work vehicle

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Information contained herewith was taken directly from the MUTCD 2003 version.

STATE OF LOUISIANA
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REGISTERED PROFESSIONAL ENGINEER IN ELECTRICAL ENGINEERING
September 10, 2020

| DATE | DESCRIPTION REVISIONS | BY |
|---|---|---|
| | | |

| STANDARD PLAN NO. 905-02 | DATED JULY 3, 2019 | SHEET NO. 1 OF 1 |
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TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATIONS

ENGINEERING DIVISION
DEPARTMENT OF TRANSPORTATION AND DRAINAGE
CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE

| DESIGNED | DRAWN | CHECKED | APPROVED |
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| PROJECT NO. | SHEET |
|---|---|
| | 134 |

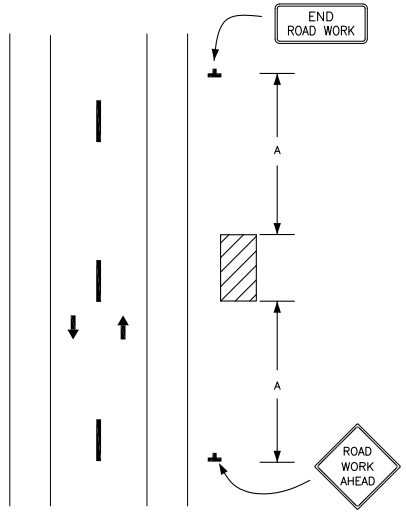


Figure TA–1
Work Beyond the Shoulder

NOTES:

1. If the work space is in the median of a divided highway, an advance warnig sign also be placed on the left side of the directional roadway.
2. The ROAD WORK AHEAD sign may be replaced with other appropriate signs such as the SHOULDER WORK sign. The SHOULDER WORK sign may be used for work adjacent to the shoulder.
3. For short–term, short–duration or mobile operation, all signs and channelizing devices may be eliminated if vehicle with activated high–intensity rotating, flashing, ocillating, or strobe lights is used.
4. Vehicle hazard warning signals may be used to supplement high–intensity rotating, flashing, oscillating, or strobe lights.
5. Vehicle hazard warning signals shall not be used instead of the vehicle's high–intensity rotating, flashing, oscillating, or strobe lights.

This sheet shall be used with Standard Plan No. 905–01 and 905–02.

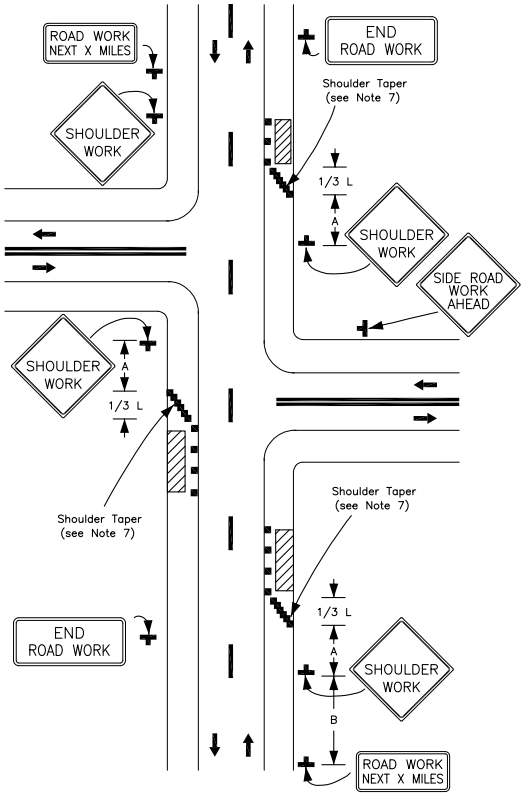


Figure TA–3
Work on Shoulders

NOTES:

1. A SHOULDER WORK sign should be placed on the left side of the roadway for a divided or one–way street only if the left shoulder is affected.
2. The Workers symbol signs may be used instead of SHOULDER WORK signs.
3. The SHOULDER WORK AHEAD sign on an intersecting roadway may be omitted where drivers emerging from that roadway will encounter another advance warning sign prior to this activity area.
4. For short–duration operations of Sixty (60) minutes or less, all signs and channelizing devices may be eliminated if a vehicle with activated high–intensity rotating, flashing, oscillating, or strobe lights is used.
5. Vehicle hazard warning signals may be used to supplement high–intensity rotating, flashing, oscillating, or strobe lights.
6. Vehicle hazard warning signals shall not be used instead of the vehicle's high–intensity rotating, flashing, oscillating, or strobe lights.
7. When paved shoulders having a width Eight (8) ft or more are closed, at least one advance warning sign shall be used. In addition, channelizing devices shall be used to close the shoulder in advance to delineate the beginning of the work space and direct vehicular traffic to remain within the traveled way.

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| STANDARD PLAN NO. | DATED | SHEET NO. |
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| 905–03 | JULY 3, 2019 | 1 OF 1 |

TEMPORARY TRAFFIC CONTROL
TYPICAL APPLICATIONS

ENGINEERING DIVISION
DEPARTMENT OF TRANSPORTATION AND DRAINAGE
CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE

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| MUTCD | G. CHENG | S. EDEL | I. PARTENHEIMER |

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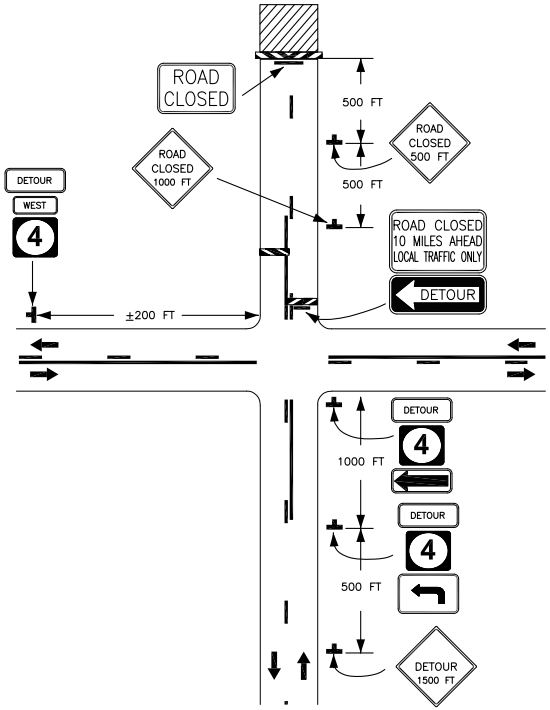


Figure TA–8
Roads Closed with Off–Site Detour

NOTES:

1. Regulatory traffic control devices should be modified as needed for the duration of the detour.
2. If the road is opened for some distance beyond the intersection and/or there are significant orgin/destination points beyond the intersection, the ROAD CLOSED and DETOUR signs on Type III Barricades may be located at the edge of the traveled way.
3. A Route Sign Directional assembly may be placed on the far left corner of the intersection to augment or replace the one shown on the near right corner.
4. Flashing warning lights and/or flags may be used to call attention to the advance warning signs.
5. Cardinal direction plaques may be used with route signs.

This sheet shall be used with Standard Plan No. 905–01 and 905–02.

| PROJECT NO. | SHEET |
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| | 135 |

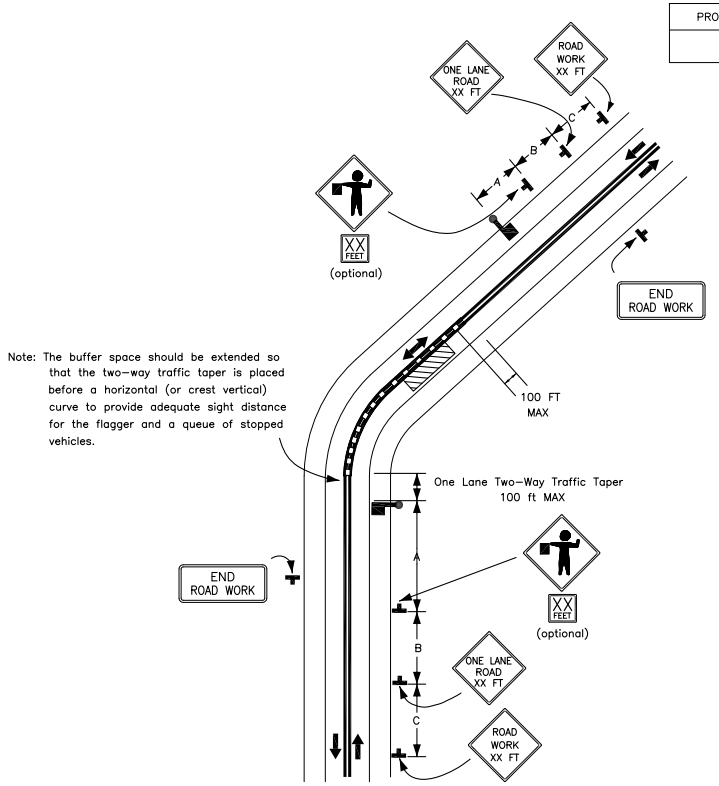


Figure TA–10
Lane Closure on Two–Lane Road Using Flaggers

NOTES:

1. For low–volume situations with short work zones on straight roadways where the flagger is visible to road users approaching from both directions, a single flagger, positioned to be visible to road users approaching from both directions, may be used.
2. The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short–duration operations.
3. Flashing warning lights and/or flags may be used to call attention to the advance warning signs.

a. A BEPREPARED TO STOP sign may be added to the sign series.

4. The buffer space should be extended so that the two–way traffic taper is placed before a horizontal (or crest vertical) curve to provide adequate sight distance for the flagger and a queue of stopped vehicles.
5. At night, flagger stations shall be illuminated, except in emergencies.
6. When used, the BE PREPARED TO STOP sign should be located between the Flagger sign and the ONE LANE ROAD sign.

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| STANDARD PLAN NO. 905–05 | DATED JULY 3, 2019 | SHEET NO. 1 OF 1 |
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TEMPORARY TRAFFIC CONTROL TYPICAL APPLICATIONS

ENGINEERING DIVISION
DEPARTMENT OF TRANSPORTATION AND DRAINAGE
CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE

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| PROJECT NO. | SHEET |
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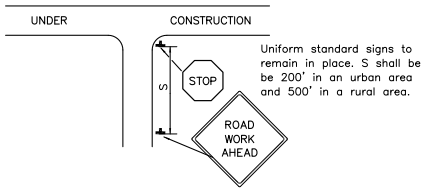
| | 136 |

The Side Road Work Ahead sign shall be used in advance of an intersection where the construction project on the side road approach terminates at the crossing.

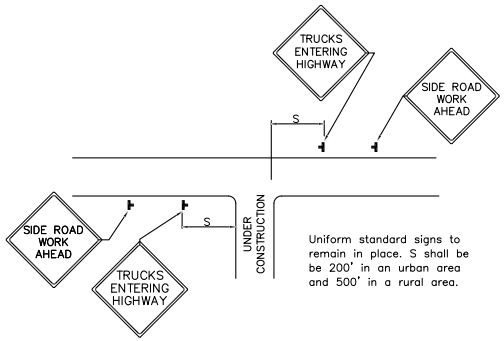

36" x 36"
Legend 5" Series C

SIDE ROAD WORK AHEAD SIGN




Uniform standard signs to remain in place. S shall be be 200' in an urban area and 500' in a rural area.

SIGNING FOR SIDE ROAD APPROACH TO CONSTRUCTION PROJECT




Uniform standard signs to remain in place. S shall be be 200' in an urban area and 500' in a rural area.

SIDE ROAD WORK


September 10, 2020

| STANDARD PLAN NO. | DATED | SHEET NO. |
|---|---|---|
| 905-30 | JULY 3, 2019 | 1 OF 1 |

TEMPORARY TRAFFIC CONTROL
LOCAL APPLICATIONS

ENGINEERING DIVISION
DEPARTMENT OF TRANSPORTATION AND DRAINAGE
CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE

| DESIGNED | DRAWN | CHECKED | APPROVED |
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| MUTCD | G. CHENG | S. EDEL | I. PARTENHEIMER |

| DATE | DESCRIPTION REVISIONS | BY |
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This sheet shall be used with Standard Plan No. 905-01 and 905-02.