
Appendix I
30% Design Drawings

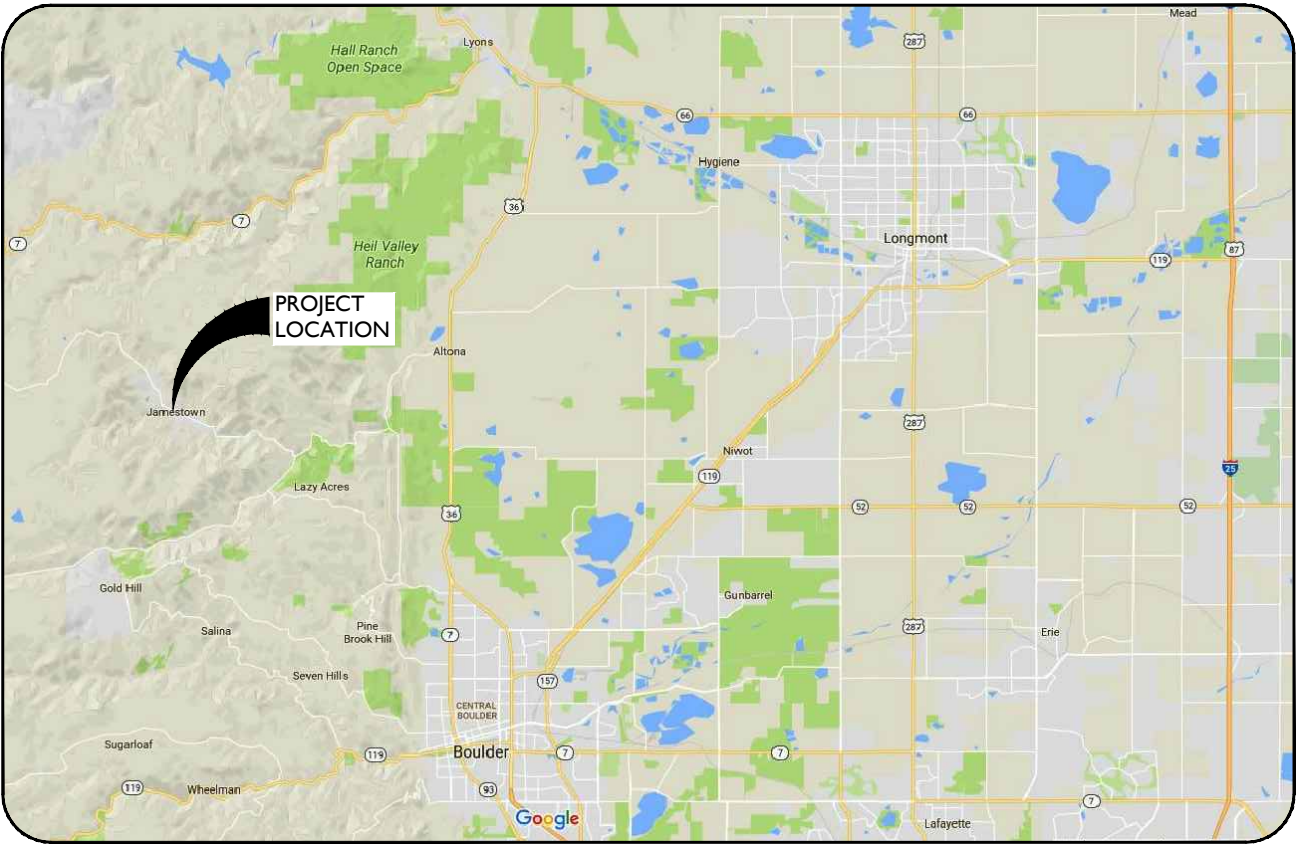
30% CONCEPTUAL DESIGN PLANS

PROJECT C

PREPARED FOR THE

TOWN OF JAMESTOWN, COLORADO

JULY 2017



VICINITY MAP

NOT TO SCALE

BENCHMARK

EXISTING TOPOGRAPHY BASED ON 2016 LIDAR DATA

CONTACT INFORMATION

OWNER
Town of Jamestown
P.O. Box 298
Jamestown, CO 80455
(303) 449-1806

CIVIL ENGINEER
Ayres Associates
Dale Mathison, P.E.
3665 JFK Parkway, Building 2, Suite 100
Fort Collins, Colorado 80525
(970) 223-5556 Office



SHEET INDEX		
SHEET	DRAWING	DESCRIPTION
1	G01	COVER SHEET
2	C01	OVERAL SITE PLAN
3	C02	EXISTING CONDITIONS
4	C03	MAIN STORM PLAN AND PROFILE
5	C04	STORM A AND B PLAN AND PROFILE
6	C05	STORM C AND D PLAN AND PROFILE
7	C06	ANDERSEN HILL SWALE PLAN
8	C07	DETAILS - 1 OF 4
9	C08	DETAILS - 2 OF 4
10	C09	DETAILS - 3 OF 4
11	C10	DETAILS - 4 OF 4



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AYRES
ASSOCIATES

COVER SHEET

PROJECT C 30%
CONCEPTUAL DESIGN
TOWN OF JAMESTOWN

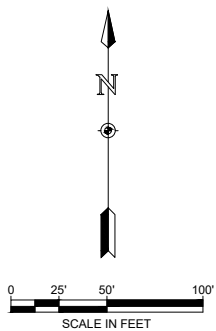
Project Mgr. DAM	Date
Designed By: MCS	
Drawn By: RBR	
Approved By: DAM	
Date: 07/14/17	

PROJECT NO.
32-1882.00

DRAWING NO.
G01

SHEET 1 OF 11

Drawing Name: F:\32-1882.00 JAMESTOWN MASTER PLAN\MAINDWG\SHEETS\32-1882.00 OVERALL SITE PLAN.DWG Wednesday, July 12, 2017 2:27 PM By: RICKS, RONALD



LEGEND:

- PROPOSED STORM
- TYPE C OR D INLET
- TYPE 113 INLET
- ST EXISTING STORM
- EXISTING INLET
- 6900 EXISTING MAJOR CONTOUR
- 6982 EXISTING MINOR CONTOUR

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OVERALL SITE PLAN

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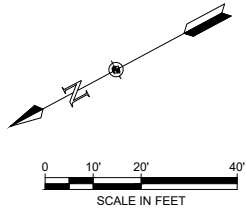
Revisions	Date

Project Mgr. DAM	Designed By: MCS	Drawn By: RBR	Approved By: DAM	Date: 07/14/17
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PROJECT NO. 32-1882.00
DRAWING NO. C01

SHEET 2 OF 11

Drawing Name: F:\32-1882.00 JAMESTOWN MASTER PLAN\MAINDWG\SHEETS\32-1882.00 EXISTING CONDITIONS.DWG Thursday, July 13, 2017 12:16 PM By: RICKS, RONALD



NOTES:

1. EXISTING PIPE MATERIAL, SIZE, AND LOCATION IS ESTIMATED.

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EXISTING CONDITIONS

PROJECT C 30%
CONCEPTUAL DESIGN
TOWN OF JAMESTOWN

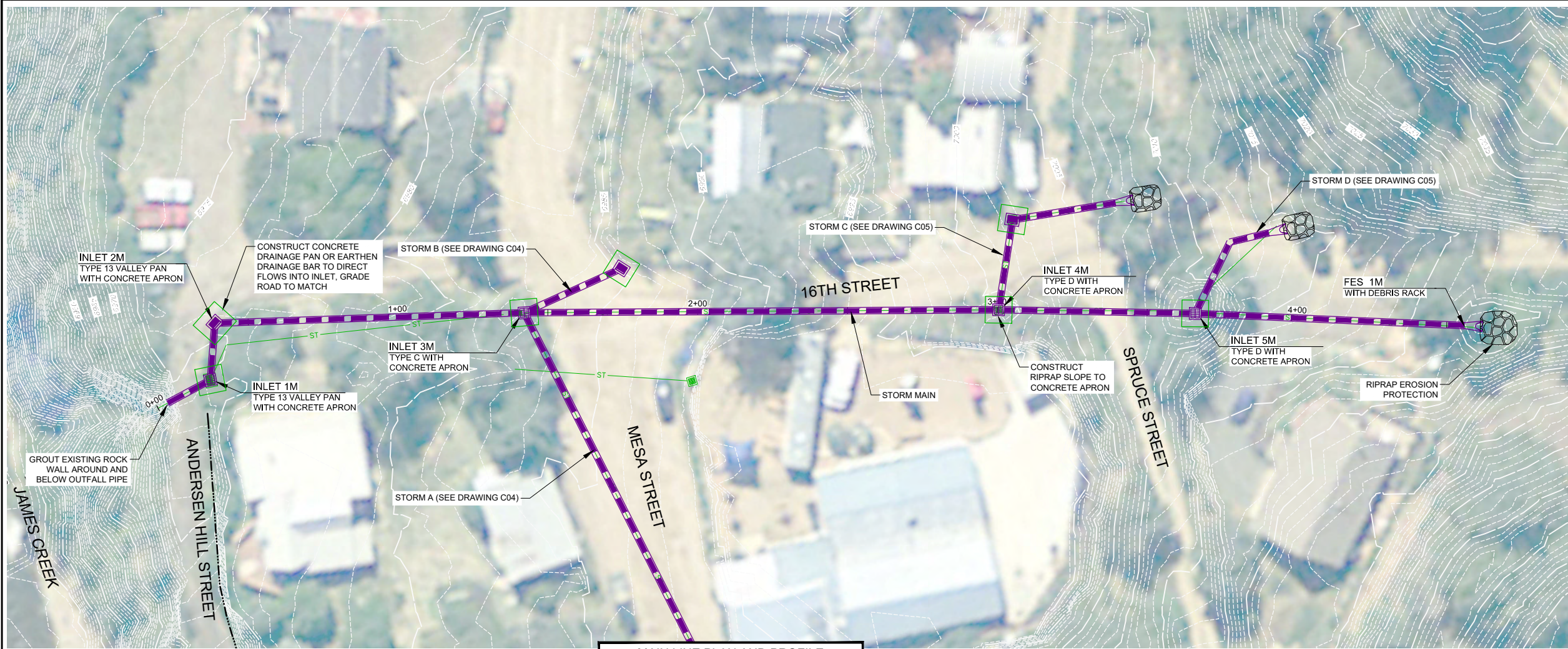
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Designed By:	MCS
Drawn By:	RGR
Approved By:	DAM
Date:	07/14/17

Revisions	Date

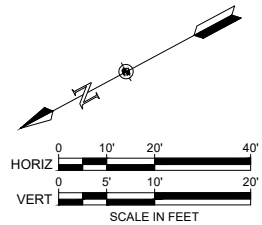
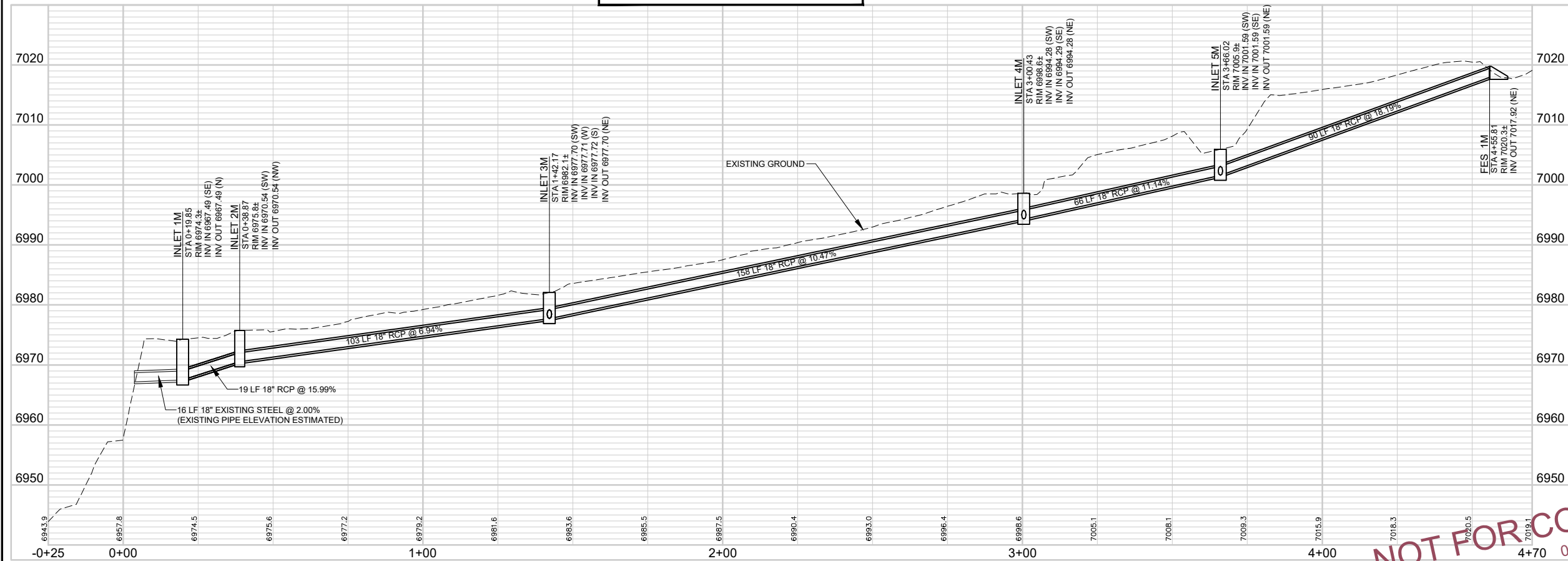
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DRAWING NO.	C02

SHEET 3 OF 11

Drawing Name: F:\32-1882.00 JAMESTOWN MASTER PLAN\MAINDWG\SHEETS\32-1882.00 PLAN AND PROFILE.DWG Thursday, July 13, 2017 12:18 PM By: RICKS, RONALD



MAIN LINE PLAN AND PROFILE



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MAIN STORM
PLAN AND PROFILE

PROJECT C 30%
CONCEPTUAL DESIGN
TOWN OF JAMESTOWN

Revisions	Date

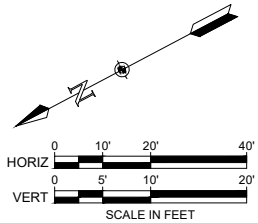
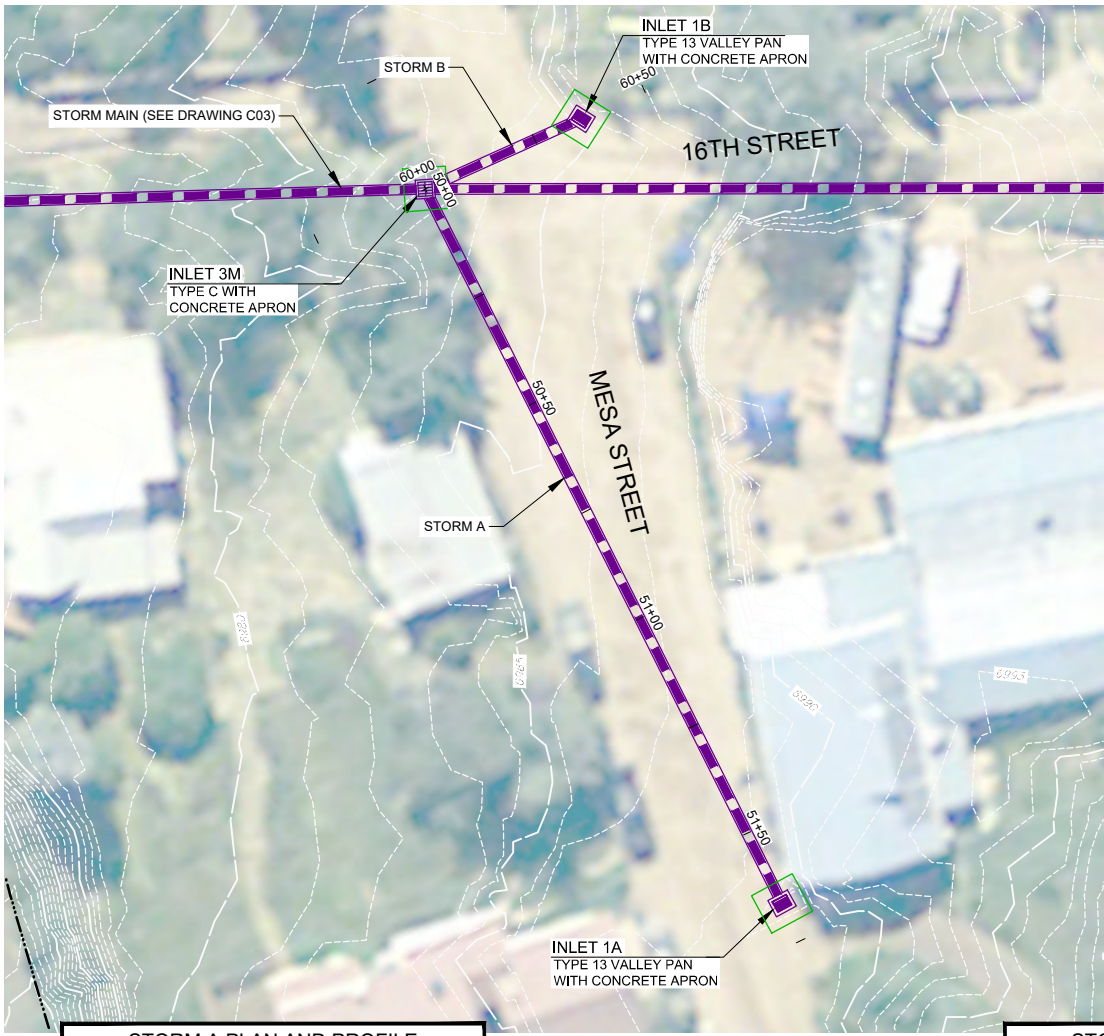
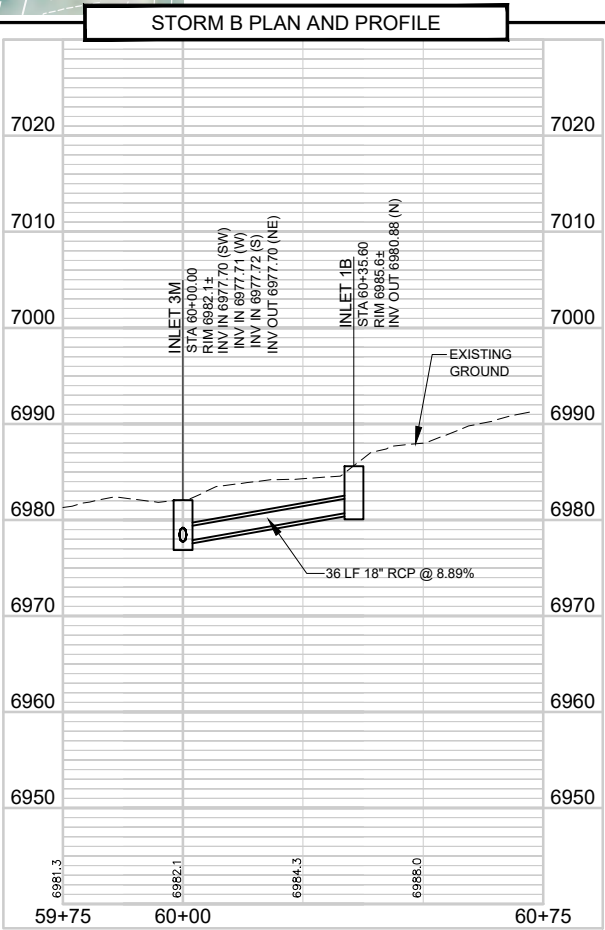
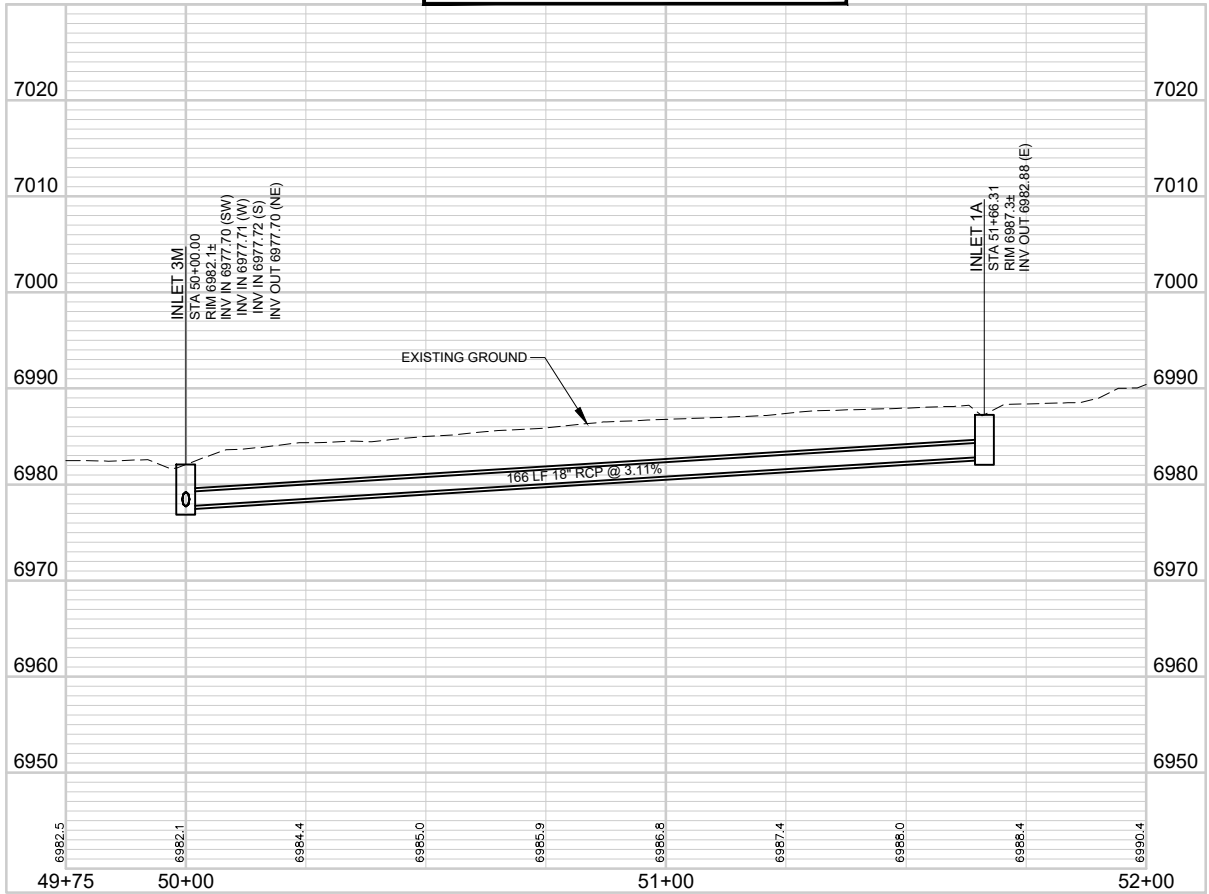
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Designed By:	MCS
Drawn By:	RGR
Approved By:	DAM
Date:	07/14/17

PROJECT NO.
32-1882.00

DRAWING NO.
C03

SHEET 4 OF 11

Drawing Name: F:\32-1882.00 JAMESTOWN MASTER PLAN\MAINDWG\SHEETS\32-1882.00 PLAN AND PROFILE2.DWG Wednesday, July 12, 2017 3:31 PM By: RICKS, RONALD



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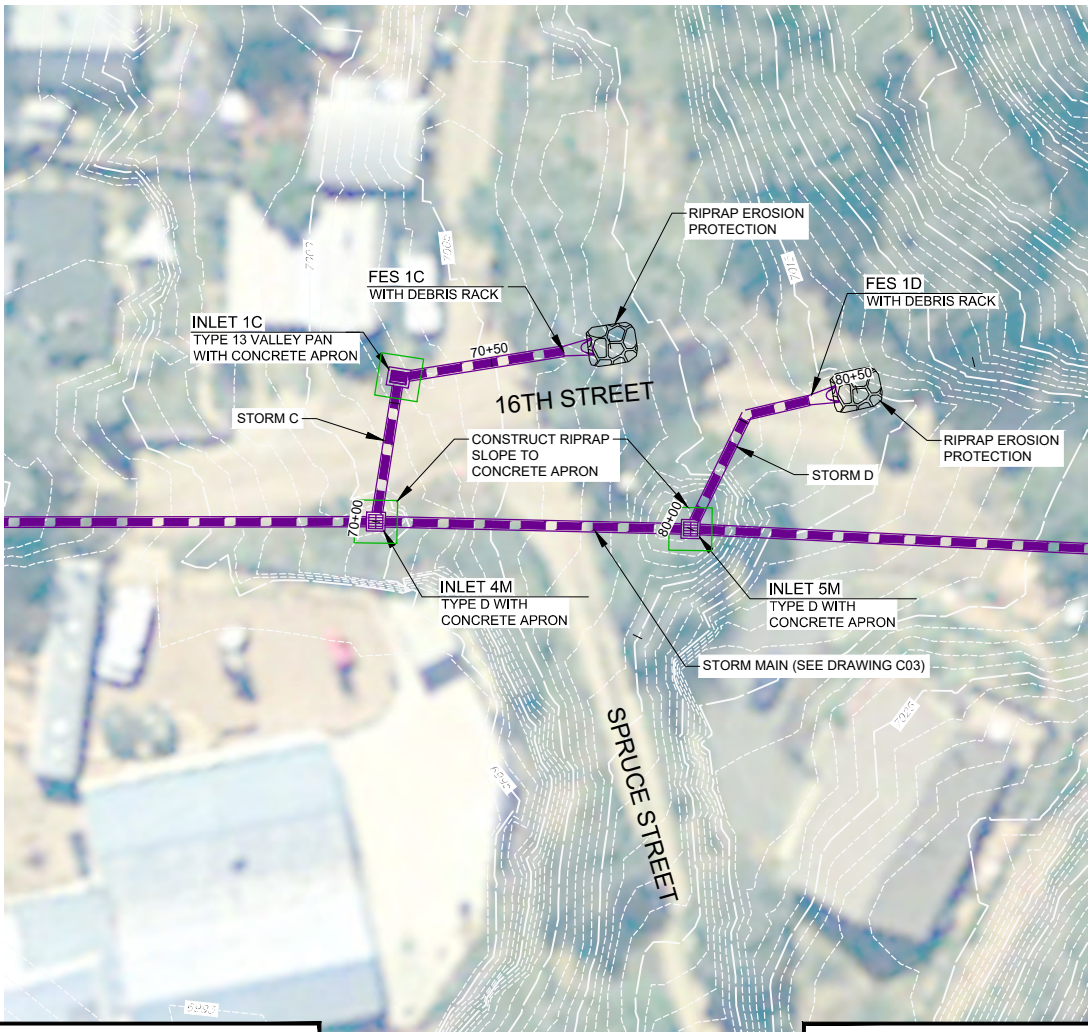
STORM A AND B
PLAN AND PROFILE

PROJECT C 30%
CONCEPTUAL DESIGN
TOWN OF JAMESTOWN

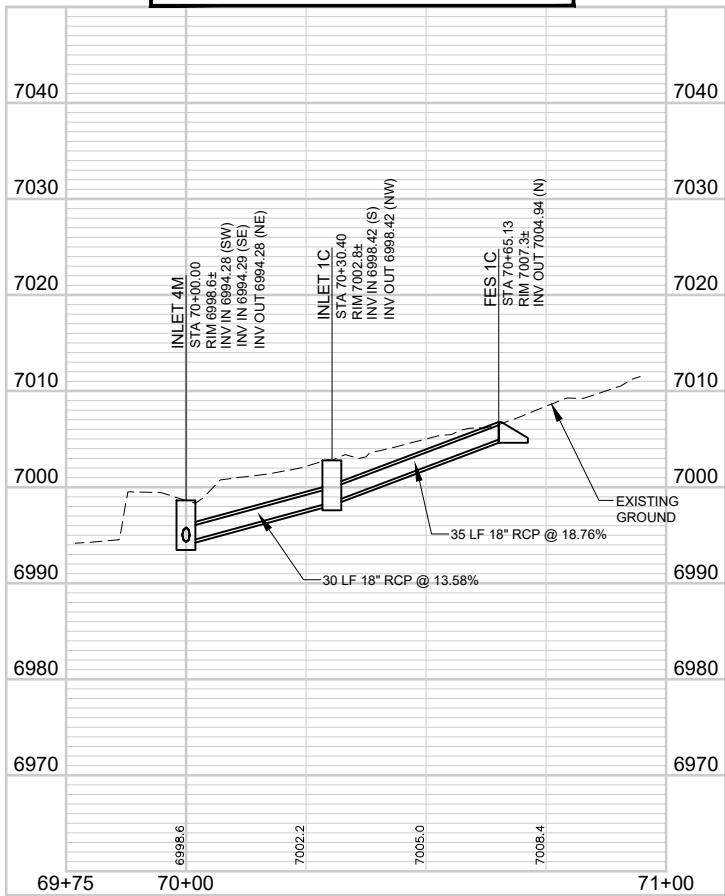
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Designed By: MCS		
Drawn By: RGR		
Approved By: DAM		
Date: 07/14/17		

PROJECT NO.
32-1882.00
DRAWING NO.
C04
SHEET 5 OF 11

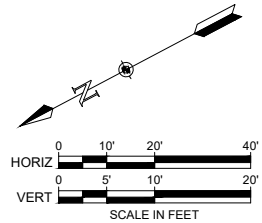
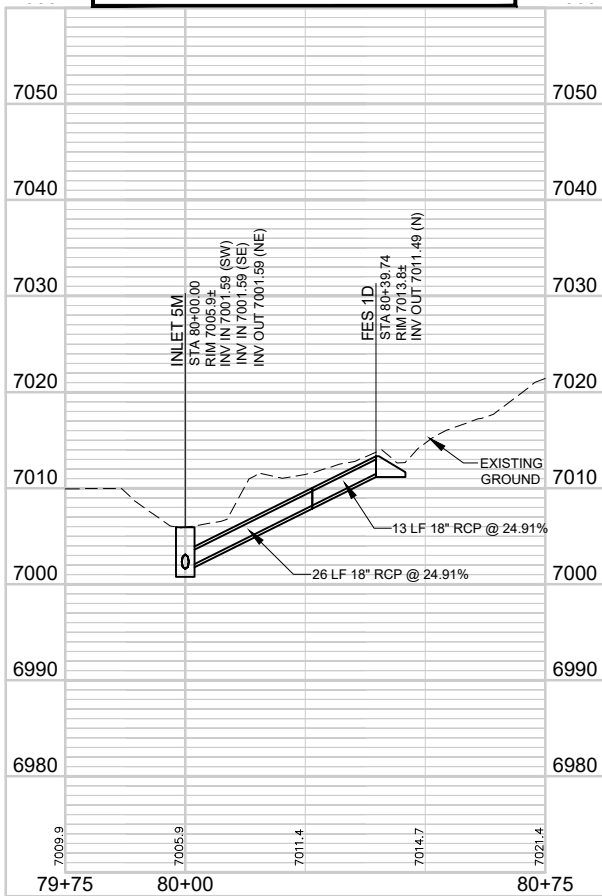
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STORM C PLAN AND PROFILE



STORM D PLAN AND PROFILE



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CONCEPTUAL DESIGN
TOWN OF JAMESTOWN

STORM C AND D
PLAN AND PROFILE

AYRES
ASSOCIATES

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Revisions	Date

Project Mgr.	DAM
Designed By:	MCS
Drawn By:	RGR
Approved By:	DAM
Date:	07/14/17

PROJECT NO.

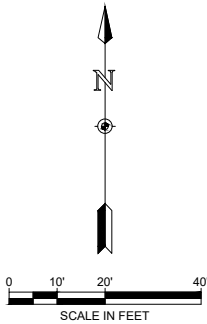
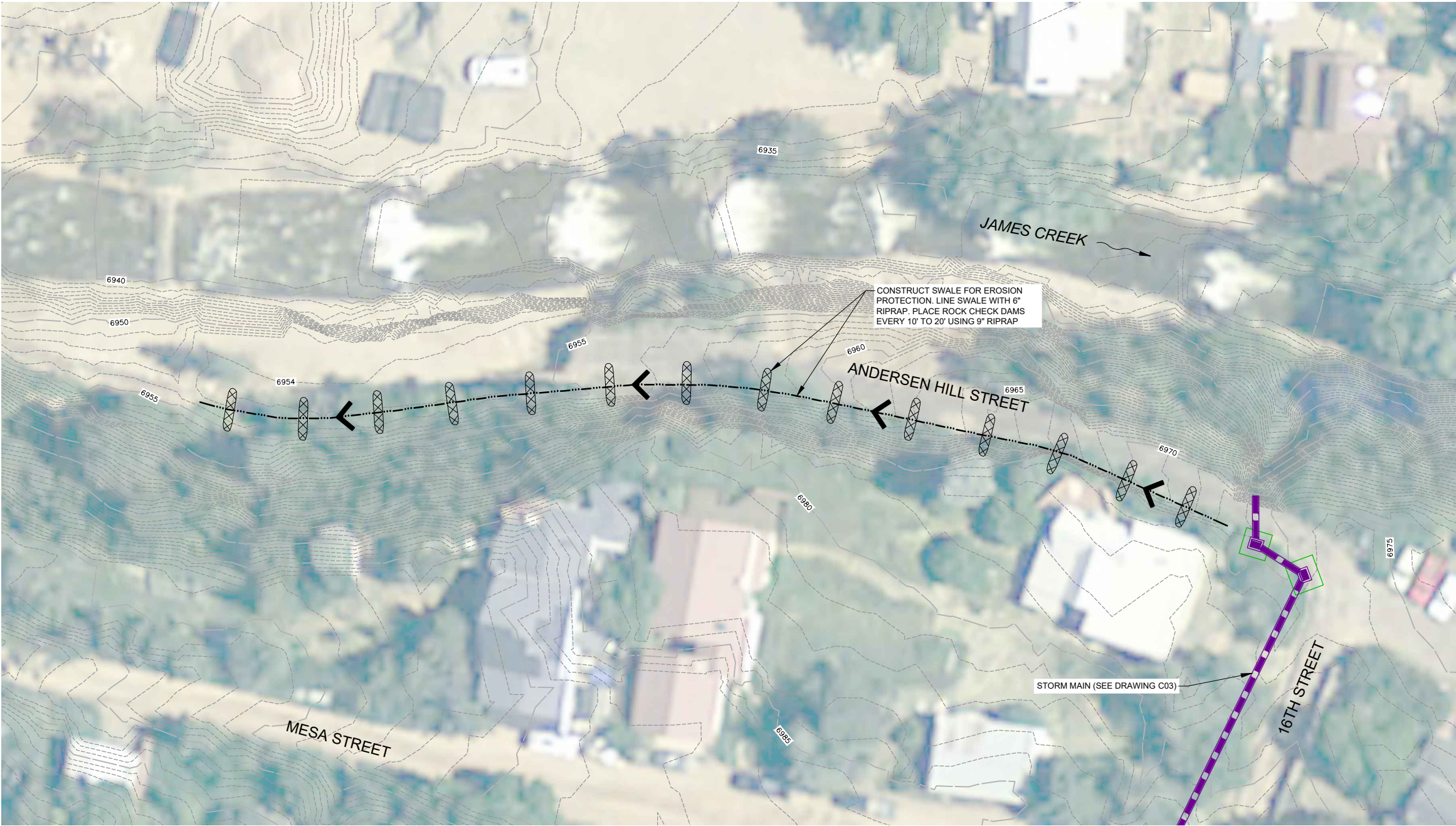
32-1882.00

DRAWING NO.

C05

SHEET 6 OF 11

Drawing Name: F:\32-1882.00 JAMESTOWN MASTER PLAN\MAINDWG\SHEETS\32-1882.00 ANDERSEN SWALE.DWG Wednesday, July 12, 2017 4:43 PM By: RICKS, RONALD



NOTES:
XX

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ANDERSEN HILL SWALE PLAN

PROJECT C 30%
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TOWN OF JAMESTOWN

Project Mgr.	DAM
Designed By: MCS	
Drawn By: RGR	
Approved By: DAM	
Date: 07/14/17	

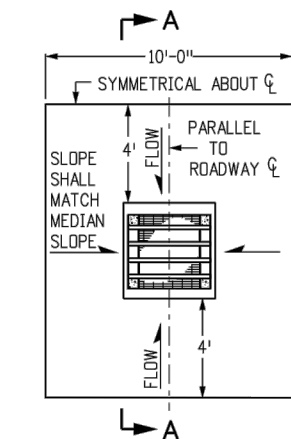
Revisions	Date

PROJECT NO.
32-1882.00

DRAWING NO.
C06

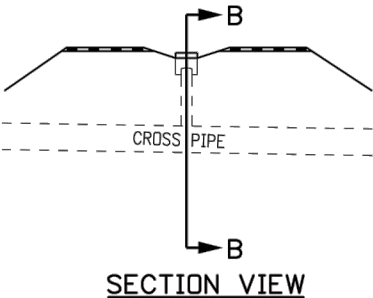
SHEET 7 OF 11

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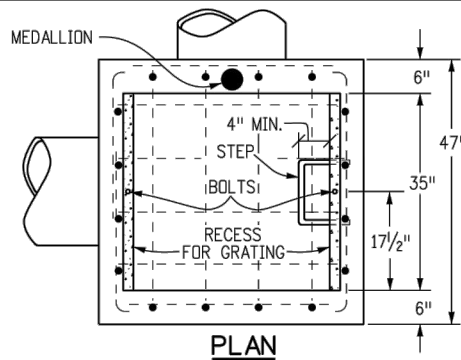


INLET WITH DITCH PAVING

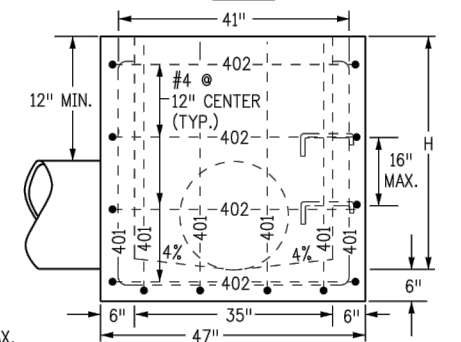
STEEL GRATE QUANTITIES				
NO. PIECES	DESCRIPTION	LENGTH	LBS PER FT.	WEIGHT (LBS.)
4	S4 x 7.7 BEAM	40"	7.70	103
2	3 1/2" x 1/4" FLAT	26 5/8"	2.98	13
2	3" x 1/4" FLAT	26 5/8"	2.55	12
TOTAL LBS. = 128				



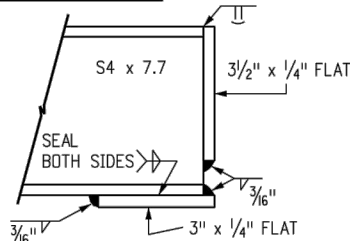
SECTION VIEW



PLAN

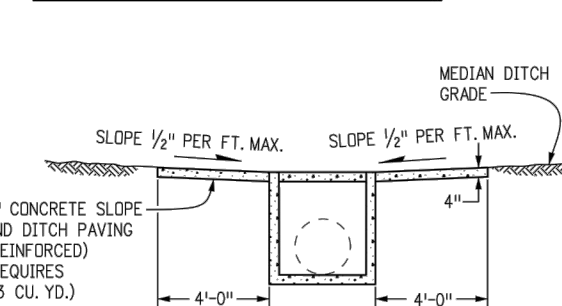


ELEVATION
CONCRETE INLET



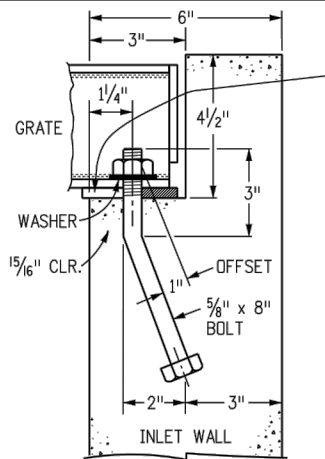
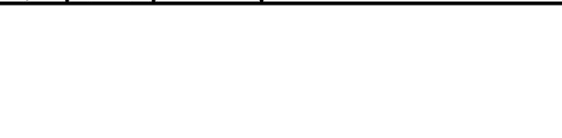
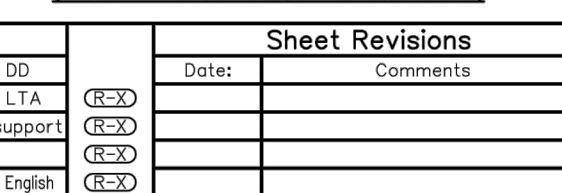
SECTION D-D

SECTION A-A
INLET ON GRADE
(FLOW FROM ONE DIRECTION)



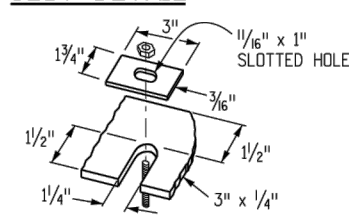
SECTION A-A

INLET AT BOTTOM OF VERTICAL CURVE
(FLOW FROM TWO DIRECTIONS)



GRATE INSTALLATION
DETAIL

SLOT DETAIL



ALTERNATE SLOT
AND HOLD DOWN
PLATE DETAIL

GENERAL NOTES

- INLET TYPE C IS NOT HS-20 RATED AND SHALL NOT BE PLACED IN PAVED ROADWAYS. THIS INLET SHALL BE USED ONLY OUTSIDE PAVED ROADWAYS.
- CONCRETE SHALL BE CLASS B. INLET MAY BE CAST-IN-PLACE OR PRECAST.
- REINFORCING BARS SHALL BE EPOXY COATED AND DEFORMED #4, AND SHALL HAVE A MINIMUM 2 IN. CLEARANCE. CUT OR BEND AROUND PIPES AS REQUIRED.
- CONCRETE SLOPE AND DITCH PAVING SHALL BE IN ACCORDANCE WITH SECTION 507. REINFORCEMENT FOR CONCRETE SLOPE PAVING SHALL BE 6 X 6 - W1.4 X W1.4 OR 6 X 6 - W2.1 X W2.1.
- STRUCTURAL STEEL FOR GRATES AND GRATE INSTALLATION HARDWARE SHALL BE GALVANIZED, AND SHALL BE IN ACCORDANCE WITH SUBSECTION 712.06.
- THE STANDARD INLET GRATES SHALL BE USED ON ALL TYPE C INLETS UNLESS CLOSE MESH GRATES ARE SPECIFIED ON THE PLANS.
- CLOSE MESH GRATES ARE RECOMMENDED WHERE FOOT TRAFFIC OR BICYCLE ROUTES ARE IN CLOSE PROXIMITY TO GRATE. THIS GRATE IS NOT ADA COMPLIANT OR BICYCLE FRIENDLY AND SHALL NOT BE PLACED DIRECTLY IN SIDEWALKS, CROSSWALKS OR BIKE PATHS.
- STEPS SHALL BE PROVIDED WHEN INLET DIMENSION "H" IS EQUAL TO OR GREATER THAN 3 FT. - 6 IN., AND SHALL CONFORM TO AASHTO M 199.
- SEE STANDARD PLAN M-604-11, FOR REINFORCEMENT AROUND THE PIPE OPENING.
- ALL INLETS SHALL HAVE A 4 IN. DIA. METAL MEDALLION WITH A "NO DUMPING DRAINS TO STREAM" MESSAGE ON IT. THE MEDALLION SHALL HAVE A FISH SYMBOL WITH A BLUE BACKGROUND. IT SHALL BE FIRMLY ATTACHED TO THE TOP OF THE INLET WITH A PERMANENT FASTENER.

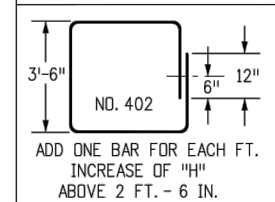
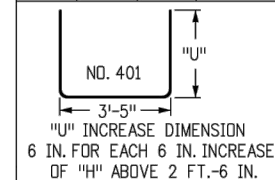
QUANTITIES FOR ONE INLET

H	CONCRETE (CU. YDS.)	STEEL (LBS.)	NO. STEPS REQ'D.
2'-6"	0.9	75	0
3'-0"	1.0	80	0
3'-6"	1.2	96	0
4'-0"	1.3	101	1
4'-6"	1.4	116	2
5'-0"	1.5	122	2
5'-6"	1.7	137	2
6'-0"	1.8	142	3
6'-6"	1.9	158	3
7'-0"	2.0	163	3
7'-6"	2.2	179	4
8'-0"	2.3	184	4
8'-6"	2.4	199	4
9'-0"	2.5	205	5
9'-6"	2.7	220	5
10'-0"	3.0	235	6
11'-6"	3.4	251	6

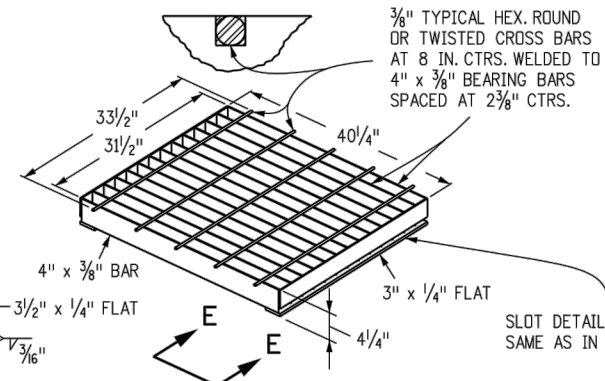
PIPE INSIDE DIAMETER SHALL BE 30 IN. OR LESS. CONCRETE AND STEEL QUANTITIES ARE FOR ONE ENTIRE INLET BEFORE DEDUCTION FOR VOLUME OCCUPIED BY PIPE. WEIGHT OF STEEL INCLUDES A RING FOR THE MAXIMUM PIPE DIAMETER.

BAR LIST FOR H = 2 FT.-6 IN.
AND BENDING DIAGRAM

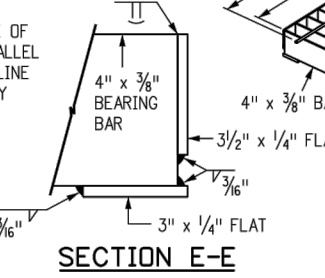
MARK	NO. REQ'D.	HEIGHT	LENGTH
401	2	2'-3"	7'-11"
401	6	2'-7"	8'-7"
402	3	11"	15'-0"



402 BARS SHALL BE EQUALLY SPACED FROM EACH OTHER.



CLOSE MESH GRATE



SECTION E-E

STANDARD INLET GRATE

Computer File Information	
Creation Date: 07/04/12	Initials: DD
Last Modification Date: 07/04/12	Initials: LTA
Full Path: www.coloradodot.info/business/designsupport	
Drawing File Name: 6040100101.dgn	
CAD Ver.: MicroStation V8	Scale: Not to Scale Units: English

Sheet Revisions	
Date:	Comments
(R-X)	
(R-X)	
(R-X)	
(R-X)	

Colorado Department of Transportation
4201 East Arkansas Avenue
Denver, Colorado 80222
Phone: (303) 757-9083
Fax: (303) 757-9820
Project Development Branch DD/LTA

INLET, TYPE C

Issued By: Project Development Branch July 4, 2012

STANDARD PLAN NO.

M-604-10

Sheet No. 1 of 1

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DETAILS - 1 OF 4

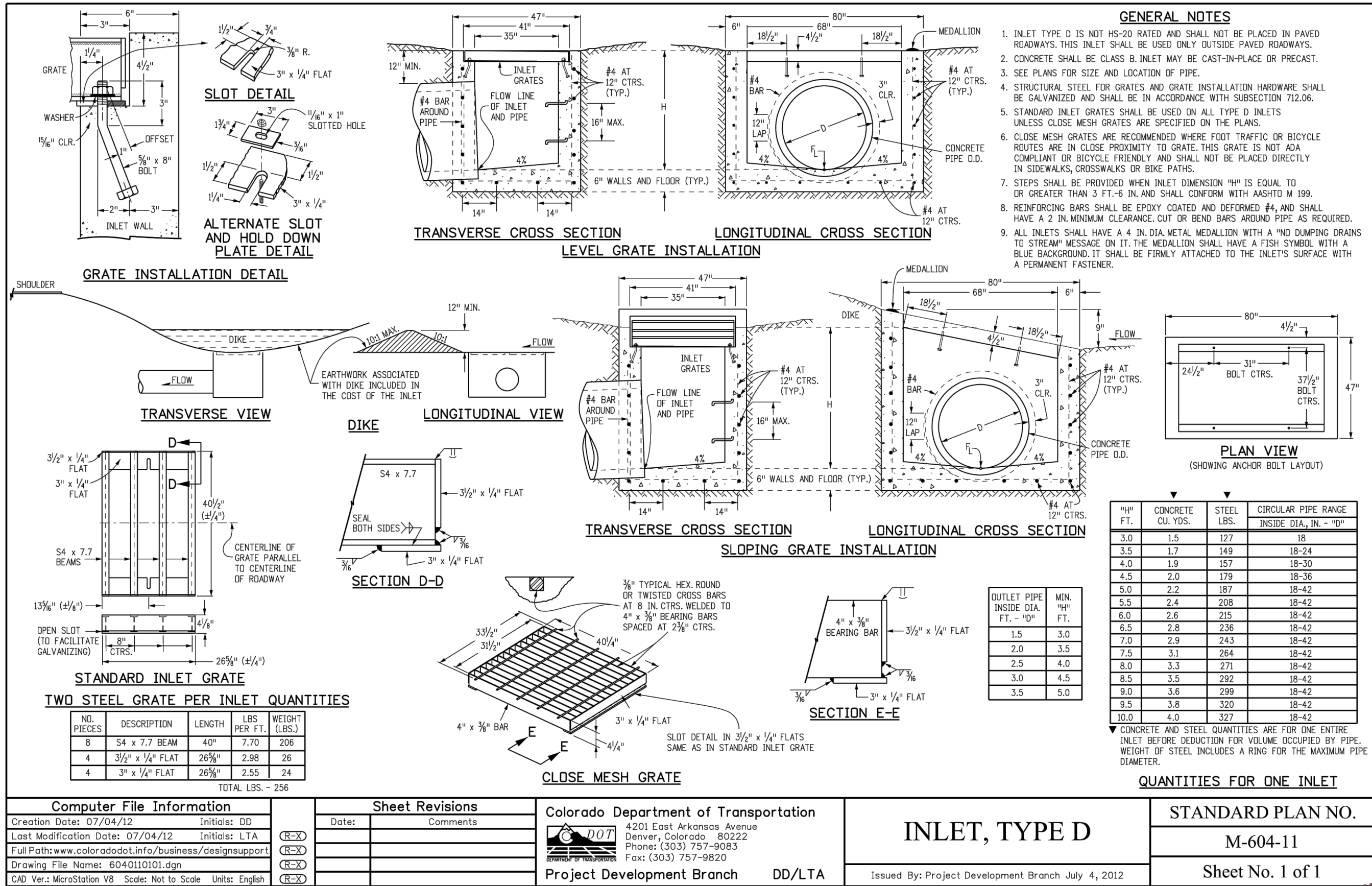
PROJECT C 30%
CONCEPTUAL DESIGN
TOWN OF JAMESTOWN

Date

Revisions

Project Mgr. DAM	Designed By: MCS	Drawn By: RBR	Approved By: DAM	Date: 07/14/17
PROJECT NO. 32-1882.00				
DRAWING NO. C07				
SHEET 8 OF 11				

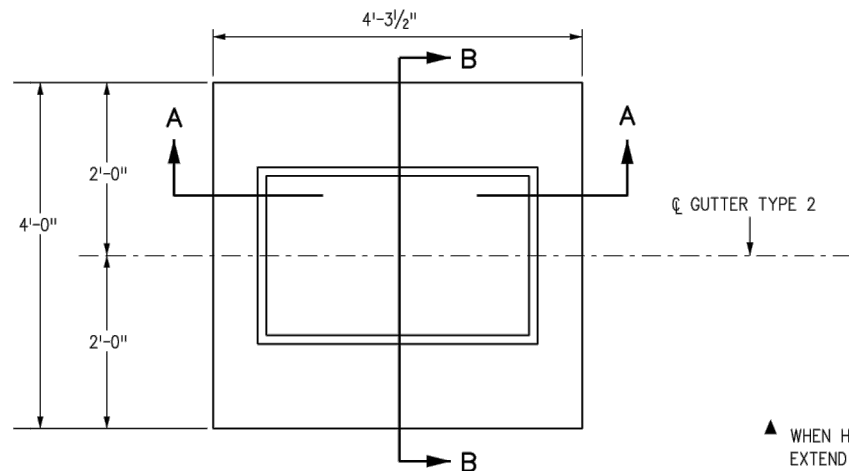
Drawing Name: F:\32-1882.00 JAMESTOWN MASTER PLAN\MAINDWS\SHEETS\32-1882.00 DETAILS.DWG Wednesday, July 12, 2017 4:54 PM By: RICKS, RONALD



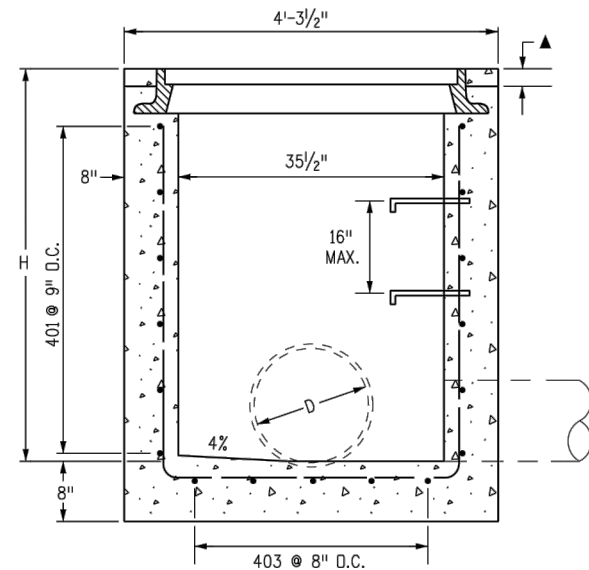
NOT FOR CONSTRUCTION
07/14/17

ONE INCH - IF NOT,
SCALE ACCORDINGLY

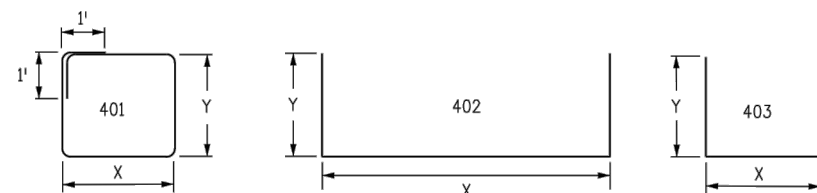
Drawing Name: F:\32-1882.00 JAMESTOWN MASTER PLAN\MAINDWG\SHEETS\32-1882.00 DETAILS.DWG Thursday, July 13, 2017 4:03 PM By: RICKS, RONALD



PLAN VIEW
TYPE 13 INLET FOR GUTTER TYPE 2



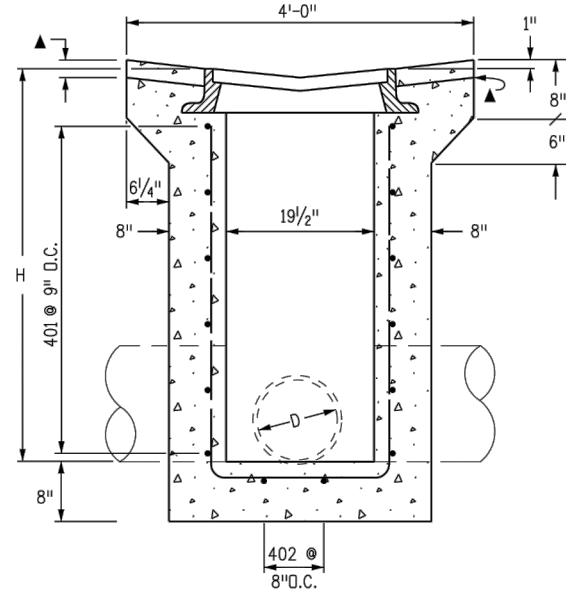
SECTION A-A
D MAX = 30 IN. FOR H > 4 FT.



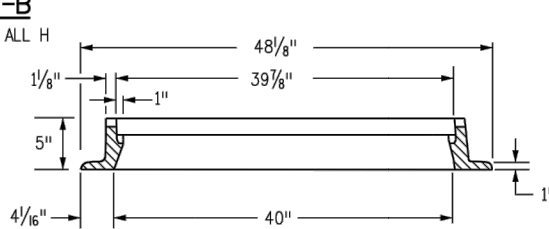
BENDING DIAGRAMS

ALL DIMENSIONS ARE OUT-TO-OUT OF BAR.

▲ WHEN HMA MATERIAL IS TO EXTEND TO THE EDGE OF THE GRATING FRAME, CONCRETE MAY BE DEPRESSED.



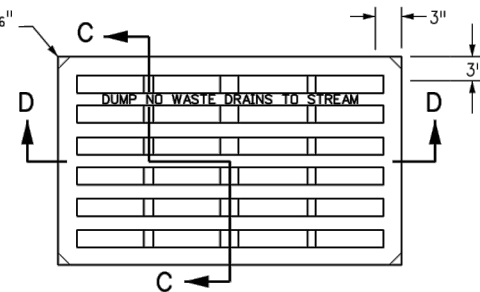
SECTION B-B
D MAX = 18 IN. FOR ALL H



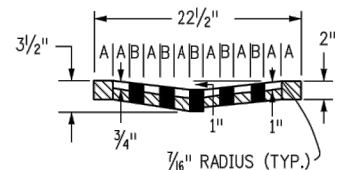
SECTION E-E

APPROXIMATE WEIGHT = 590 LBS.

CORNERS RELIEVED 3/16" TO PREVENT ROCKING (TYP.)

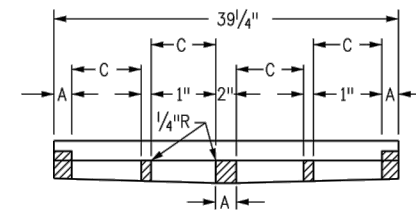


NO. 13 GRATE

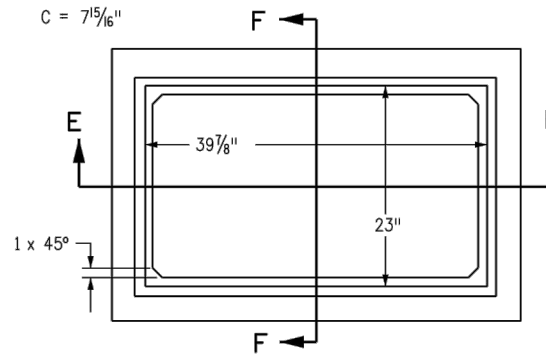


SECTION C-C

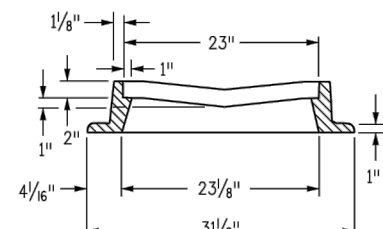
A = 1 3/4"
B = 1 1/16"
C = 7 15/16"



SECTION D-D



NO. 13 GRATING & FRAMES



SECTION F-F

GENERAL NOTES

- CONCRETE SHALL BE CLASS B. INLET MAY BE CAST-IN-PLACE OR PRECAST.
- CAST-IN-PLACE CONCRETE WALLS SHALL BE FORMED ON BOTH SIDES.
- EXPOSED CONCRETE CORNERS SHALL BE CHAMFERED 3/4 IN.
- REINFORCING BARS SHALL BE DEFORMED #4 AND SHALL HAVE A 2 IN. MINIMUM CLEARANCE. ALL REINFORCING BARS SHALL BE EPOXY COATED.
- STEPS SHALL BE PROVIDED WHEN INLET DIMENSION "H" IS EQUAL TO OR GREATER THAN 3 FT.-6 IN. AND SHALL CONFORM TO AASHTO M 199.
- ALL GRATES AND FRAMES SHALL BE GRAY OR DUCTILE CAST IRON IN ACCORDANCE WITH SUBSECTION 712.06. GRATES AND FRAMES SHALL BE DESIGNED TO WITHSTAND HS 20 LOADING.
- STATION POINT IS AT THE CENTER OF THE INLET.
- GRATE SHALL HAVE "DUMP NO WASTE DRAINS TO STREAM" MESSAGE CAST ON SURFACE.

H	CONCRETE	REINFORCING STEEL	NO. OF 401 BARS REQ'D.	MAXIMUM PIPE I.D.	
	CU. YDS.	Ø LB.		SEC. A-A	SEC. B-B
				IN.	IN.
3'-0"	1.3	72	4	18	18
3'-6"	1.5	76	4	24	18
4'-0"	1.6	90	5	30	18
4'-6"	1.8	104	6	30	18
5'-0"	1.9	109	6	30	18
5'-6"	2.1	122	7	30	18
6'-0"	2.2	136	8	30	18
6'-6"	2.4	141	8	30	18
7'-0"	2.5	154	9	30	18
7'-6"	2.7	168	10	30	18
8'-0"	2.8	173	10	30	18
8'-6"	3.0	187	11	30	18
9'-0"	3.1	200	12	30	18
9'-6"	3.3	205	12	30	18
10'-0"	3.4	219	13	30	18

Ø INCLUDES 1% FOR OVERRUN.

NOTE: CONCRETE QUANTITIES INCLUDE VOLUME OCCUPIED BY PIPE.

QUANTITIES FOR ONE INLET

MARK	NO. REQ'D.	DIMENSIONS		LENGTH
		X	Y	
401	4	3'-6"	2'-2"	13'-4"
402	2	3'-4 1/2"	* 2'-6 1/2"	8'-5 1/2"
403	5	2'-1 1/2"	* 2'-7"	7'-2 1/2"

* ADD 6 IN. TO THIS DIMENSION FOR EACH 6 IN. INCREASE OF "H" OVER 3 FT.-0 IN.

BAR LIST FOR H = 3 FT.-0 IN.

Computer File Information		Sheet Revisions		Colorado Department of Transportation 4201 East Arkansas Avenue Denver, Colorado 80222 Phone: (303) 757-9083 Fax: (303) 757-9820 Project Development Branch DD/LTA	CONCRETE INLET TYPE 13 Issued By: Project Development Branch July 4, 2012	STANDARD PLAN NO.	
Creation Date: 07/04/12	Initials: DD	Date:	Comments			M-604-13	
Last Modification Date: 07/04/12	Initials: LTA					Sheet No. 1 of 1	
Full Path: www.coloradodot.info/business/designsupport							
Drawing File Name: 6040130101.dgn							
CAD Ver.: MicroStation V8	Scale: Not to Scale	Units: English					

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SCALE ACCORDINGLY

3665 JFK Parkway, Building 2, Suite 100
Fort Collins, CO 80525
(970) 223-5556

AYRES
ASSOCIATES

DETAILS - 3 OF 4

PROJECT C 30%
CONCEPTUAL DESIGN
TOWN OF JAMESTOWN

Date	Revisions	Project Mgr.	Design By	Drawn By	Approved By	Date
		DAM	MCS	RBR	DAM	07/14/17

PROJECT NO.

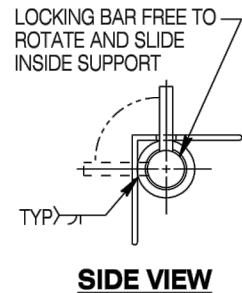
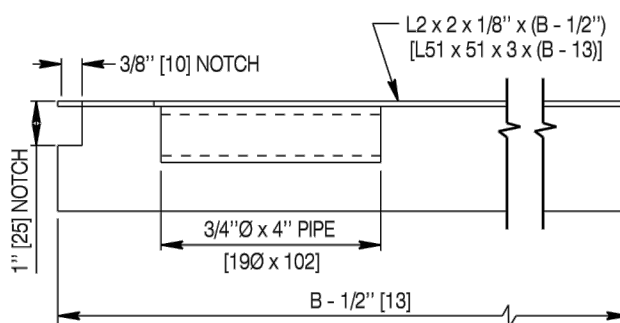
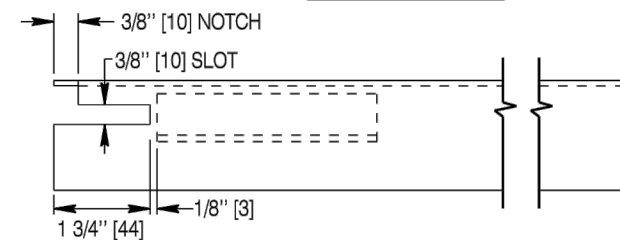
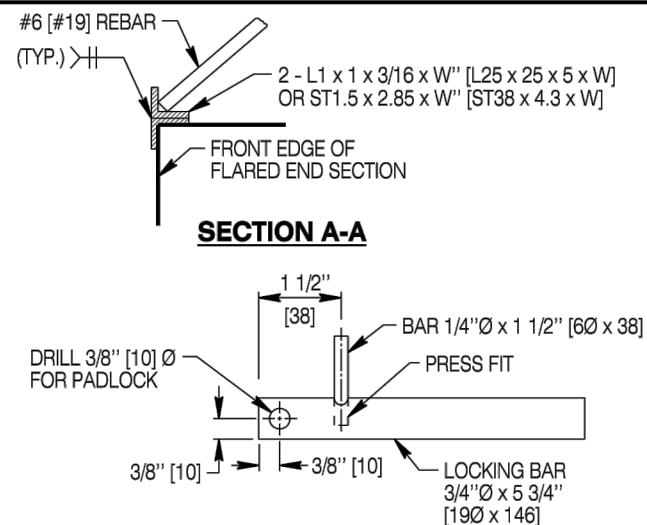
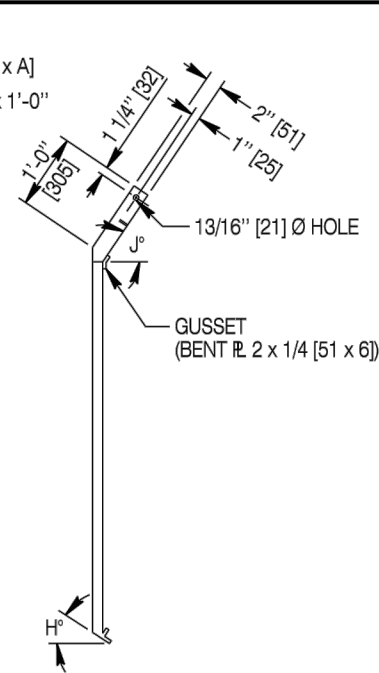
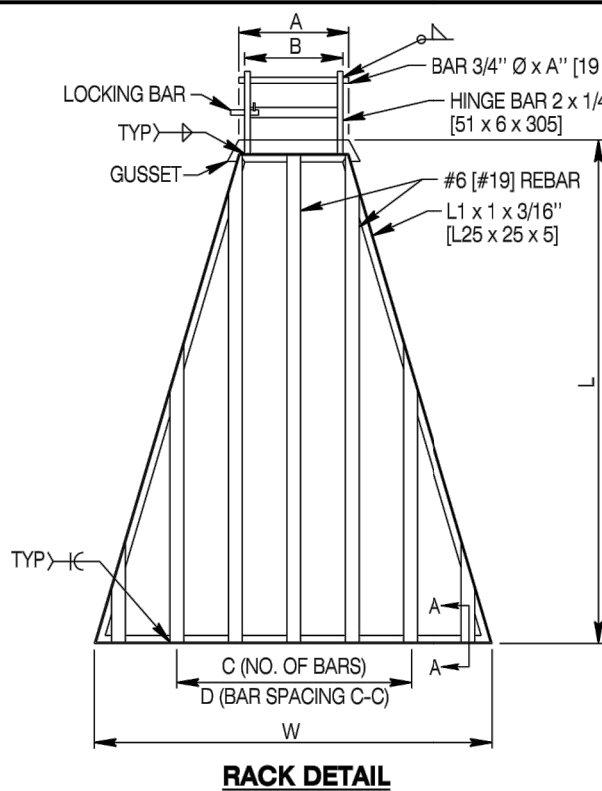
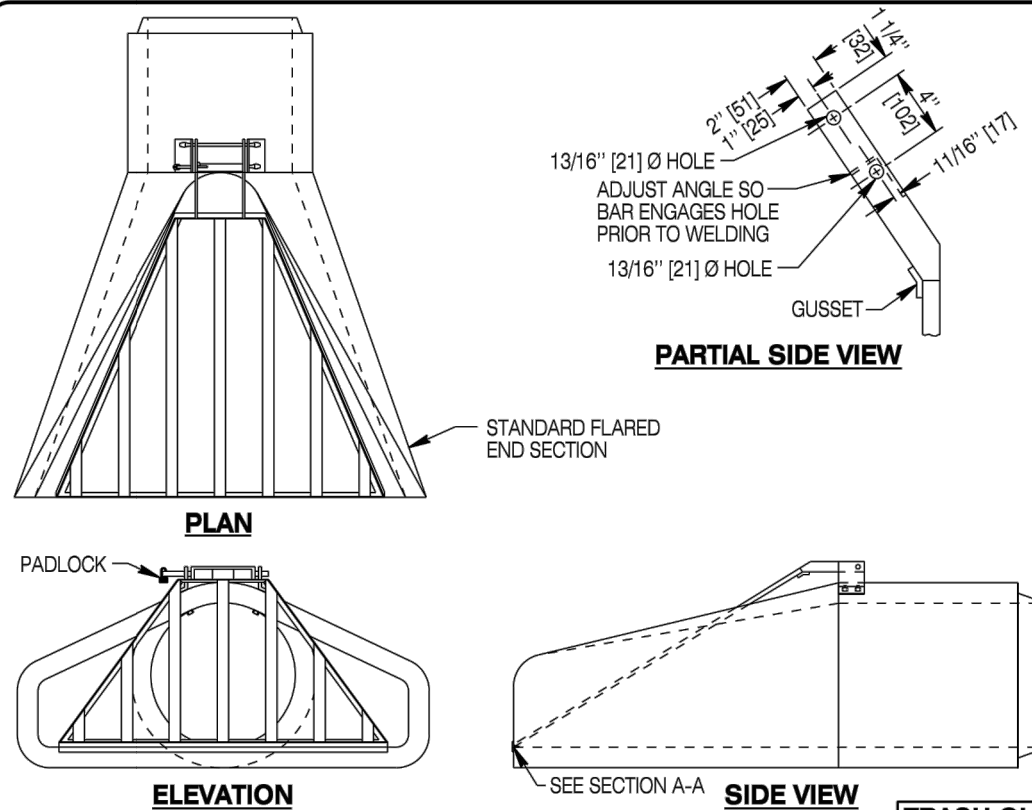
32-1882.00

DRAWING NO.

C09

SHEET 10 OF 11

Drawing Name: F:\32-1882.00 JAMESTOWN MASTER PLAN\MAINDWG\SHEETS\32-1882.00 DETAILS.DWG Thursday, July 13, 2017 4:03 PM By: RICKS, RONALD



GENERAL NOTES

Trash guards are not designed to carry wheel loadings and as such are not to be used as safety grates.
If the flared end dimensions vary from these shown in the standard plans, make necessary adjustments to trash guard dimensions.

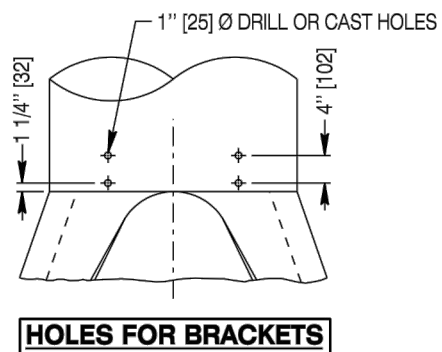
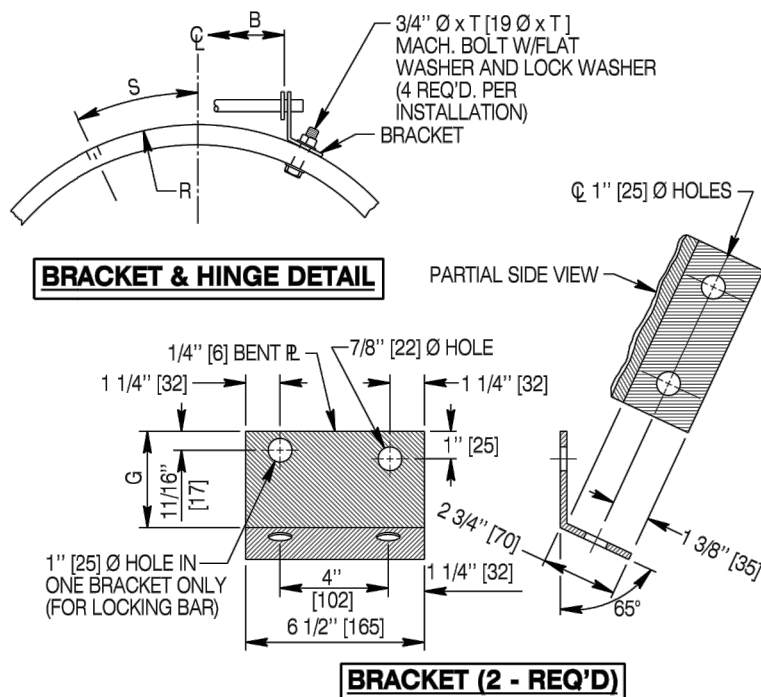


TABLE OF DIMENSIONS																			
TRASH GUARD										MOUNTING									
INSIDE DIAMETER	A	B	C	D	G	H	J	L	W	R	S	T							
IN mm	IN mm	IN mm	EA	IN mm	IN mm	DEG	DEG	IN mm	IN mm	IN mm	IN mm	IN mm	IN mm	IN mm	IN mm	IN mm	IN mm	IN mm	IN mm
18 450	10 255	6 1/2 165	3 8	205 3	75 45°	45°	31	790	28 710	11 1/2 290	5 125	5 125							
24 600	12 305	9 1/2 240	5 8	205 3	75 35°	55°	47 1/2 1210	40 1015	15 380	6 1/2 165	5 1/2 140	5 1/2 140							
30 750	15 380	12 1/2 320	5 9	230 3	75 35°	55°	59 3/4 1520	52 1320	18 1/2 470	8 205	6 150	6 150							
36 900	18 460	15 1/2 390	7 8 1/2	215 4	100 35°	55°	71 1/4 1810	58 1475	22 560	9 1/2 240	6 1/2 165	6 1/2 165							
42 1050	21 535	18 1/2 470	7 9	230 4	100 40°	50°	75 1905	64 1625	25 1/2 650	11 280	7 180	7 180							
48 1200	24 610	21 1/2 545	9 8	205 4	100 40°	50°	82 3/4 2100	70 1780	29 740	12 3/4 325	7 1/2 190	7 1/2 190							

Designed by: BOS
Drawn by: GLD
Checked by: RRC
Previous Dwg. No. 619-01A

ROUND REINFORCED CONCRETE PIPE

Note: Units shown in brackets [] are metric and are in millimeters (mm) unless other units are shown.



TRASH GUARDS FOR PIPE

STANDARD PLAN

STANDARD PLAN NUMBER
619-1

SHEET 3 of 5

Issued by: ENGINEERING SERVICES
Date Issued: NOVEMBER, 2004

FILE: j:\StanDual Std_Wrk\619-1.dwg

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AYRES
ASSOCIATES

DETAILS - 4 OF 4

PROJECT C 30%
CONCEPTUAL DESIGN
TOWN OF JAMESTOWN

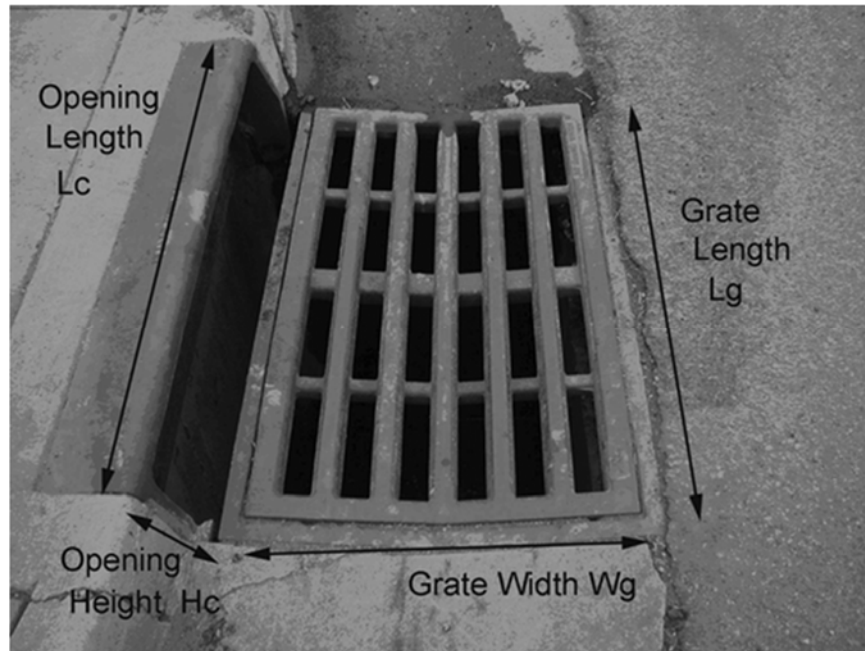
Revisions	Date

Project Mgr. DAM
Designed By: MCS
Drawn By: RGR
Approved By: DAM
Date: 07/14/17

PROJECT NO.
32-1882.00

DRAWING NO.
C10

SHEET 11 OF 11



Type 13 Combo Inlet



Type 13 Inlet



Type R Curb Inlet



Type C Inlet



Type D Inlet



Concrete Apron (Sloped Towards Inlet)



Flared End Section (FES) with Trash Rack