STORM DRAINAGE SYSTEM STANDARD DETAILS

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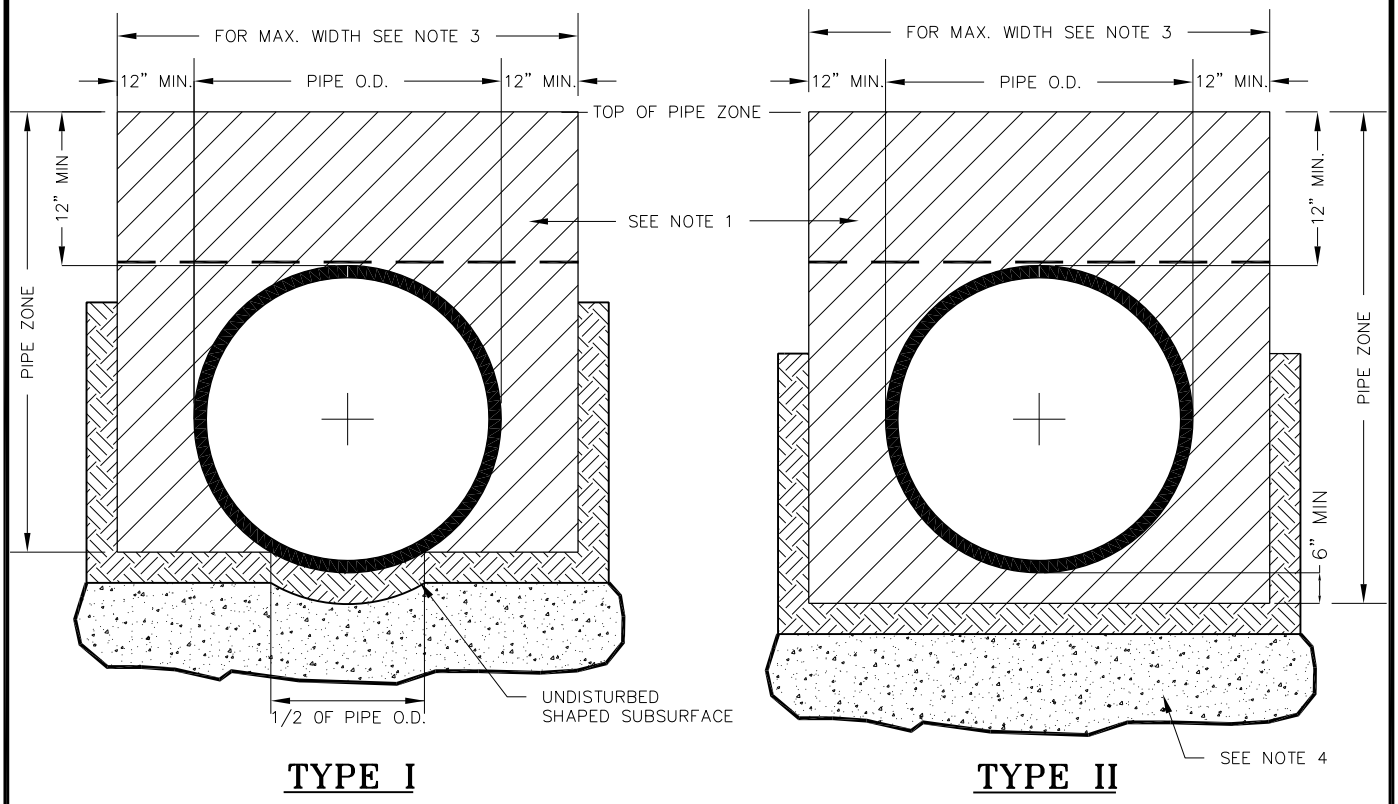
NO.	AUTHORIZED BY	REVISIONS	DATE			
1	APPROVED		SEPT. 06	DRAPER CITY	STORM DRAINAGE SYSTEM STANDARDS	SD-00



TYPE I **TYPE II**

GENERAL NOTES

1. 1st LIFT SHALL BE COMPACTED IN A MAXIMUM OF 8" OR TO SPRING LINE, WHICHEVER IS LESS. SUBSEQUENT LIFTS SHALL BE A MAXIMUM OF 8" LIFTS COMPACTED.

2. "O.D." MEANS OUTSIDE DIAMETER OF PIPE BARREL. "I.D." MEANS INSIDE DIAMETER OF PIPE BARREL.

3. MAXIMUM WIDTH OF TRENCH MEASURED AT THE TOP OF THE PIPE, INCLUDING ANY NECESSARY SHEATHING IS AS FOLLOWS:

PIPE I.D.	MAX. TRENCH WIDTH
LESS THAN 33"	O.D. + 24"
GREATER THAN 33"	O.D. + 30"

4. FOR FOUNDATION STABILIZATION, (IF NEEDED) USE AGGREGATE CONFORMING TO DRAPER CITY SPECIFICATIONS, SECTION 02230, 2.07.

6. TYPE I: RIGID NON-PRESSURE PIPE

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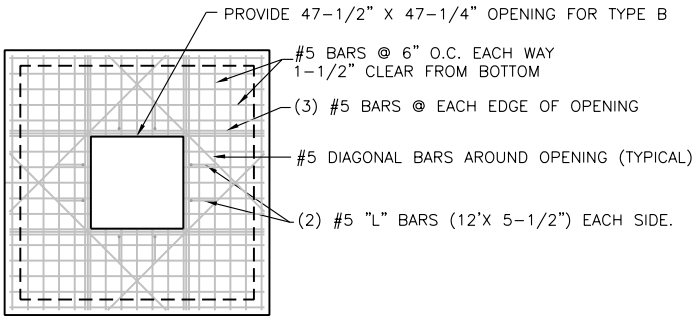
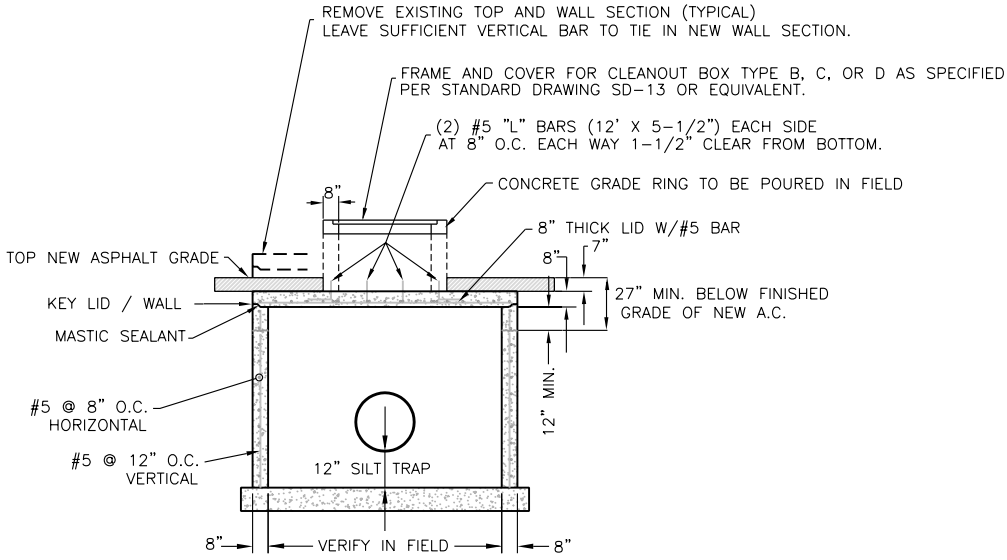
DRAPER CITY

PIPE ZONE/TRENCH DETAIL

SD-01



TOP VIEW
N.T.S.



NOTE : FIELD MEASURE AND VERIFY DIMENSIONS OF EACH BOX PRIOR TO CONSTRUCTION OF DECK LID.

ADJUST TO GRADE
N.T.S.

NOTES :

1. BACKFILL: PLACE GRANULAR BACKFILL BORROW (MAXIMUM 3/4") IN PIPE ZONE IN LIFTS NOT EXCEEDING 6" AFTER COMPACTION. COMPACT TO AT LEAST 95 PERCENT OF THE MAXIMUM DRY DENSITY OF THE MODIFIED PROCTOR AS PER ASTM D 1557 OR AASHTO T 180 AT ± 2 PERCENT OF THE OPTIMUM MOISTURE CONTENT.

2. CONCRETE: USE CLASS 4,000 P.S.I. PORTLAND CEMENT

3. REINFORCEMENT: ASTM A615, GRADE 60 DEFORMED ROD, 3" CLEAR FROM THE FACE OF THE CONCRETE

4. COVER AND FRAME: SEE STANDARD DRAWING SD-13 OR EQUIVALENT. ADJUST CONCRETE DIMENSIONS AT FRAME ACCORDINGLY

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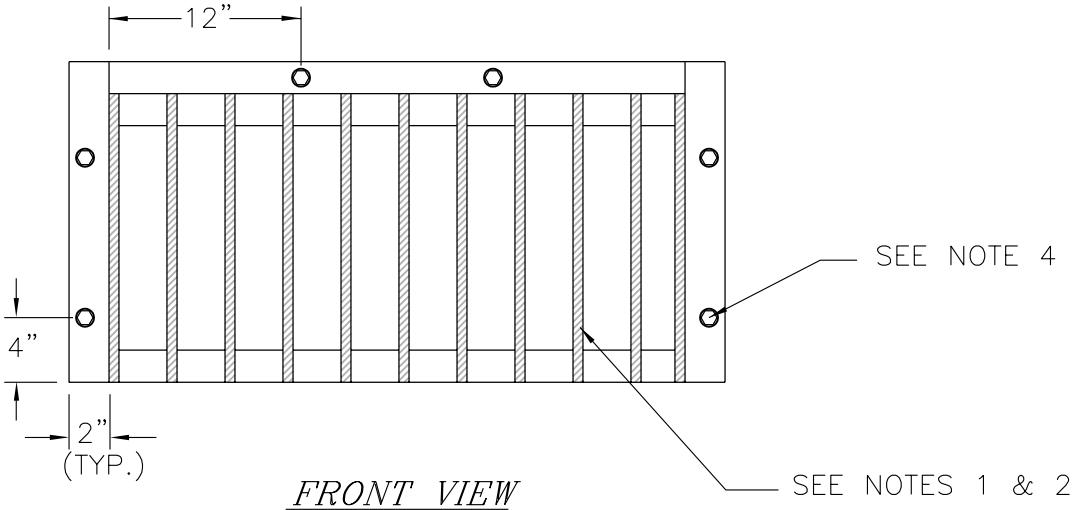
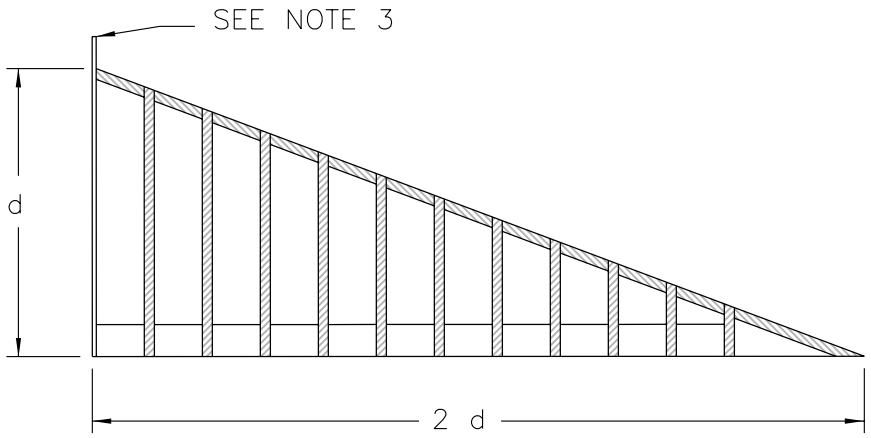
DRAPER CITY

RAISE CLEANOUT BOX TO GRADE CLEANOUT BOX

SD-02



FRONT VIEW



SIDE VIEW

NOTES

1. SPACING BETWEEN BARS TO BE 3".
2. BAR SIZE TO BE 5/8" DIAMETER STEEL BARS OR #5 REBAR.
3. PLATE THICKNESS TO BE 3/16" MINIMUM BY 2" WIDE.
4. USE 1/2" BOLTS WITH 1/8" WASHERS TO AFFIX GRATE.
5. ALL JOINTS TO BE WELDED
6. d = DIAMETER OF PIPE

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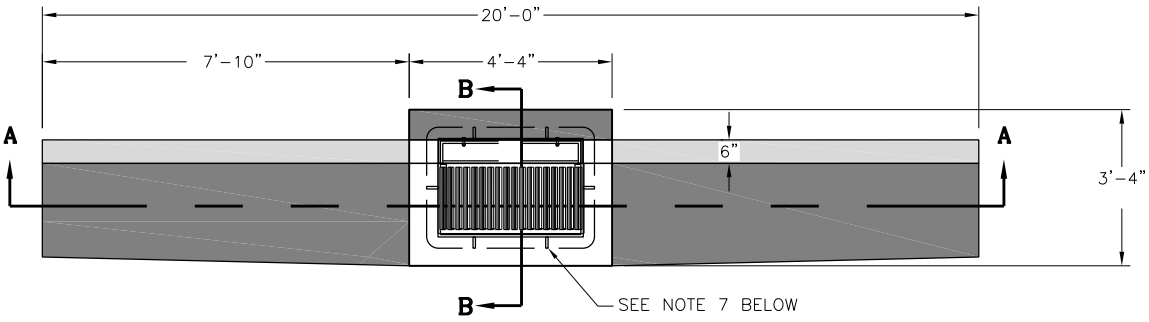
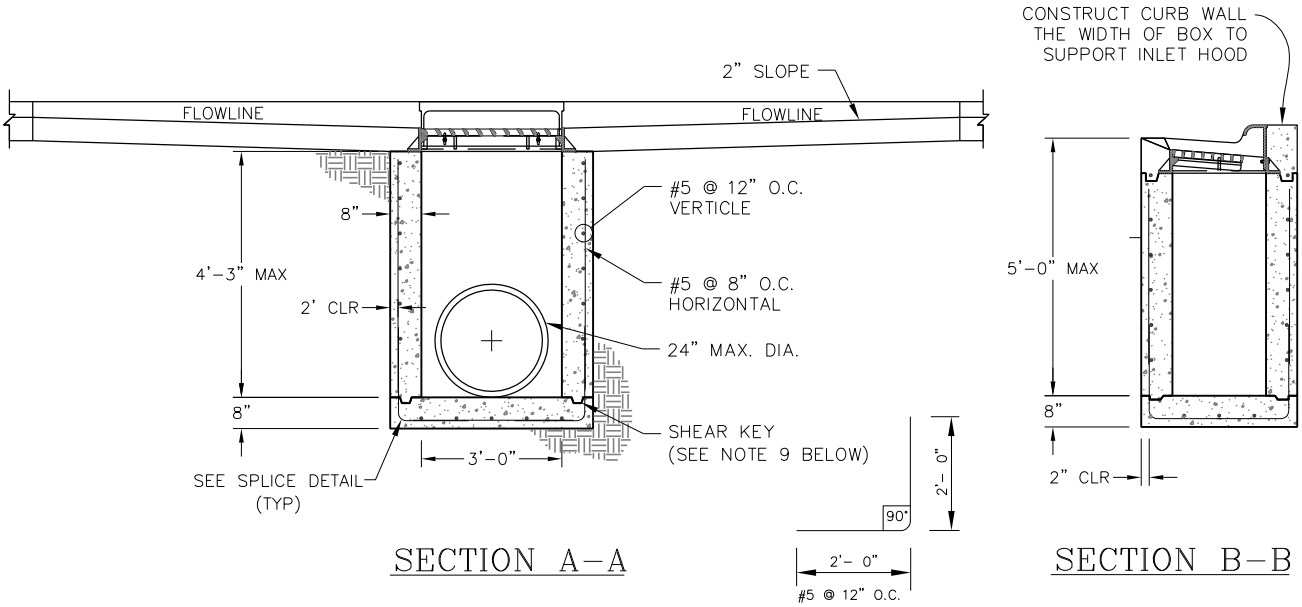
1	APPROVED		SEPT. 06	DRAPER CITY	**DEBRIS GATE**	**SD-03**



PLAN VIEW: CURB INLET BOX



SECTION A-A

SPLICE DETAIL

SECTION B-B

NOTES:

1. ALL REINFORCING STEEL SHALL BE #5 REBAR-ASTM A615, AND SHALL HAVE A MINIMUM OF TWO INCHES COVER OR CLEARANCE FROM ALL SURFACES AND OPENINGS, UNLESS OTHERWISE SPECIFIED.
2. IF DEPTH OF BOX FROM FINISHED GRADE TO INVERT ELEVATION DOES NOT EXCEED 6'-0", USE SINGLE MAT OF REINFORCING, FOR 6' TO 12', USE DOUBLE MAT. FOR BOXES EXCEEDING 12', CONSULT WITH THE CITY ENGINEER, OR HIS AUTHORIZED REPRESENTATIVE.
3. ALL REBAR SPLICES TO BE NOT LESS THAN TWENTY DIAMETERS.
4. CONTRACTOR'S OPTION TO CUT STEEL IN FIELD.
5. ALL CONCRETE SHALL BE CLASS AA(AE), 4000 P.S.I. PORTLAND CEMENT.
6. FORMING BOTH SIDES OF WALLS IS REQUIRED.
7. PRECAST CONCRETE LEVELING COLLAR AVAILABLE IN 4, 6 OR 8 INCH THICKNESS. GROUT UNDER MANHOLE COVER FRAME AS REQUIRED TO LEVEL.
8. THE FRAME AND GRATING SHALL BE CAST DUCTILE IRON, CONFORMING TO THE A.A.S.H.O. STANDARD SPECIFICATIONS FOR DUCTILE IRON CASTINGS A.S.T.M. DESIGNATION A-256, GRADE 60-45-10.
9. FOR STANDARD MANHOLE, USE D&L SUPPLY MODEL A-1180 OR EQUIVALENT. SEE DRAWING SD-13 FOR GRATE, FRAME, LADDER STEPS, AND SHEAR KEY DETAILS.
10. BACKFILL: INSTALL BACKFILL IN LIFTS NOT EXCEEDING 8" AFTER COMPACTION. COMPACT TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY OF THE MODIFIED PROCTOR AS PER CURRENT ASTM D 1557 OR AASHTO T-180 SPECIFICATIONS; AT ± 2% OF OPTIMUM MOISTURE CONTENT.

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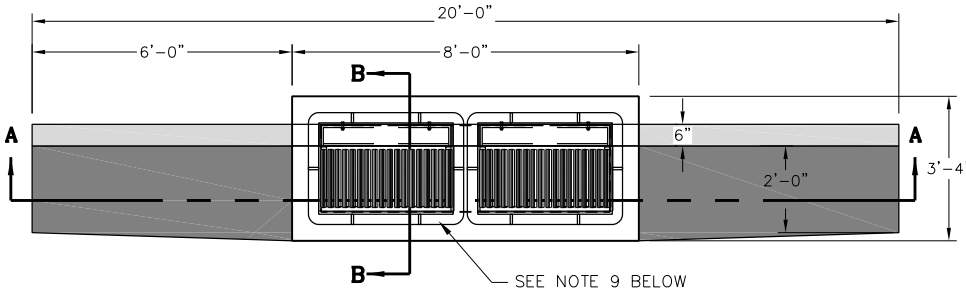
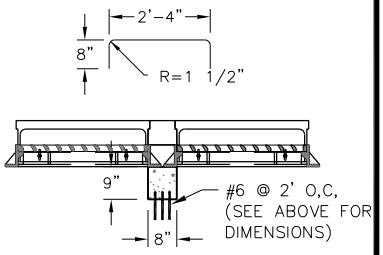
DRAPER CITY

STANDARD SINGLE GRATE HOODED INLET BOX

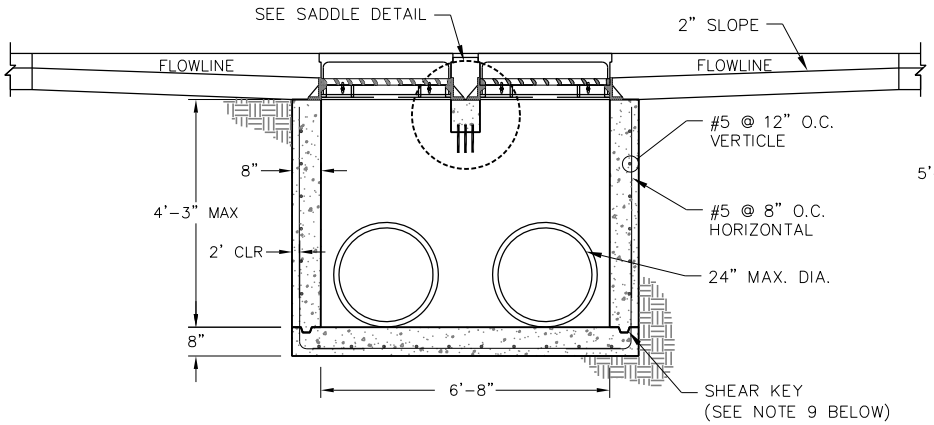
SD-04



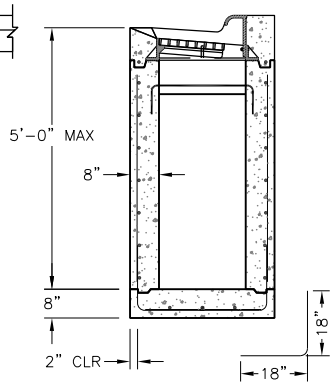
PLAN VIEW: CURB INLET BOX



DETAIL: SADDLE



SECTION A-A



SECTION B-B

NOTES:

1. ALL REINFORCING STEEL SHALL BE #5 REBAR-ASTM A615, AND SHALL HAVE A MINIMUM OF TWO INCHES COVER OR CLEARANCE FROM ALL SURFACES AND OPENINGS, UNLESS OTHERWISE SPECIFIED.
2. IF DEPTH OF BOX FROM FINISHED GRADE TO INVERT ELEVATION DOES NOT EXCEED 6'-0", USE SINGLE MAT OF REINFORCING, FOR 6' TO 12', USE DOUBLE MAT. FOR BOXES EXCEEDING 12', CONSULT WITH THE CITY ENGINEER, OR HIS AUTHORIZED REPRESENTATIVE.
3. ALL REBAR SPLICES TO BE NOT LESS THAN TWENTY DIAMETERS.
4. CONTRACTOR'S OPTION TO CUT STEEL IN FIELD.
5. ALL CONCRETE SHALL BE CLASS AA(AE), 4000 P.S.I. PORTLAND CEMENT.
6. FORMING BOTH SIDES OF WALLS IS REQUIRED.
7. PRECAST CONCRETE LEVELING COLLAR AVAILABLE IN 4, 6 OR 8 INCH THICKNESS. GROUT UNDER MANHOLE COVER FRAME AS REQUIRED TO LEVEL.
8. THE FRAME AND GRATING SHALL BE CAST DUCTILE IRON, CONFORMING TO THE A.A.S.H.O. STANDARD SPECIFICATIONS FOR DUCTILE IRON CASTINGS A.S.T.M. DESIGNATION A-256, GRADE 60-45-10.
9. FOR STANDARD MANHOLE, USE D&L SUPPLY MODEL A-1180 OR EQUIVALENT. SEE DRAWING SD-13 FOR GRATE, FRAME, LADDER STEPS, AND SHEAR KEY DETAILS.
10. PIPE SIZES AND LOCATIONS WILL BE SHOWN ON OTHER DRAWINGS.
11. BACKFILL: INSTALL BACKFILL IN LIFTS NOT EXCEEDING 8" AFTER COMPACTION. COMPACT TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY OF THE MODIFIED PROCTOR AS PER CURRENT ASTM D 1557 OR AASHTO T-180 SPECIFICATIONS; AT ± 2% OF OPTIMUM MOISTURE CONTENT.

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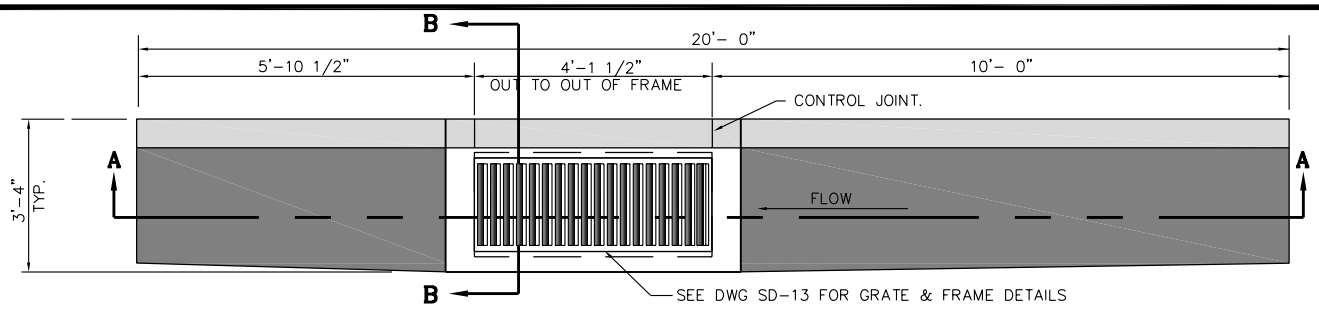
DRAPER CITY

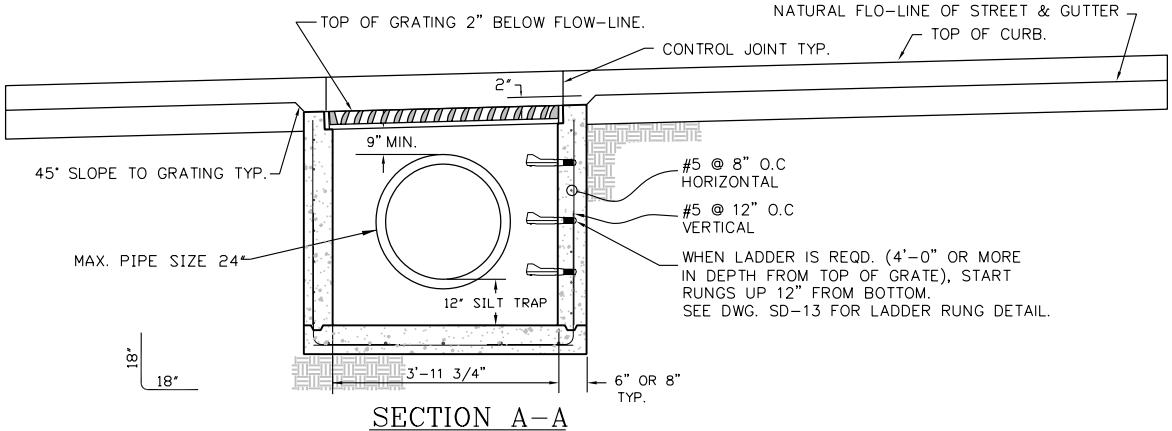
STANDARD DOUBLE GRATE HOODED INLET BOX

SD-05



SINGLE GUTTER INLET BOX

N.T.S.

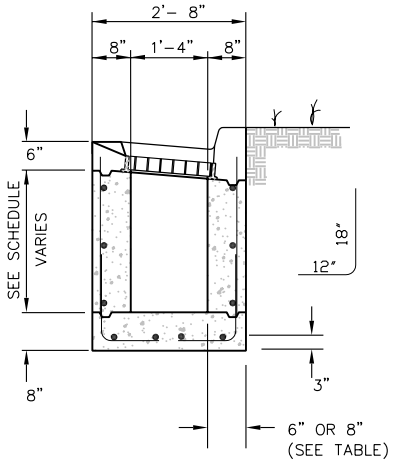


SECTION A-A

N.T.S.

STEEL SCHEDULE			WALL THICKNESS
HEIGHT	VERT. STL.	HORIZ. STL.	
0'- 4'	#5 @ 12"O.C.	#5 @ 8"O.C.	6" WALL
4'- 6'	#5 @ 12"O.C.	#5 @ 8"O.C.	6" WALL
6'- 8'	#5 @ 12"O.C.	#5 @ 8"O.C.	8" WALL
8'- 10'	#5 @ 12"O.C.	#5 @ 8"O.C.	8" WALL
10'- 12'	#5 @ 12"O.C.	#5 @ 8"O.C.	8" WALL

NOTE:
1) INSIDE FACE BARS TO BE STAGGERED W/OUTSIDE FACE BARS.
2) USE DOUBLE CURTAIN REINF. FOR INLET BOXES 6'- 8" OR MORE DEEP.



SECTION B-B

N.T.S.

NOTES:

1. MATERIALS, CONSTRUCTION & WORKMANSHIP SHALL BE IN ACCORDANCE WITH CURRENT EDITION OF "STATE OF UTAH STD SPEC'S FOR ROAD AND BRIDGE CONST.", ADDENDUMS, AND SPECIAL PROVISIONS THERETO.
2. ALL REINFORCING STEEL SHALL BE INTERMEDIATE GRADE 40.
3. ALL CONCRETE SHALL BE CLASS AA(AE)- 4000 P.S.I. PORTLAND CEMENT.
4. PIPE SIZES AND LOCATIONS WILL BE SHOWN ON OTHER DWGS, INCL FLOW LINE ELEVATIONS.
5. IF ALLOWED BY ENGINEER, MAX SIZE OF R.C.P. APPROACHING BY THE SIDES IS 18", 22"x15" STL PIPE ARCH & 21" DIA C.M.P. IN BOX TYPES 1 & 2.
6. FORMING BOTH SIDES OF WALLS IS REQD.
7. CONTRACTOR'S OPTION TO CUT STEEL IN FIELD.
8. ALL STEEL SHALL HAVE A MIN. OF 2" CONCRETE COVER.
9. GREY IRON CASTING: ASTM A48 CLASS 30 MIN.
10. SHEAR KEY REQUIRED BOTH WAYS. (SEE DWG. SD-13 FOR DETAILS)
11. COMPACT TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY OF THE MODIFIED PROCTOR AS PER CURRENT ASTM D 1557 OR AASHTO T 180 SPECIFICATIONS; AT ± 2% OF OPTIMUM MOISTURE CONTENT.
12. INDICATES CLASS AA(AE) CONCRETE.

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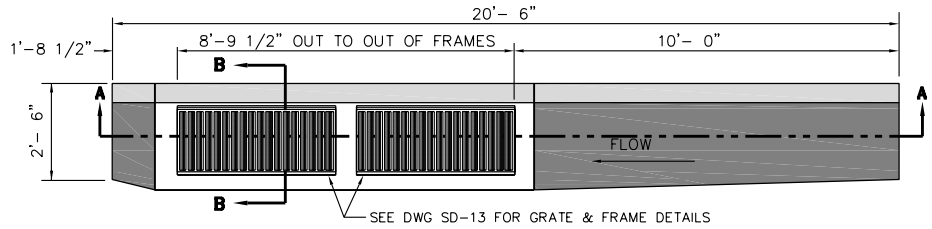
1	APPROVED		SEPT. 06

DRAPER CITY

SINGLE GRATE CURB INLET BY APPROVAL ONLY

SD-06



DOUBLE GUTTER INLET BOX

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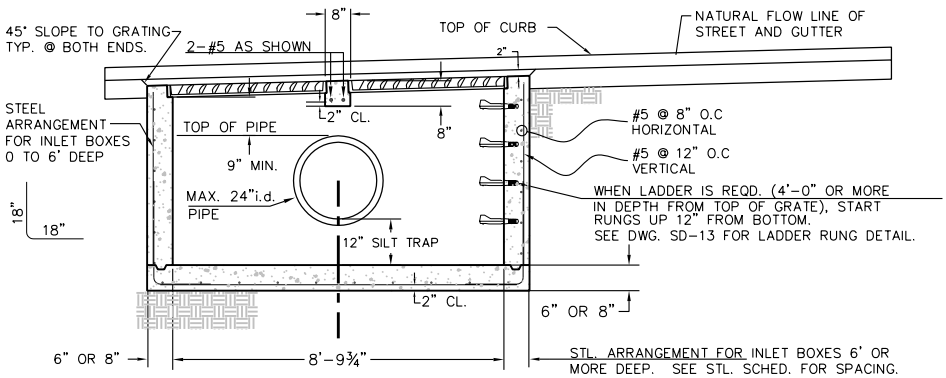
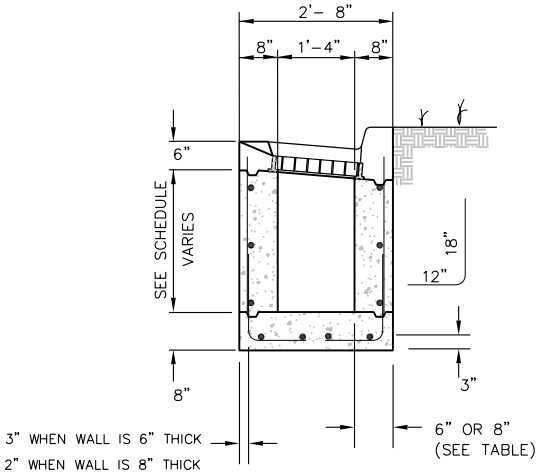


SECTION A-A

N.T.S.

STEEL SCHEDULE			WALL THICKNESS
HEIGHT	VERT. STL.	HORIZ. STL.	
0'- 4'	#5 @ 12"O.C.	#5 @ 8"O.C.	6" WALL
4'- 6'	#5 @ 12"O.C.	#5 @ 8"O.C.	6" WALL
6'- 8'	#5 @ 12"O.C.	#5 @ 8"O.C.	8" WALL
8'- 10'	#5 @ 12"O.C.	#5 @ 8"O.C.	8" WALL
10'- 12'	#5 @ 12"O.C.	#5 @ 8"O.C.	8" WALL

NOTE:
1) INSIDE FACE BARS TO BE STAGGERED W/OUTSIDE FACE BARS.
2) USE DOUBLE CURTAIN REINF. FOR INLET BOXES 6'- 8" OR MORE DEEP.



SECTION B-B

N.T.S.

NOTES:

1. MATERIALS, CONSTRUCTION & WORKMANSHIP SHALL BE IN ACCORDANCE WITH CURRENT EDITION OF "STATE OF UTAH STD SPEC'S FOR ROAD AND BRIDGE CONST.", ADDENDUMS, AND SPECIAL PROVISIONS THERETO.
2. ALL REINFORCING STEEL SHALL BE INTERMEDIATE GRADE 40.
3. ALL CONCRETE SHALL BE CLASS AA(AE)- 4000 P.S.I. PORTLAND CEMENT.
4. PIPE SIZES AND LOCATIONS WILL BE SHOWN ON OTHER DWGS, INCL FLOW LINE ELEVATIONS.
5. IF ALLOWED BY ENGINEER, MAX SIZE OF R.C.P. APPROACHING BY THE SIDES IS 18", 22"x15" STL PIPE ARCH & 21" DIA C.M.P. IN BOX TYPES 1 & 2.
6. FORMING BOTH SIDES OF WALLS IS REQD.
7. CONTRACTOR'S OPTION TO CUT STEEL IN FIELD.
8. ALL STEEL SHALL HAVE A MIN. OF 2" CONCRETE COVER.
9. GREY IRON CASTING: ASTM A48 CLASS 30 MIN.
10. SHEAR KEY REQUIRED BOTH WAYS. (SEE DWG. SD-13 FOR DETAILS)
11. COMPACT TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY OF THE MODIFIED PROCTOR AS PER CURRENT ASTM D 1557 OR AASHTO T 180 SPECIFICATIONS; AT ± 2% OF OPTIMUM MOISTURE CONTENT.
12. INDICATES CLASS AA(AE) CONCRETE.

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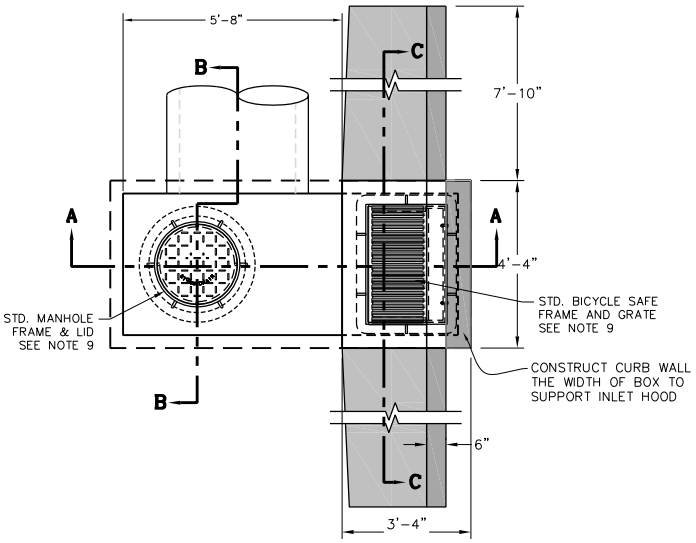
DRAPER CITY

DOUBLE GRATE CURB INLET BY APPROVAL ONLY

SD-07



PLAN VIEW COMBINATION BOX

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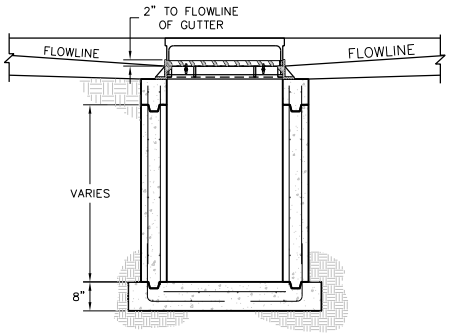

SECTION C-C

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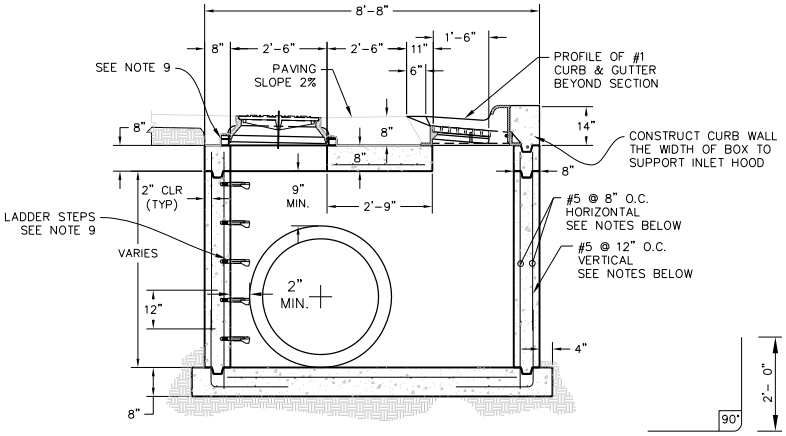
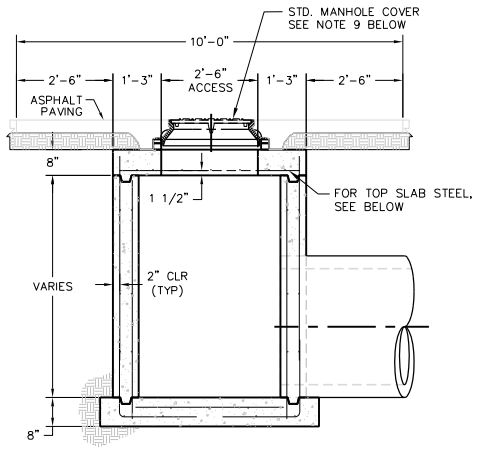


SECTION A-A

N.T.S.

SPLICE DETAIL

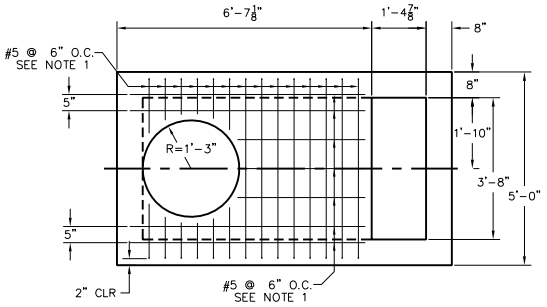


SECTION B-B

N.T.S.

NOTES:

1. ALL REINFORCING STEEL SHALL BE #5 REBAR-ASTM A615, AND SHALL HAVE A MINIMUM OF TWO INCHES COVER OR CLEARANCE FROM ALL SURFACES AND OPENINGS, UNLESS OTHERWISE SPECIFIED.
2. IF DEPTH OF BOX FROM FINISHED GRADE TO INVERT ELEVATION DOES NOT EXCEED 6'-0", USE SINGLE MAT OF REINFORCING, FOR 6' TO 12', USE DOUBLE MAT. FOR BOXES EXCEEDING 12', CONSULT WITH THE CITY ENGINEER, OR HIS AUTHORIZED REPRESENTATIVE.
3. ALL REBAR SPLICES TO BE NOT LESS THAN TWENTY DIAMETERS.
4. CONTRACTOR'S OPTION TO CUT STEEL IN FIELD.
5. ALL CONCRETE SHALL BE CLASS AA(AE), 4000 P.S.I. PORTLAND CEMENT.
6. FORMING BOTH SIDES OF WALLS IS REQUIRED.
7. PRECAST CONCRETE LEVELING COLLAR AVAILABLE IN 4, 6 OR 8 INCH THICKNESS. GROUT UNDER MANHOLE COVER FRAME AS REQUIRED TO LEVEL.
8. THE FRAME AND GRATING SHALL BE CAST DUCTILE IRON, CONFORMING TO THE A.A.S.H.O. STANDARD SPECIFICATIONS FOR DUCTILE IRON CASTINGS A.S.T.M. DESIGNATION A-256, GRADE 60-45-10.
9. FOR STANDARD MANHOLE, USE D&L SUPPLY MODEL A-1180 OR EQUIVALENT. SEE DRAWING SD-13 FOR GRATE, FRAME, LADDER STEPS, AND SHEAR KEY DETAILS.
10. BACKFILL: INSTALL BACKFILL IN LIFTS NOT EXCEEDING 8" AFTER COMPACTION. COMPACT TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY OF THE MODIFIED PROCTOR AS PER CURRENT ASTM D 1557 OR AASHTO T-180 SPECIFICATIONS; AT ± 2% OF OPTIMUM MOISTURE CONTENT.



REBAR SCHEDULE: TOP SLAB

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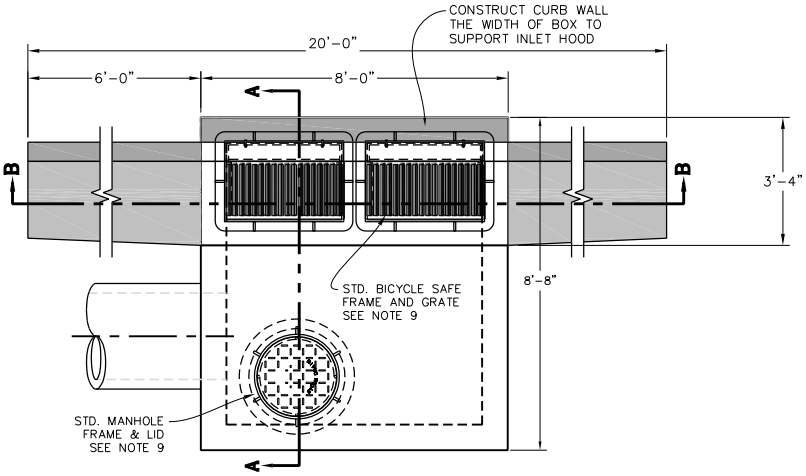
1	APPROVED		pending

DRAPER CITY

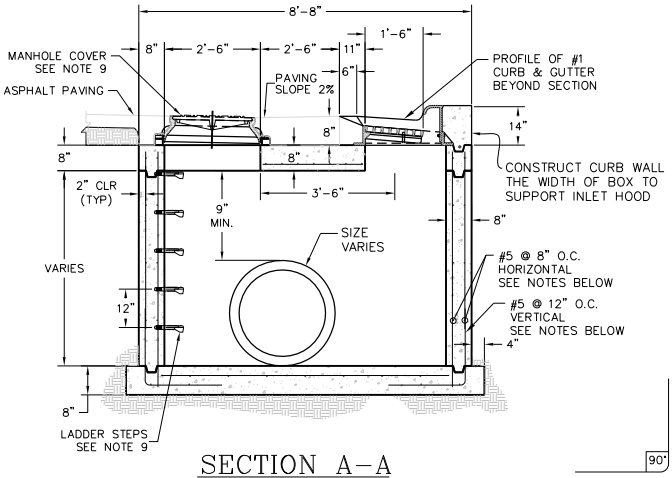
SINGLE GRATE COMBINATION BOX

SD-08



PLAN VIEW: COMBINATION BOX

N.T.S.



SECTION A-A

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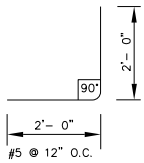
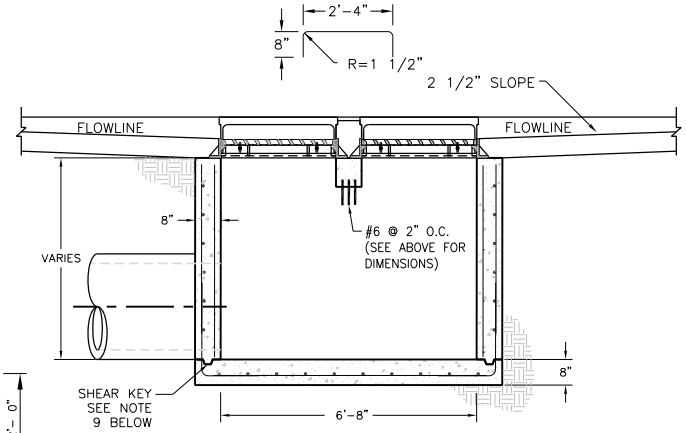


SPLICE DETAIL

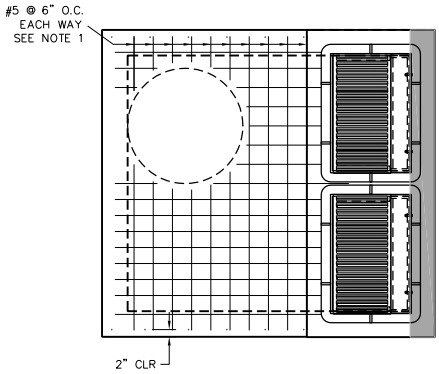


SECTION B-B

N.T.S.

NOTES:

1. ALL REINFORCING STEEL SHALL BE #5 REBAR-ASTM A615, AND SHALL HAVE A MINIMUM OF TWO INCHES COVER OR CLEARANCE FROM ALL SURFACES AND OPENINGS, UNLESS OTHERWISE SPECIFIED.
2. IF DEPTH OF BOX FROM FINISHED GRADE TO INVERT ELEVATION DOES NOT EXCEED 6'-0", USE SINGLE MAT OF REINFORCING, FOR 6' TO 12', USE DOUBLE MAT. FOR BOXES EXCEEDING 12', CONSULT WITH THE CITY ENGINEER, OR HIS AUTHORIZED REPRESENTATIVE.
3. ALL REBAR SPLICES TO BE NOT LESS THAN TWENTY DIAMETERS.
4. CONTRACTOR'S OPTION TO CUT STEEL IN FIELD.
5. ALL CONCRETE SHALL BE CLASS AA(AE), 4000 P.S.I. PORTLAND CEMENT.
6. FORMING BOTH SIDES OF WALLS IS REQUIRED.
7. PRECAST CONCRETE LEVELING COLLAR AVAILABLE IN 4, 6 OR 8 INCH THICKNESS. GROUT UNDER MANHOLE COVER FRAME AS REQUIRED TO LEVEL.
8. THE FRAME AND GRATING SHALL BE CAST DUCTILE IRON, CONFORMING TO THE A.A.S.H.O. STANDARD SPECIFICATIONS FOR DUCTILE IRON CASTINGS A.S.T.M. DESIGNATION A-256, GRADE 60-45-10.
9. FOR STANDARD MANHOLE, USE D&L SUPPLY MODEL A-1180 OR EQUIVALENT. SEE DRAWING SD-13 FOR GRATE, FRAME, LADDER STEPS, AND SHEAR KEY DETAILS.
10. BACKFILL: INSTALL BACKFILL IN LIFTS NOT EXCEEDING 8" AFTER COMPACTION. COMPACT TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY OF THE MODIFIED PROCTOR AS PER CURRENT ASTM D 1557 OR AASHTO T-180 SPECIFICATIONS; AT ± 2% OF OPTIMUM MOISTURE CONTENT.



REBAR SCHEDULE: TOP SLAB

N.T.S.

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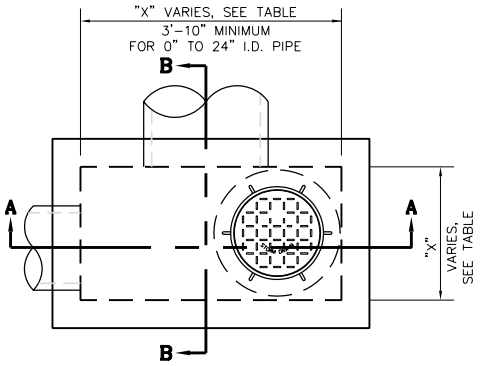
1	APPROVED		PENDING

DRAPER CITY

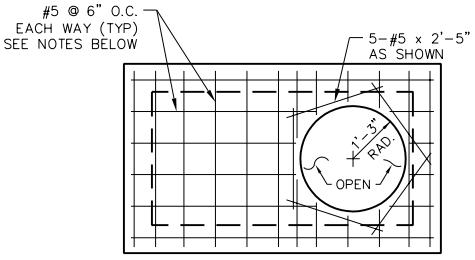
DOUBLE GRATE COMBINATION BOX

SD-09



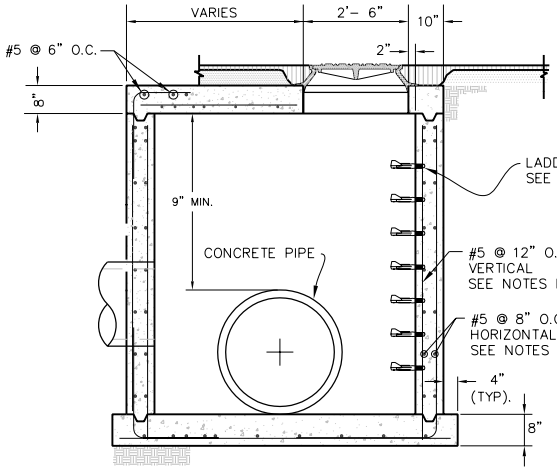
PLAN VIEW

N.T.S.



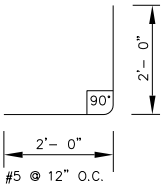
REBAR SCHEDULE; TOP SLAB

N.T.S.

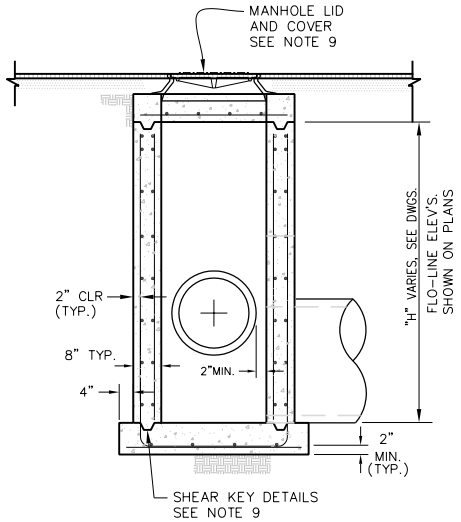


SECTION A-A

N.T.S.



SPLICE DETAIL



SECTION B-B

N.T.S.

NOTES:

1. ALL REINFORCING STEEL SHALL BE #5 REBAR-ASTM A615, AND SHALL HAVE A MINIMUM OF TWO INCHES COVER OR CLEARANCE FROM ALL SURFACES AND OPENINGS, UNLESS OTHERWISE SPECIFIED.
2. IF DEPTH OF BOX FROM FINISHED GRADE TO INVERT ELEVATION DOES NOT EXCEED 6'-0", USE SINGLE MAT OF REINFORCING, FOR 6' TO 12', USE DOUBLE MAT. FOR BOXES EXCEEDING 12', CONSULT WITH THE CITY ENGINEER, OR HIS AUTHORIZED REPRESENTATIVE.
3. ALL REBAR SPLICES TO BE NOT LESS THAN TWENTY DIAMETERS.
4. CONTRACTOR'S OPTION TO CUT STEEL IN FIELD.
5. ALL CONCRETE SHALL BE CLASS AA(AE), 4000 P.S.I. PORTLAND CEMENT.
6. FORMING BOTH SIDES OF WALLS IS REQUIRED.
7. PRECAST CONCRETE LEVELING COLLAR AVAILABLE IN 4, 6 OR 8 INCH THICKNESS. GROUT UNDER MANHOLE COVER FRAME AS REQUIRED TO LEVEL.
8. THE FRAME AND GRATING SHALL BE CAST DUCTILE IRON, CONFORMING TO THE A.A.S.H.O. STANDARD SPECIFICATIONS FOR DUCTILE IRON CASTINGS A.S.T.M. DESIGNATION A-256, GRADE 60-45-10.
9. FOR STANDARD MANHOLE, USE D&L SUPPLY MODEL A-1180 OR EQUIVALENT. SEE DRAWING SD-13 FOR GRATE, FRAME, LADDER STEPS, AND SHEAR KEY DETAILS.
10. BACKFILL: INSTALL BACKFILL IN LIFTS NOT EXCEEDING 8" AFTER COMPACTION. COMPACT TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY OF THE MODIFIED PROCTOR AS PER CURRENT ASTM D 1557 OR AASHTO T-180 SPECIFICATIONS; AT ± 2% OF OPTIMUM MOISTURE CONTENT.

PIPE SIZE	DIMENSION "X"
18"	3'- 10"
21"	3'- 10"
24"	3'- 10"
27"	4'- 2"
30"	4'- 6"
33"	4'- 9"
36"	5'- 0"
42"	5'- 7"
48"	6'- 3"
54"	6'- 9"

FOR LARGER PIPE SIZE, CHECK WITH CITY ENGINEER.

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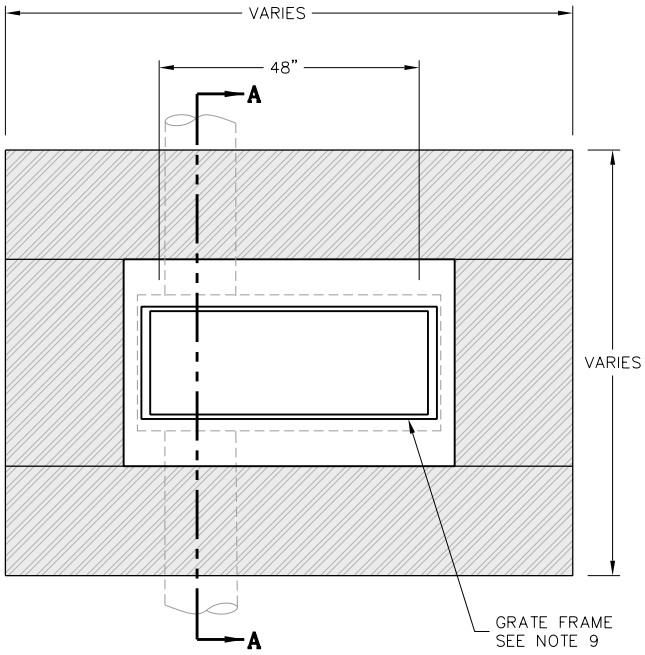
1	APPROVED		PENDING

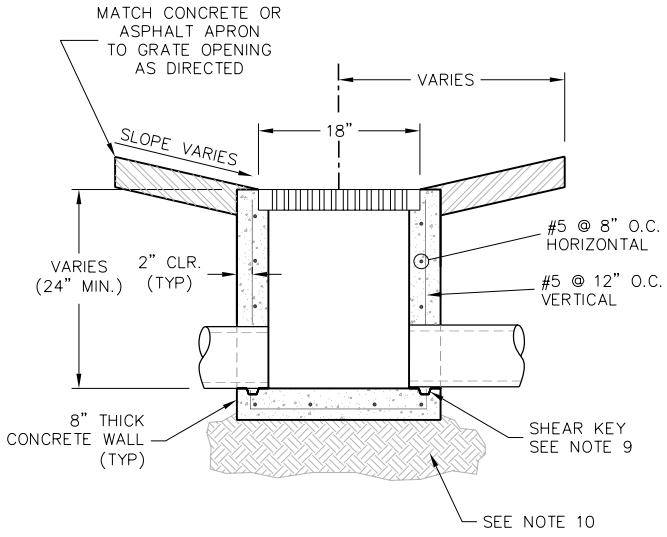
DRAPER CITY

STANDARD CLEANOUT BOX

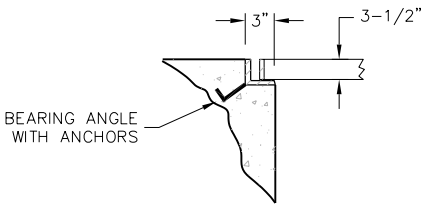
SD-10



PLAN



SECTION A–A



EDGE DETAIL

NOTES:

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2. IF DEPTH OF BOX FROM FINISHED GRADE TO INVERT ELEVATION DOES NOT EXCEED 6'–0", USE SINGLE MAT OF REINFORCING, FOR 6' TO 12', USE DOUBLE MAT. FOR BOXES EXCEEDING 12', CONSULT WITH THE CITY ENGINEER, OR HIS AUTHORIZED REPRESENTATIVE.
3. ALL REBAR SPLICES TO BE NOT LESS THAN TWENTY DIAMETERS.
4. CONTRACTOR'S OPTION TO CUT STEEL IN FIELD.
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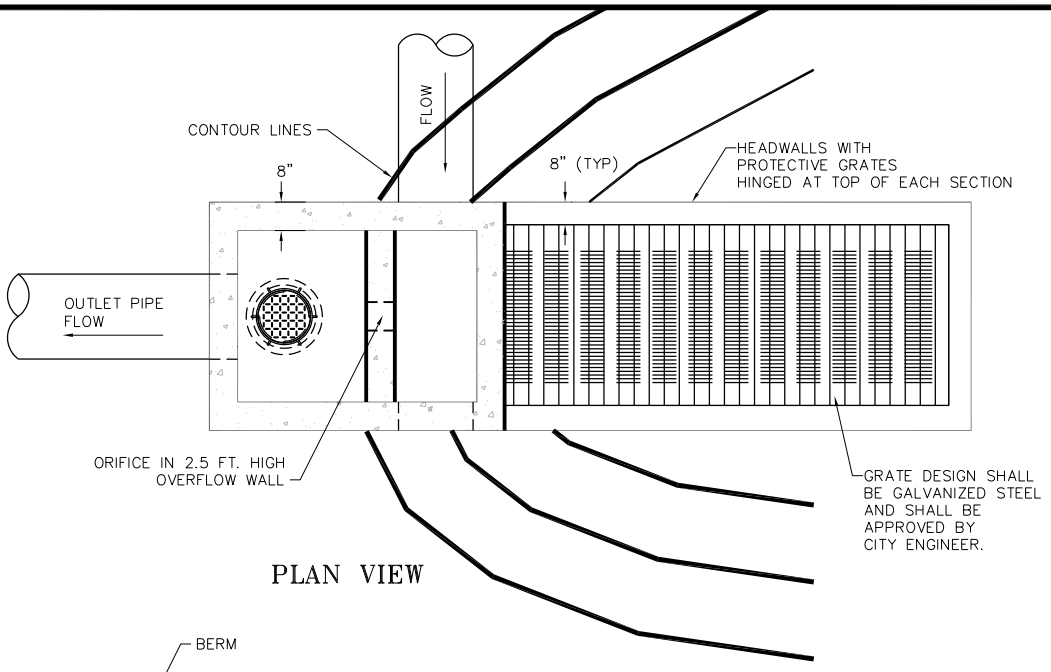
1	APPROVED		PENDING

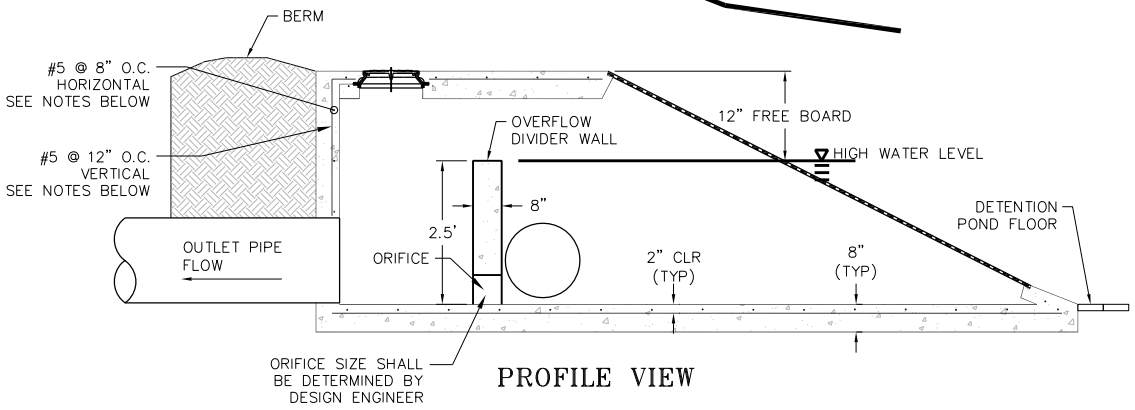
DRAPER CITY

SWALE/ PARKING LOT CATCH BASIN

SD–11



PLAN VIEW



PROFILE VIEW

NOTES:

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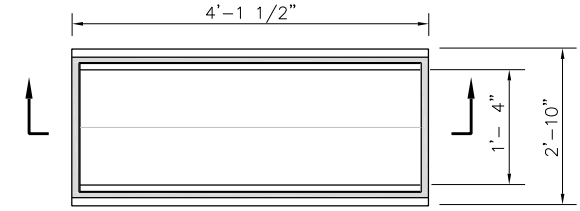
1	APPROVED		PENDING

DRAPER CITY

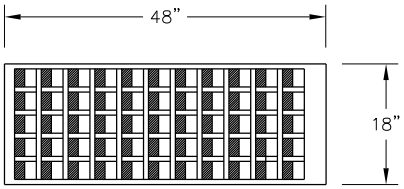
DETEN. POND INLET/OUTLET STRUCTURE W/ ORIFICE PLATE

SD–12



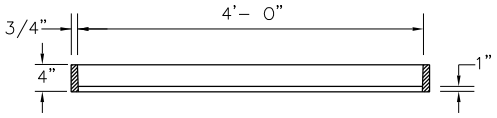
D & L SUPPLY

MODEL I-1803 (OR EQUIVALENT)

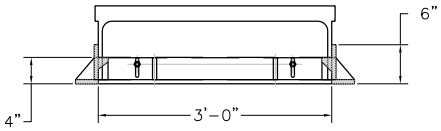


GRATE DETAIL

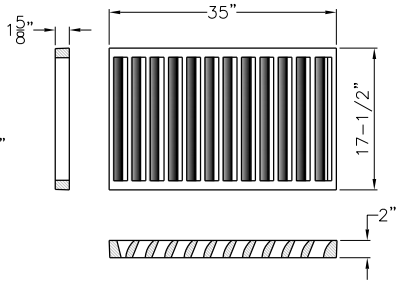
* D&L I-1803 OR EQUAL
* CAST IRON OR STEEL
* BICYCLE PROOF
* DESIGN FOR H-20 LOADING



FRAME DETAIL



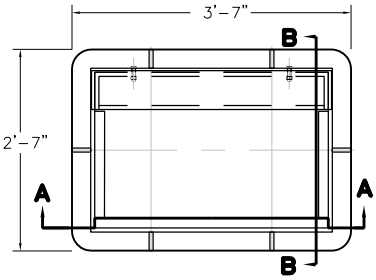
SECTION A-A



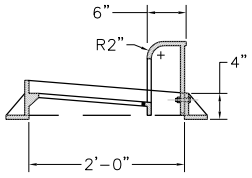
GRATE DETAIL

D & L SUPPLY

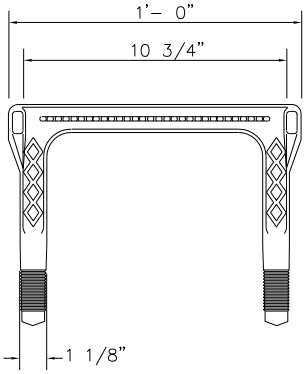
MODEL I-3516 (OR EQUIVALENT)



CURB HOOD INLET



SECTION B-B

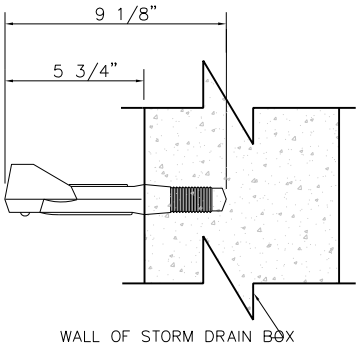


LADDER RUNG DETAIL

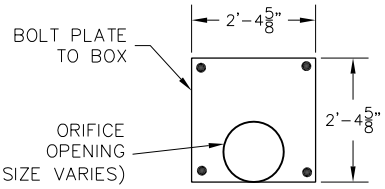
STEPS SHALL BE INSTALLED IN ALL MANHOLES 4 FEET AND DEEPER AS MEASURED FROM FINISHED GRADE.

M. A. INDUSTRIES INC.

COPOLYMER POLYPROPYLENE STEPS OR EQUIVALENT ALTERNATE

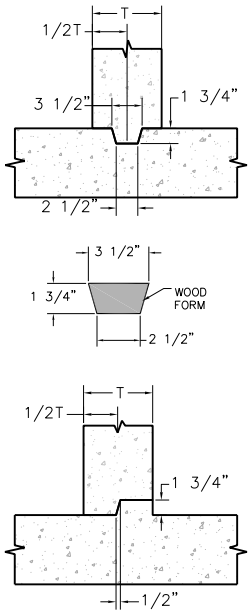


INSTALLATION DETAIL



ORIFICE PLATE

ALL FRAMES SHALL BE NON-CORROSIVE AND SHALL BE SEALED USING MASTIC.
ORIFICE SIZE WILL BE DETERMINED BY CITY.



SHEAR KEY DETAILS

NO.	AUTHORIZED BY	REVISIONS	DATE
1	APPROVED		PENDING

DRAPER CITY

STORM DRAIN BOX DETAILS

SD-13