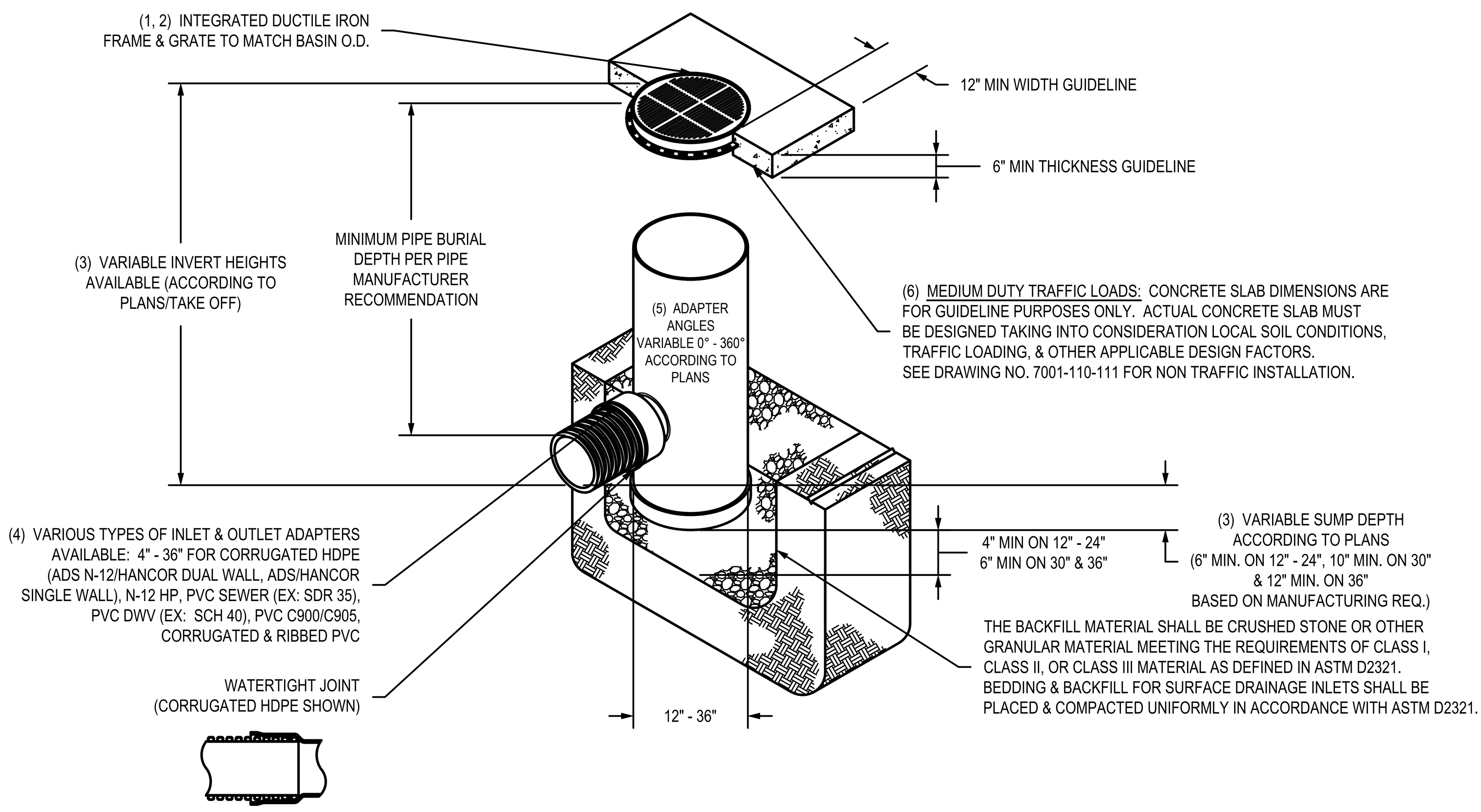
NYLOPLAST DRAIN BASIN WITH PEDESTRIAN GRATE

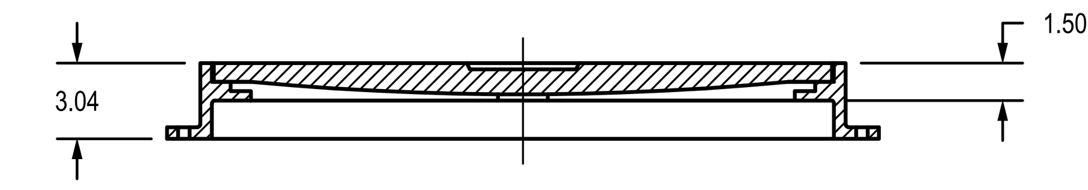


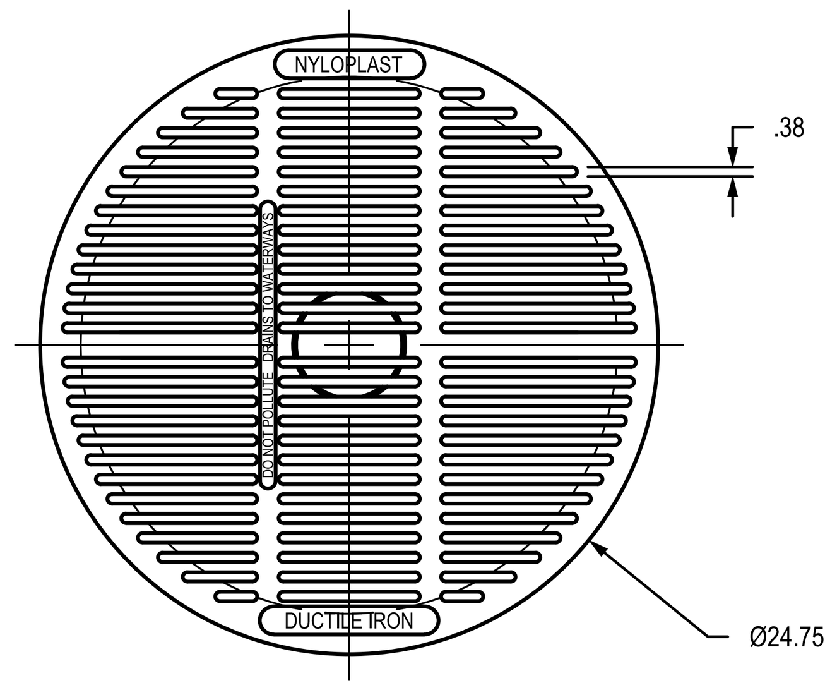
1 - 12" - 30" PEDESTRIAN GRATES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
2 - 12" - 30" FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
3 - DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 84" DUE TO SHIPPING RESTRICTIONS. SEE DRAWING NO. 7001-110-065.
4 - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL), N-12 HP, & PVC SEWER (4" - 36").
5 - ADAPTERS CAN BE MOUNTED 0° TO 360°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012.
6 - 12" - 24" PEDESTRIAN GRATES SHALL MEET H-10 LOAD RATING. 30" PEDESTRIAN GRATE SHALL MEET H-20 LOAD RATING (SEE DRAWING NO. 7001-110-144 FOR H-20 TRAFFIC LOAD GUIDELINES).

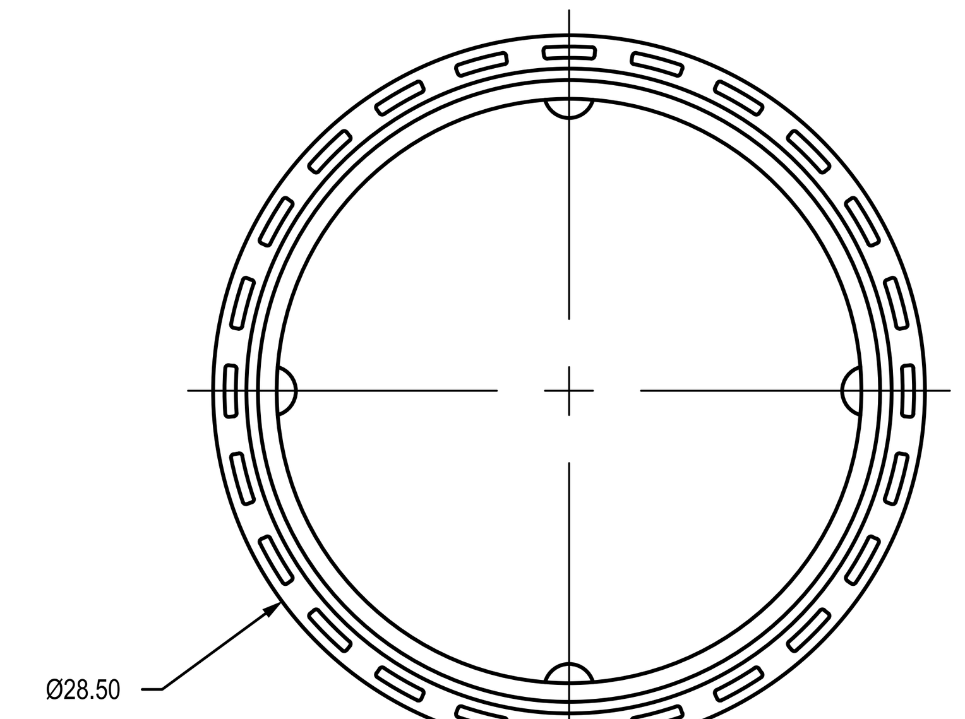
DRAWN BY EBC	MATERIAL PVC	Nyloplast	3130 VERONA AVE BUFORD, GA 30518 PHN (770) 932-2443 FAX (770) 932-2490 www.nyloplast-us.com
DATE 4-20-07			
REVISED BY NMH	PROJECT NO./NAME	TITLE DRAIN BASIN WITH PEDESTRIAN GRATE QUICK SPEC INSTALLATION DETAIL	
DATE 06-12-18			
DWG SIZE A	SCALE 1:40 SHEET 1 OF 1	DWG NO. 7001-110-283	REV E

2499CGP

APPROX. DRAIN AREA = 164.10 SQ IN
APPROX. WEIGHT WITH FRAME = 99.50 LBS







DIMENSIONS ARE FOR REFERENCE ONLY
ACTUAL DIMENSIONS MAY VARY
DIMENSIONS ARE IN INCHES
GRATE MEETS H-10 LOAD RATING
QUALITY: MATERIALS SHALL CONFORM TO ASTM A536 GRADE 70-50-05
PAINT: CASTINGS ARE FURNISHED WITH A BLACK PAINT
SIZE OF OPENING MEETS REQUIREMENTS OF AMERICAN DISABILITY ACT AS STATED IN FEDERAL REGISTER PART III, DEPARTMENT OF JUSTICE, 28 CFR PART 36.
LOCKING DEVICE AVAILABLE UPON REQUEST SEE DRAWING NO. 7001-110-023

DRAWN BY EBC	MATERIAL DUCTILE IRON	Nyloplast	3130 VERONA AVE BUFORD, GA 30518 PHN (770) 932-2443 FAX (770) 932-2490 www.nyloplast-us.com
DATE 3-8-06			
REVISED BY EBC	PROJECT NO./NAME	TITLE 24 IN PEDESTRIAN GRATE ASSEMBLY - TYPE B	
DATE 3-13-10			
DWG SIZE A	SCALE 1:10 SHEET 1 OF 1	DWG NO. 7001-110-216	REV C

Section 2721

Engineered Surface Drainage Products

GENERAL
PVC surface drainage inlets shall include the drain basin type as indicated on the contract drawing and referenced within the contract specifications. The ductile iron grates for each of these fittings are to be considered an integral part of the surface drainage inlet and shall be furnished by the same manufacturer. The surface drainage inlets shall be as manufactured by Nyloplast a division of Advanced Drainage Systems, Inc., or prior approved equal.

MATERIALS
The drain basins required for this contract shall be manufactured from PVC pipe stock, utilizing a thermoforming process to reform the pipe stock to the specified configuration. The drainage pipe connection stubs shall be manufactured from PVC pipe stock and formed to provide a watertight connection with the specified pipe system. This joint tightness shall conform to ASTM D3212 for joints for drain and sewer plastic pipe using flexible elastomeric seals. The flexible elastomeric seals shall conform to ASTM F477. The pipe bell spigot shall be joined to the main body of the drain basin or catch basin. The raw material used to manufacture the pipe stock that is used to manufacture the main body and pipe stubs of the surface drainage inlets shall conform to ASTM D1784 cell class 12454.

The grates and frames furnished for all surface drainage inlets shall be ductile iron for structure sizes 8", 10", 12", 15", 18", 24", 30" and 36" and shall be made specifically for each basin so as to provide a round bottom flange that closely matches the diameter of the surface drainage inlet. Grates for drain basins shall be capable of supporting various wheel loads as specified by Nyloplast. 12" and 15" square grates will be hinged to the frame using pins. Ductile iron used in the manufacture of the castings shall conform to ASTM A536 grade 70-50-05. Grates and covers shall be provided painted black.

INSTALLATION
The specified PVC surface drainage inlet shall be installed using conventional flexible pipe backfill materials and procedures. The backfill material shall be crushed stone or other granular material meeting the requirements of class 1, class 2, or class 3 material as defined in ASTM D2321. Bedding and backfill for surface drainage inlets shall be well placed and compacted uniformly in accordance with ASTM D2321. The drain basin body will be cut at the time of the final grade. No brick, stone or concrete block will be required to set the grate to the final grade height. For load rated installations, a concrete slab shall be poured under and around the grate and frame. The concrete slab must be designed taking into consideration local soil conditions, traffic loading, and other applicable design factors. For other installation considerations such as migration of fines, ground water, and soft foundations refer to ASTM D2321 guidelines.

DRAWN BY CJA	MATERIAL	Nyloplast	3130 VERONA AVE BUFORD, GA 30518 PHN (770) 932-2443 FAX (770) 932-2490 www.nyloplast-us.com
DATE 3-10-00			
REVISED BY NMH	PROJECT NO./NAME	TITLE 8 IN - 36 IN DRAIN BASIN SPECIFICATIONS	
DATE 02-21-18			
DWG SIZE A	SCALE 1:1 SHEET 1 OF 1	DWG NO. 7001-110-011	REV J

ADS N-12® ST IB PIPE (ASTM F2648) SPECIFICATION

Scope
This specification describes 4- through 60-inch (100 to 1500 mm) ADS N-12 ST IB pipe (per ASTM F2648) for use in gravity-flow land drainage applications.

Pipe Requirements
ADS N-12 ST IB pipe (per ASTM F2648) shall have a smooth interior and annular exterior corrugations.
- 4- through 60-inch (100 to 1500 mm) pipe shall meet ASTM F2648.
- Manning's "n" value for use in design shall be 0.012.

Joint Performance
Pipe shall be joined using a bell & spigot joint meeting ASTM F2648. The joint shall be soil-tight and gaskets for diameters 12- through 60-inch, shall meet the requirements of ASTM F477. For diameters 4- through 10-inch, the joint shall be soil-tight using an engaging dimple connection. Gaskets shall be installed by the pipe manufacturer and covered with a removable, protective wrap to ensure the gasket is free from debris. A joint lubricant available from the manufacturer shall be used on the gasket and bell during assembly.

Fittings
Fittings shall conform to ASTM F2306. Bell and spigot connections shall utilize a welded bell and valley or saddle gasket meeting the soil-tight joint performance requirements of ASTM F2306.

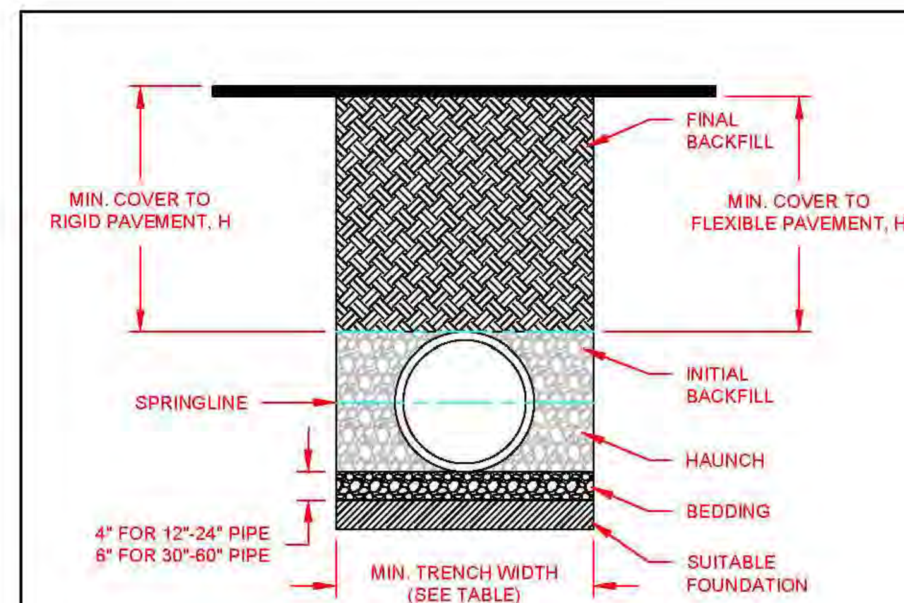
Material Properties
Material for pipe production shall be an engineered compound of virgin and recycled high density polyethylene conforming with the minimum requirements of cell classification 424420C (ESCR Test Condition B) for 4- through 10-inch (100 to 250 mm) diameters, and 435420C (ESCR Test Condition B) for 12- through 60-inch (300 to 1500 mm) diameters, as defined and described in the latest version of ASTM D3350, except that carbon black content should not exceed 4%. The design engineer shall verify compatibility with overall system including structural, hydraulic, material, and installation requirements for a given application.

Installation
Installation shall be in accordance with ASTM D2321 and ADS recommended installation guidelines, with the exception that minimum cover in trafficked areas for 4- through 48-inch (100 to 1200 mm) diameters shall be one foot. (0.3 m) and for 60-inch (1500 mm) diameter the minimum cover shall be 2 ft. (0.6 m) in single run applications. Backfill for minimum cover situations shall consist of Class 1 (compacted) or Class 2 (minimum 90% SPD) material. Maximum fill heights depend on embedment material and compaction level; please refer to Technical Note 2.02. Contact your local ADS representative or visit our website at www.ads-pipe.com for a copy of the latest installation guidelines.

Pipe Dimensions

	Nominal Diameter, in (mm)												
Pipe I.D. in (mm)	4 (100)	6 (150)	8 (200)	10 (250)	12 (300)	15 (375)	18 (450)	24 (600)	30 (750)	36 (900)	42 (1050)	48 (1200)	60 (1500)
Pipe O.D.* in (mm)	4.8 (122)	6.9 (175)	9.1 (231)	11.4 (290)	14.5 (368)	18 (457)	22 (559)	28 (711)	36 (914)	42 (1067)	48 (1219)	54 (1372)	67 (1702)

*Pipe O.D. values are provided for reference purposes only, values stated for 12 through 60-inch are ±1 inch. Contact a sales representative for exact values
**All diameters available with or without perforations.



RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAM.	MIN. TRENCH WIDTH
4" (100mm)	21" (533mm)
6" (150mm)	23" (584mm)
8" (200mm)	26" (660mm)
10" (250mm)	28" (711mm)
12" (300mm)	30" (762mm)
15" (375mm)	34" (864mm)
18" (450mm)	39" (991mm)
24" (600mm)	48" (1219mm)
30" (750mm)	56" (1422mm)
36" (900mm)	64" (1626mm)
42" (1050mm)	72" (1829mm)
48" (1200mm)	80" (2032mm)
60" (1500mm)	96" (2438mm)

MINIMUM RECOMMENDED COVER BASED ON VEHICLE LOADING CONDITIONS**

PIPE DIAM.	SURFACE LIVE LOADING CONDITION	
	H-25	HEAVY CONSTRUCTION (75T AXLE LAOD) *
12" - 48" (300mm - 1200mm)	12" (305mm)	48" (1219mm)
60" (1500mm)	24" (610mm)	60" (1524mm)

* VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER
**SEE BACKFILL REQUIREMENTS IN NOTE 6.

MAXIMUM RECOMMENDED COVER BASED ON VECHICLE LOADING CONDITIONS

PIPE DIAM.	CLASS I		CLASS II		CLASS III
	COMPACTED	DUMPED	95%	90%	95%
4" (100mm)	34 (10.4m)	16 (4.9m)	23 (7.0m)	16 (4.9m)	17 (5.2m)
6" (150mm)	40 (12.2m)	19 (5.8m)	27 (8.2m)	19 (5.8m)	20 (6.1m)
8" (200mm)	30 (9.1m)	14 (4.3m)	21 (6.4m)	14 (4.3m)	15 (4.6m)
10" (250mm)	34 (10.4m)	16 (4.9m)	23 (7.0m)	16 (4.9m)	17 (5.2m)
12" (300mm)	35 (10.7m)	17 (5.2m)	24 (7.3m)	17 (5.2m)	18 (5.5m)
15" (375mm)	37 (11.3m)	18 (5.5m)	25 (7.6m)	18 (5.5m)	19 (5.8m)
18" (450mm)	32 (9.8m)	15 (4.6m)	22 (6.7m)	15 (4.6m)	16 (4.9m)
24" (600mm)	27 (8.2m)	13 (4.0m)	19 (5.8m)	13 (4.0m)	14 (4.3m)
30" (750mm)	22 (6.7m)	11 (3.4m)	16 (4.9m)	11 (3.4m)	11 (3.4m)
36" (900mm)	26 (7.9m)	12 (3.7m)	18 (5.5m)	12 (3.7m)	13 (4.0m)
42" (1050mm)	24 (7.3m)	11 (3.4m)	17 (5.2m)	11 (3.4m)	12 (3.7m)
48" (1200mm)	23 (7.0m)	11 (3.4m)	16 (4.9m)	11 (3.4m)	12 (3.7m)
60" (1500mm)	26 (7.9m)	12 (3.7m)	18 (5.5m)	12 (3.7m)	13 (4.0m)

FILL HEIGHT TABLE GENERATED USING AASHTO SECTION 12, LOAD RESISTANCE FACTOR DESIGN (LRFD) PROCEDURE WITH THE FOLLOWING ASSUMPTIONS:
NO HYDROSTATIC PRESSURE,
UNIT WEIGHT OF SOIL (Ys) = 120 PCF

NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION

2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.

3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.

4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-1500mm).

5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDINGTO THE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.

6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOTATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT. FOR TRAFFIC APPLICATIONS WITH LESS THAN FOUR FEET OF COVER, EMBEDMENT OF THE PIPE SHALL BE USING ONLY A CLASS I OR CLASS II BACKFILL.

REV	DESCRIPTION	BY	MM/DD/YY	CHK'D
5	INITIAL BACKFILL	JAB	04/02/20	

TRENCH INSTALLATION DETAIL (ASTM F2648)
DRAWING NUMBER: STD-101A
ADVANCED DRAINAGE SYSTEMS, INC. 4640 TRUEMAN BLVD HILLIARD, OHIO 43026
DRAWN BY: JLE DATE: 8/15/13 CHECKED BY: SCALE: NTS SHEET: 1 OF 1

PDG
PLANNING DESIGN GROUP
LANDSCAPE ARCHITECTURE ●
RECREATIONAL DESIGN ● LAND PLANNING
5314 S. YALE AVE., SUITE 710, TULSA, OK 74135
918.628.1255 918.628.1256 FAX
WWW.PLANNINGDESIGNGROUP.COM

Johnson & Associates, Inc.
1 E. Sheridan Ave., Suite 200
Oklahoma City, OK 73104
(405) 235-8075 FAX (405) 235-8078 www.jaokc.com
Certificate of Authorization #1484 Exp. Date: 06-30-2021
ENGINEERS • SURVEYORS • PLANNERS

PROJECT INFORMATION

PROJECT ADDRESS:

1001 E. ROBINSON ST.,
NORMAN, OKLAHOMA 73071

PROJECT NO.	NA
DATE	09-14-20
DRAWN BY	CHECKED BY

GRIFFIN SOCCER COMPLEX NORTHWEST FIELD RENOVATIONS NORMAN, OKLAHOMA

ISSUE/ REVISIONS

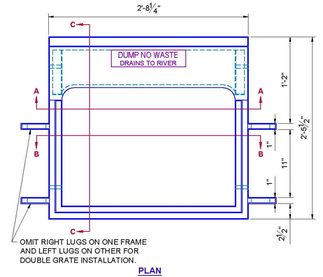
7/8/20	95% REVIEW SET

OWNER:
THE CITY OF NORMAN PARKS & RECREATION
201-C WEST GRAY
NORMAN, OK 73069
(405) 366-5472

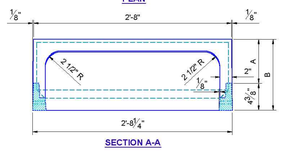
ST4

STORM SEWER DETAILS

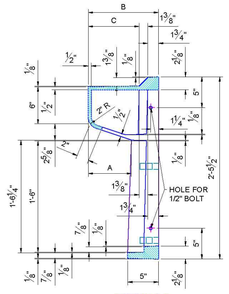
ACAD FILE: H:\3870\NW Fields Renovation\3870-NW FIELDS-STORM.dwg, 8/11/2020 9:38 AM, Chris Gettings
XREFS LOADED:



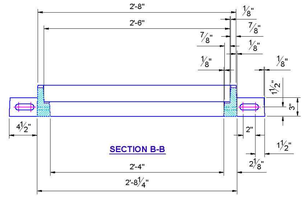
PLAN



SECTION A-A

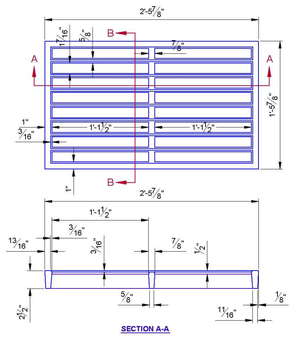


SECTION C-C

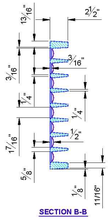


SECTION B-B

#1 CAST IRON STORM SEWER INLET FRAME WITH CURB INLET HOOD



SECTION A-A



SECTION B-B

STEEL CASTING SHALL CONFORM TO THE REQUIREMENTS FOR GRADE B - 2, FULL ANNEALED, OF THE A.S.T.M. SPECIFICATIONS, SERIAL DESIGNATION A27.

STORM SEWER INLET CAST IN STEEL GRATING TYPE - B

BRICK OPTION IN PLACE OF CONCRETE HOLD INSIDE DIMENSION GIVEN FOR CONCRETE 6" P.C. CONCRETE FLOOR & 8" BRICK WALLS					
MIN. QUANTITIES REQ'D.	2 - 0	2 - 1	2 - 2	2 - 3	2 - 4
BRICK (1/2" JOINTS)	445	725	995	1250	1495
1 : 2 MORTAR C.Y.	0.32	0.53	0.72	0.95	1.09
3500 CONCRETE C.Y.	0.4	0.60	0.80	1.00	1.20

CAST IRON INLET NUMBER			
#	#1 INLET	TYPE B GRATE	#2 INLET
2 - 0	2	2	
2 - 1	2	2	2
2 - 2	2	2	4
2 - 3	2	2	6
2 - 4	2	2	8

GENERAL NOTES:

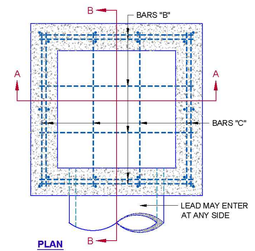
CASTING SHALL CONFORM TO THE A.S.T.M. SPECIFICATIONS FOR GRAY-IRON CASTINGS, SERIAL DESIGNATION A-48-29.

NO WORDING OR MARKING OF ANY KIND OTHER THAN THOSE SHOWN ON THE PLANS WILL BE PERMITTED ON THESE CASTINGS.

ALL BOLT REQUIREMENTS FOR THESE STRUCTURES WALL BE MACHINE BOLTS.

QUANTITIES FOR CURB INLETS		
	CLASS A CONC.	STEEL
ONE CURB INLET	0.20	26
TWO CURB INLET	0.43	44
THREE CURB INLET	0.69	62
FOUR CURB INLET	0.95	80

CURB INLETS SHALL BE PLACED ON UPSTREAM SIDE OF GRATE INLETS UNLESS OTHERWISE SPECIFIED. CONCRETE TROUGH FOR CURB INLETS AND CONCRETE STORM SEWER INLETS SHALL BE CONSTRUCTED AS ONE UNIT.



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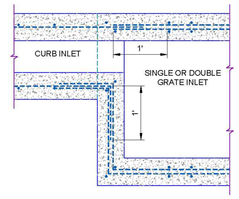
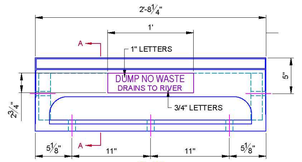


DETAIL SHOWING COMBINATION OF CURB AND INLETS



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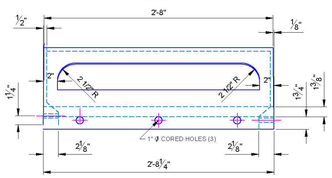
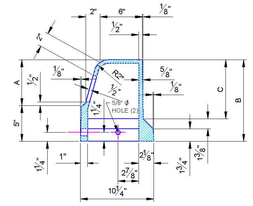
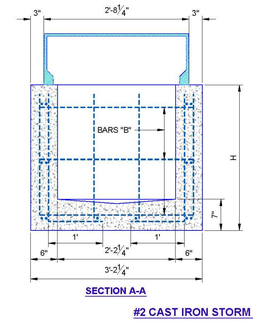


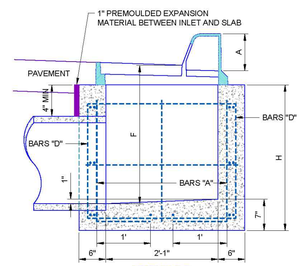
ELEVATION



SECTION A-A

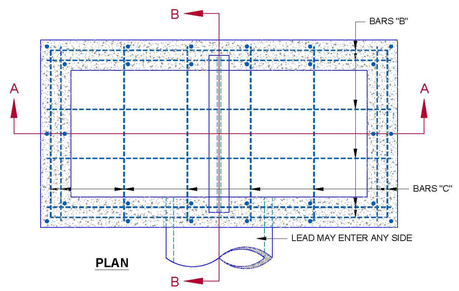


SECTION A-A



SECTION B-B

#2 CAST IRON STORM SEWER CURB INLET HOOD



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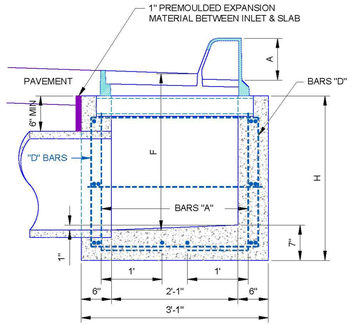
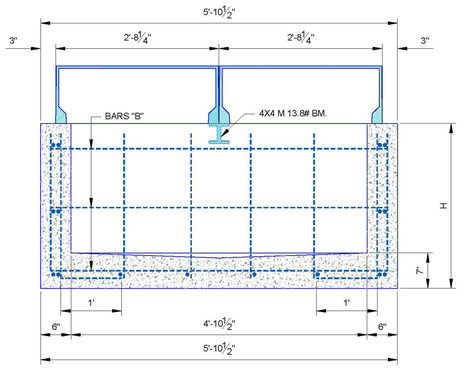


SECTION B-B

#2 CAST IRON STORM SEWER INLET FRAME WITH CURB INLET



SECTION A-A

VARIABLE DIMENSION FOR ALL CURB CASTINGS			
	A	B	C
6" CURB FACE	7"	11 3/8"	8 1/4"
8" CURB FACE	9"	13 3/8"	10 1/4"

BAR LIST & QUANTITIES FOR DOUBLE GRATE & CURB INLET					
SIZE OF LEAD	H MINIMUM	F MINIMUM	CLASS A CONC. C.Y.	REINF. STL. LBS.	
18"	2' - 8 1/2"	2.57 FT.	1.02	137	
24"	3' - 3"	3.11 FT.	1.18	147	
30"	3' - 9 1/2"	3.66 FT.	1.34	180	

LEAD	PER ADDITIONAL FOOT OF DEPTH		BARS A (MIN.)	
	CONC. C.Y.	CONC. C.Y.	SIZE	#
18"	0.295	*19.0	1/2" ϕ x (H+8")	14
18"			1/2" ϕ x (H+8")	14
18"			1/2" ϕ x (H+8")	14

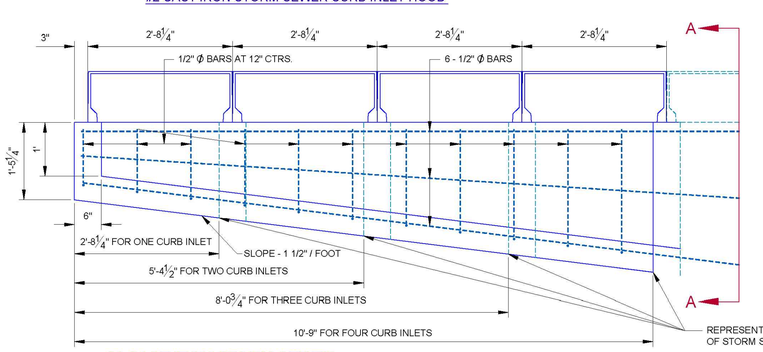
LEAD	BARS B		BARS C		BARS D (MIN.)	
	SIZE	#	SIZE	#	SIZE	#
18"	1/2" ϕ x 5' - 6"	14	1/2" ϕ x 2' - 9"	16	1/2" ϕ x (H+4")	14
18"	1/2" ϕ x 5' - 6"	14	1/2" ϕ x 2' - 9"	16	1/2" ϕ x (H+4")	14
18"	1/2" ϕ x 5' - 6"	18	1/2" ϕ x 2' - 9"	20	1/2" ϕ x (H+4")	14

* HORIZONTAL BARS ARE APPROXIMATELY 12" CENTERS. WHEN ADDITIONAL BARS ARE REQUIRED DUE TO INCREASE OF DEPTH OF INLET 22.5 LBS OF REINFORCING STEEL IS TO BE ADDED FOR EACH SET OF BARS.

NOTE:
ALL COST OF 4 X 4 M 13.8 #BM SUPPORTS FOR GRATE FRAME TO BE INCLUDED IN THE PRICE OF BID FOR INLET FRAMES AND GRATES.

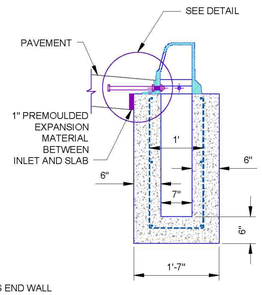
QUANTITIES OF ANGLE IRON FOR CURB INLETS		
INLET #	# PIECES	LENGTH OF 3" x 3" ∠
2 - 0		
2 - 1	1	5' - 1 5/8"
2 - 2	1	10' - 6 1/8"
2 - 3	1	15' - 10 5/8"
2 - 4	2	10' - 6 1/8"

#2 CAST IRON STORM SEWER CURB INLET HOOD

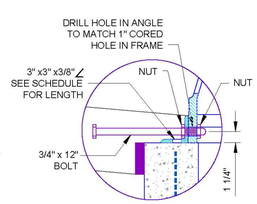


#4 CAST IRON STORM SEWER INLET FRAME WITH CURB INLET

ELEVATION



SECTION A-A



DETAIL OF CONNECTING ANGLE IRON & CAST IRON CURB

NOTE: ANGLE IRON TO BE BOLTED TO CURB WITH 3 (3/4" x 12") MACHINE BOLTS IN EACH CURB SECTION.

BAR LIST AND QUANTITIES FOR SINGLE GRATE AND CURB INLETS													
SIZE OF LEAD	H (MIN.)	F (MIN.)	CLASS A CONC. C.Y.	REINF. STL. LBS.	PER ADDITIONAL FOOT OF DEPTH		BARS A (MIN.)		BARS B		BARS C		BARS D (MIN.)	
					CONC. C.Y.	VERT. STL.-- LBS.	SIZE	#	SIZE	#	SIZE	#	SIZE	#
15"	2' - 3 1/4"	2.14 FT.	0.54	86	0.20	*13.6	1/2" ϕ x (H+8")	10	1/2" ϕ x 2' - 10"	14	1/2" ϕ x 2' - 9"	14	1/2" ϕ x (H+4")	10
18"	2' - 6 1/2"	2.14 FT.	0.59	90			1/2" ϕ x (H+8")	10	1/2" ϕ x 2' - 10"	14	1/2" ϕ x 2' - 9"	14	1/2" ϕ x (H+4")	10
24"	3' - 1"	2.95 FT.	0.70	97			1/2" ϕ x (H+8")	10	1/2" ϕ x 2' - 10"	14	1/2" ϕ x 2' - 9"	14	1/2" ϕ x (H+4")	10

* HORIZONTAL BARS ARE APPROXAMENTALY 12" CENTERS WHEN ADDITIONAL BARS ARE REQUIRED DUE TO INCREASE OF DEPTH OF INLET. 15.2 LBS. OF REINFORCING STEEL IS TO BE ADDED FOR EACH ADDITIONAL SET OF BARS.

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5314 S. YALE AVE., SUITE 710, TULSA, OK 74135
918.628.1255 918.628.1256 FAX
WWW.PLANNINGDESIGNGROUP.COM

J&A
Johnson & Associates, Inc.
1 E. Sheridan Ave., Suite 200
Oklahoma City, OK 73104
(405) 235-8075 FAX (405) 235-8078 www.jaokc.com
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ENGINEERS • SURVEYORS • PLANNERS

REGISTERED PROFESSIONAL ENGINEER
TIMOTHY JOHNSON
12277
RENEWAL DATE: 04/30/2022

PROJECT INFORMATION

PROJECT ADDRESS:

1001 E. ROBINSON ST.,
NORMAN, OKLAHOMA 73071

PROJECT NO.	NA
DATE	09-14-20
DRAWN BY	CHECKED BY

GRIFFIN SOCCER COMPLEX
NORTHWEST FIELD
RENOVATIONS
NORMAN, OKLAHOMA

ISSUE/ REVISIONS	
7/8/20	95% REVIEW SET

OWNER:

THE CITY OF NORMAN PARKS & RECREATION
201-C WEST GRAY
NORMAN, OK 73069
(405) 366-5472

ST5

STORM SEWER DETAILS

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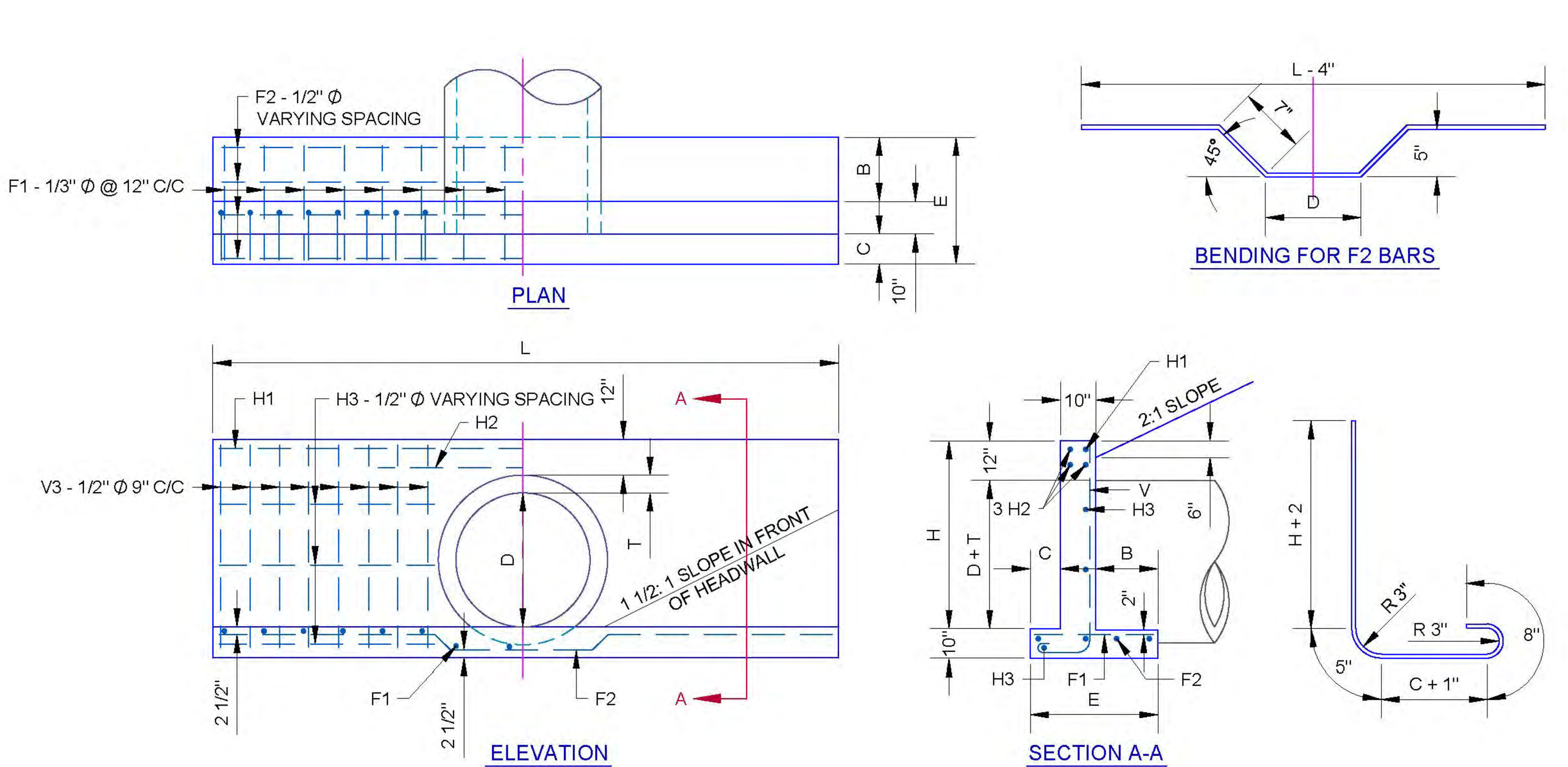
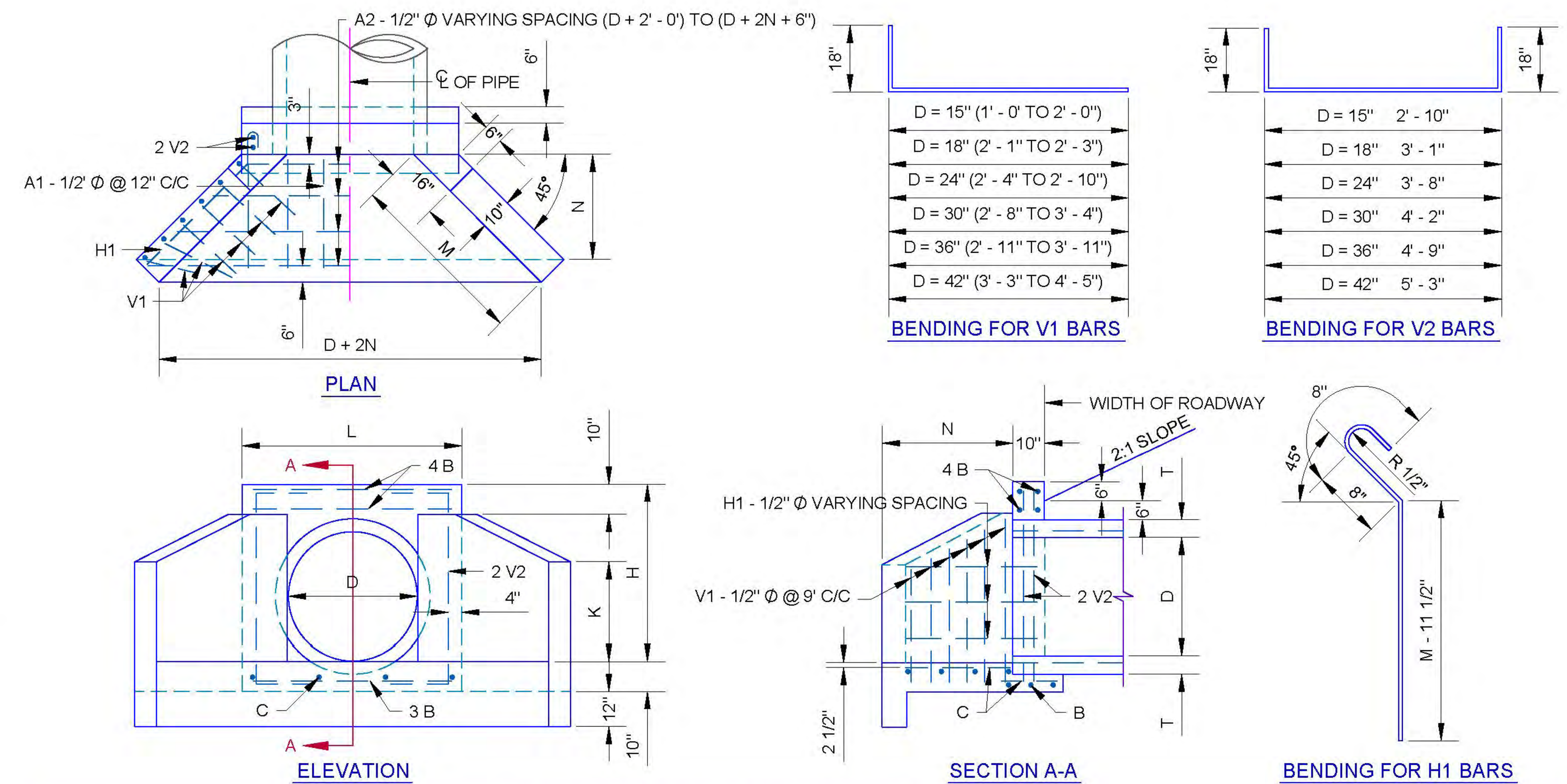
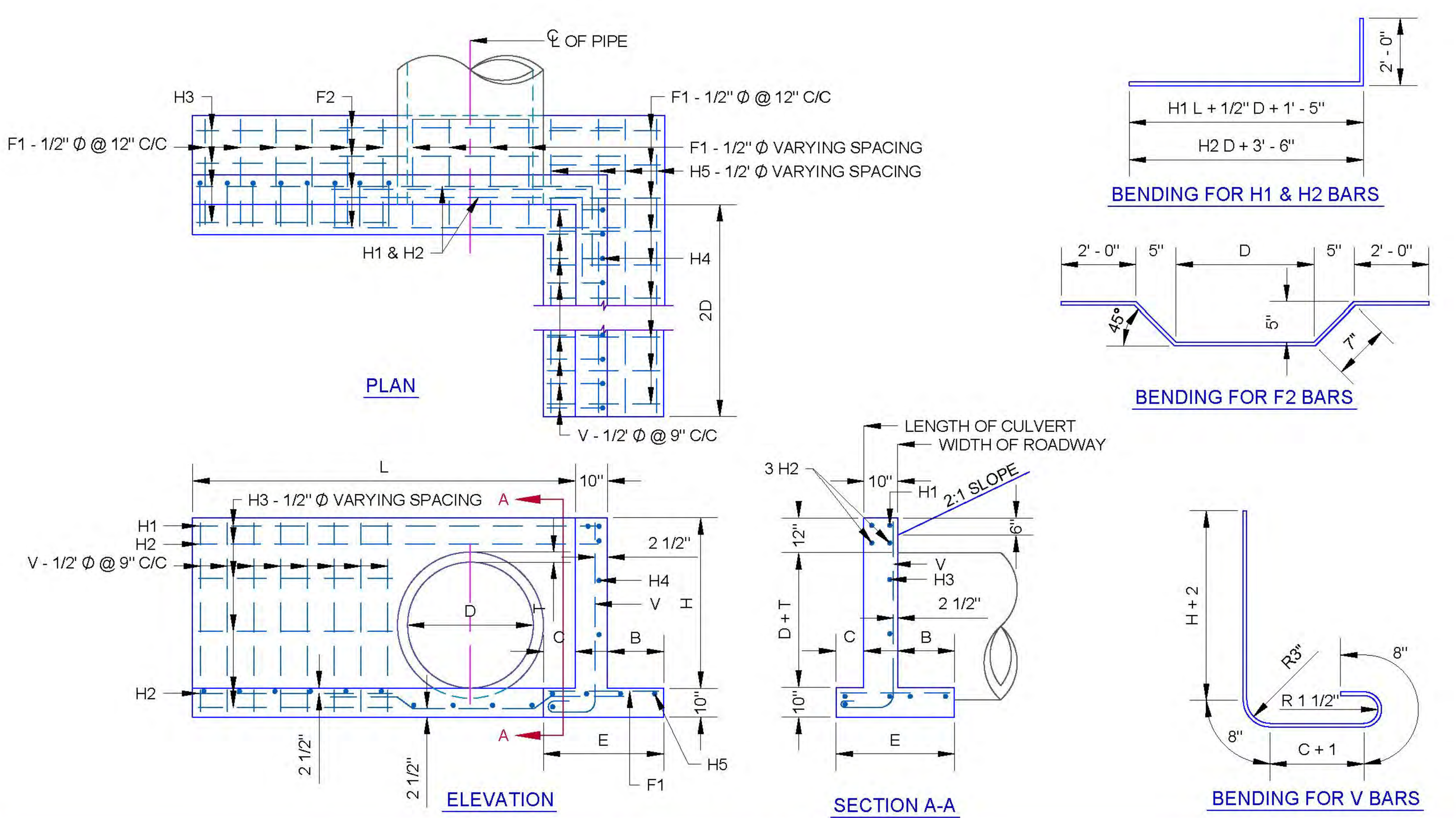
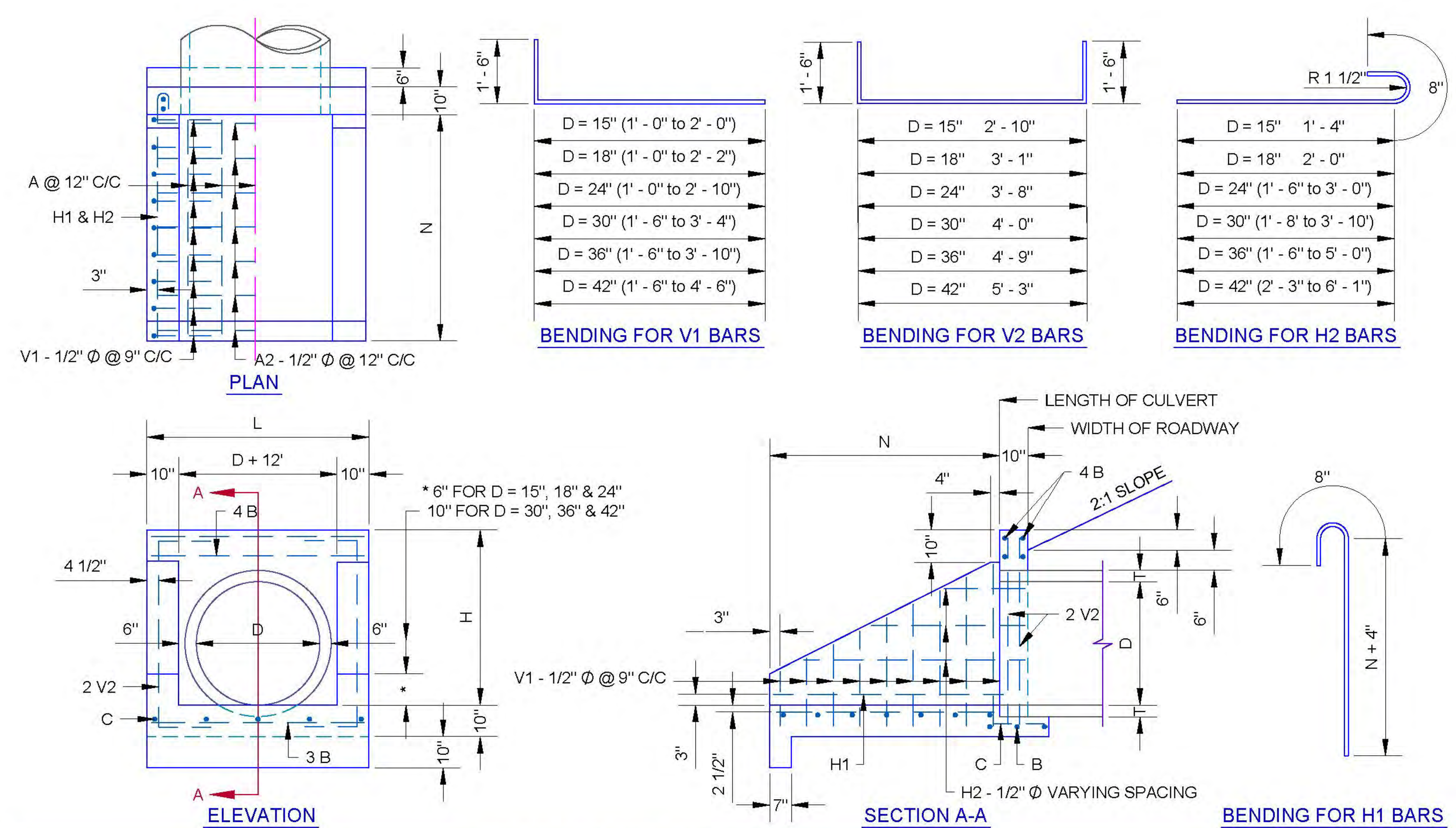




DIMENSIONS & QUANTITIES FOR STRAIGHT HEADWALLS																					* FOR ONE HEADWALL
DIMENSIONS								REINFORCING STEEL												QUANTITIES *	
D	AREA SQ FT	T	H	L	E	B	C	F1 - 1/2" Ø #	F1 LENGTH	F2 - 1/2" Ø #	F2 LENGTH	H1 - 1/2" Ø #	H1 LENGTH	H2 - 1/2" Ø #	H2 LENGTH	H3 - 1/2" Ø #	H3 LENGTH	V - 1/2" Ø #	V LENGTH	CLASS "A" CONC C.Y.	REINF. STEEL LBS
15"	1.23	2 1/2"	2' - 5 1/2"	6' - 0"	2' - 2"	10"	6"	6	1' - 10"	3	6' - 0"	1	5' - 8"	3	5' - 3"	4	2' - 0"	6	4' - 3"	.78	56
18"	1.77	2 1/2"	2' - 8 1/2"	7' - 0"	2' - 3"	11"	6"	8	1' - 11"	3	7' - 0"	1	6' - 8"	3	5' - 6"	4	2' - 4"	8	4' - 6"	.98	70
24"	3.14	3"	3' - 3"	9' - 0"	2' - 7"	1' - 3"	6"	10	2' - 3"	3	9' - 0"	1	8' - 8"	3	6' - 0"	4	3' - 1"	10	5' - 1"	1.46	95
30"	4.91	3 1/2"	3' - 9 1/2"	11' - 0"	2' - 10"	1' - 4"	8"	12	2' - 6"	3	11' - 0"	1	10' - 8"	3	6' - 6"	6	3' - 9"	12	5' - 9"	2.00	122
36"	7.07	4"	4' - 4"	14' - 0"	3' - 1"	1' - 7"	8"	14	2' - 9"	4	14' - 0"	1	13' - 8"	3	7' - 0"	6	5' - 0"	14	6' - 4"	2.85	170
42"	9.62	4 1/2"	4' - 10 1/2"	16' - 0"	3' - 4"	1' - 8"	10"	16	3' - 0"	4	16' - 0"	1	15' - 8"	3	7' - 6"	6	5' - 8"	16	7' - 0"	3.58	198

DIMENSIONS & QUANTITIES FOR HEADWALLS WITH 45° WINGS																							* FOR ONE HEADWALL
DIMENSIONS								REINFORCING STEEL														QUANTITIES *	
D	AREA SQ FT	T	H	K	L	M	N	A1 - 1/2" Ø #	A1 LENGTH	A - 1/2" Ø #	A LENGTH	B - 1/2" Ø #	B LENGTH	C - 1/2" Ø #	C LENGTH	H1 - 1/2" Ø #	H1 LENGTH	V1 - 1/2" Ø #	V1 LENGTH	V - 1/2" Ø #	V LENGTH	CLASS "A" CONC C.Y.	REINF. STEEL LBS
15"	1.23	2 1/4"	2' - 5 1/4"	1' - 5"	3' - 7"	1' - 9"	1' - 3"	4	1' - 0"	2	3' - 9" AV.	7	3' - 3"	3	1' - 6"	4	2' - 1"	4	3' - 5" AV.	4	5' - 10"	.74	57
18"	1.77	2 1/2"	2' - 8 1/2"	1' - 7"	3' - 10"	2' - 1 1/2"	1' - 6"	4	1' - 2"	2	4' - 3" AV.	7	3' - 6"	3	1' - 6"	4	2' - 6"	4	3' - 8" AV.	4	6' - 1"	.91	61
24"	3.14	3"	3' - 3"	1' - 10 1/2"	4' - 4"	2' - 10"	2' - 0"	5	1' - 8"	3	5' - 3" AV.	7	4' - 0"	3	1' - 6"	6	3' - 2"	6	4' - 1" AV.	4	6' - 8"	1.37	85
30"	4.91	3 1/2"	3' - 9 1/2"	2' - 2"	4' - 10"	3' - 6 1/2"	2' - 6"	5	2' - 2"	3	6' - 3" AV.	7	4' - 6"	4	1' - 6"	6	3' - 11"	8	4' - 6" AV.	4	7' - 2"	1.77	104
36"	7.07	4"	4' - 4"	2' - 5 1/2"	5' - 4"	4' - 3"	3' - 0"	6	2' - 8"	4	7' - 3" AV.	7	5' - 0"	4	1' - 6"	6	4' - 7"	10	4' - 11" AV.	4	7' - 9"	2.29	130
42"	9.62	4 1/2"	4' - 10 1/2"	2' - 9"	5' - 10"	4' - 1 1/2"	3' - 6"	6	3' - 2"	4	8' - 3" AV.	7	5' - 6"	4	1' - 6"	6	5' - 4"	12	5' - 4" AV.	4	8' - 3"	2.89	151





DIMENSIONS & QUANTITIES FOR HEADWALLS WITH 90° WINGS																									* FOR ONE HEADWALL
DIMENSIONS								REINFORCED STEEL																QUANTITIES *	
D	AREA SQ FT	T	H	L	E	B	C	F1 - 1/2" Ø #	F1 LENGTH	F2 - 1/2" Ø #	F2 LENGTH	H1 - 1/2" Ø #	H1 LENGTH	H2 - 1/2" Ø #	H2 LENGTH	H3 - 1/2" Ø #	H3 LENGTH	H4 - 1/2" Ø #	H4 LENGTH	H5 - 1/2" Ø #	H5 LENGTH	V - 1/2" Ø #	V LENGTH	CLASS "A" CONC C.Y.	REINF. STEEL LBS
15"	1.23	2 1/4"	2' - 5 1/4"	3' - 0"	2' - 2"	10"	6"	10	1' - 10"	3	6' - 5"	1	7' - 0"	3	6' - 9"	5	2' - 0"	2	3' - 0"	4	3' - 10"	7	2' - 0"	1.09	84
18"	1.77	2 1/2"	2' - 8 1/2"	3' - 6"	2' - 3"	11"	6"	10	1' - 11"	3	6' - 8"	1	7' - 8"	3	7' - 0"	5	2' - 4"	2	3' - 6"	4	4' - 5"	9	2' - 4"	1.32	97
24"	3.14	3"	3' - 3"	4' - 6"	2' - 7"	1' - 3"	6"	14	2' - 3"	3	7' - 2"	1	8' - 11"	3	7' - 6"	6	3' - 1"	3	4' - 6"	4	5' - 9"	11	3' - 1"	1.94	131
30"	4.91	3 1/2"	3' - 9 1/4"	5' - 6"	2' - 10"	1' - 4"	8"	16	2' - 6"	3	7' - 8"	1	10' - 2"	3	8' - 0"	6	3' - 9"	3	5' - 6"	4	6' - 10"	14	3' - 9"	2.59	163
36"	7.07	4"	4' - 4"	7' - 0"	3' - 1"	1' - 7"	8"	16	2' - 9"	4	8' - 2"	1	11' - 11"	3	8' - 6"	7	5' - 0"	4	6' - 6"	4	8' - 1"	17	5' - 0"	3.47	216
42"	9.62	4 1/2"	4' - 10 1/2"	8' - 0"	3' - 4"	1' - 8"	10"	19	3' - 0"	4	8' - 8"	1	13' - 2"	3	9' - 0"	7	5' - 8"	4	7' - 6"	4	9' - 2"	19	5' - 8"	4.32	252

DIMENSIONS & QUANTITIES FOR HEADWALLS WITH U-TYPE WINGS																						* FOR ONE HEADWALL
DIMENSIONS						REINFORCED STEEL																QUANTITIES *	
D	AREA SQ FT	T	H	L	N	A1 - 1/2" Ø #	A1 LENGTH	A2 - 1/2" Ø #	A2 LENGTH	B - 1/2" Ø #	B LENGTH	C - 1/2" Ø #	C LENGTH	H1 - 1/2" Ø #	H1 LENGTH	H2 - 1/2" Ø #	H2 LENGTH	V1 - 1/2" Ø #	V1 LENGTH	V2 - 1/2" Ø #	V2 LENGTH	CLASS "A" CONC C.Y.	REINF. STEEL LBS
15"	1.23	2 1/4"	2' - 5 1/4"	3' - 11"	6' - 6"	3	2' - 2"	3	3' - 7"	7	3' - 7"	3	1' - 6"	2	3' - 6"	2	2' - 0"	8	3' - 0" AV.	4	5' - 10"	.95	71
18"	1.77	2 1/4"	2' - 8 1/4"	3' - 1"	3' - 1"	3	2' - 9"	4	3' - 10"	7	3' - 10"	3	1' - 6"	2	4' - 1"	2	2' - 8"	8	3' - 1" AV.	4	6' - 1"	1.15	79
24"	3.14	3"	3' - 3"	4' - 2"	4' - 2"	4	3' - 10"	5	4' - 4"	7	4' - 4"	4	1' - 6"	2	5' - 2"	4	2' - 11" AV.	12	3' - 5" AV.	4	6' - 8"	1.60	109
30"	4.91	3 1/4"	3' - 9 1/4"	4' - 3"	4' - 3"	4	2' - 6"	5	4' - 10"	7	4' - 10"	4	1' - 6"	2	5' - 3"	4	3' - 5" AV.	12	3' - 11" AV.	4	7' - 2"	1.91	120
36"	7.07	4"	4' - 4"	5' - 4"	5' - 4"	5	2' - 9"	6	5' - 4"	7	5' - 4"	5	1' - 6"	2	6' - 4"	6	3' - 11" AV.	14	4' - 2" AV.	4	7' - 9"	2.48	152
42"	9.62	4 1/4"	4' - 10 1/4"	6' - 5"	6' - 5"	5	3' - 0"	7	5' - 10"	7	5' - 10"	5	1' - 6"	2	7' - 5"	6	4' - 10" AV.	18	4' - 6" AV.	4	8' - 3"	3.12	186

GENERAL NOTES:

ALL EXPOSED CONCRETE SURFACES SHALL HAVE A CARBORUNDUM FINISH.

ALL EXPOSED CONCRETE EDGES SHALL HAVE A 3/4" CHAMFER.

ALL REINFORCED STEEL SHALL CONFORM TO ASTM SPEC. A-305-49.

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REGISTERED PROFESSIONAL ENGINEER
TIMOTHY JOHNSON
12277
OKLAHOMA
RENEWAL DATE: 04/30/2022

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1001 E. ROBINSON ST., NORMAN, OKLAHOMA 73071

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GRIFFIN SOCCER COMPLEX
NORTHWEST FIELD RENOVATIONS
NORMAN, OKLAHOMA

ISSUE/ REVISIONS

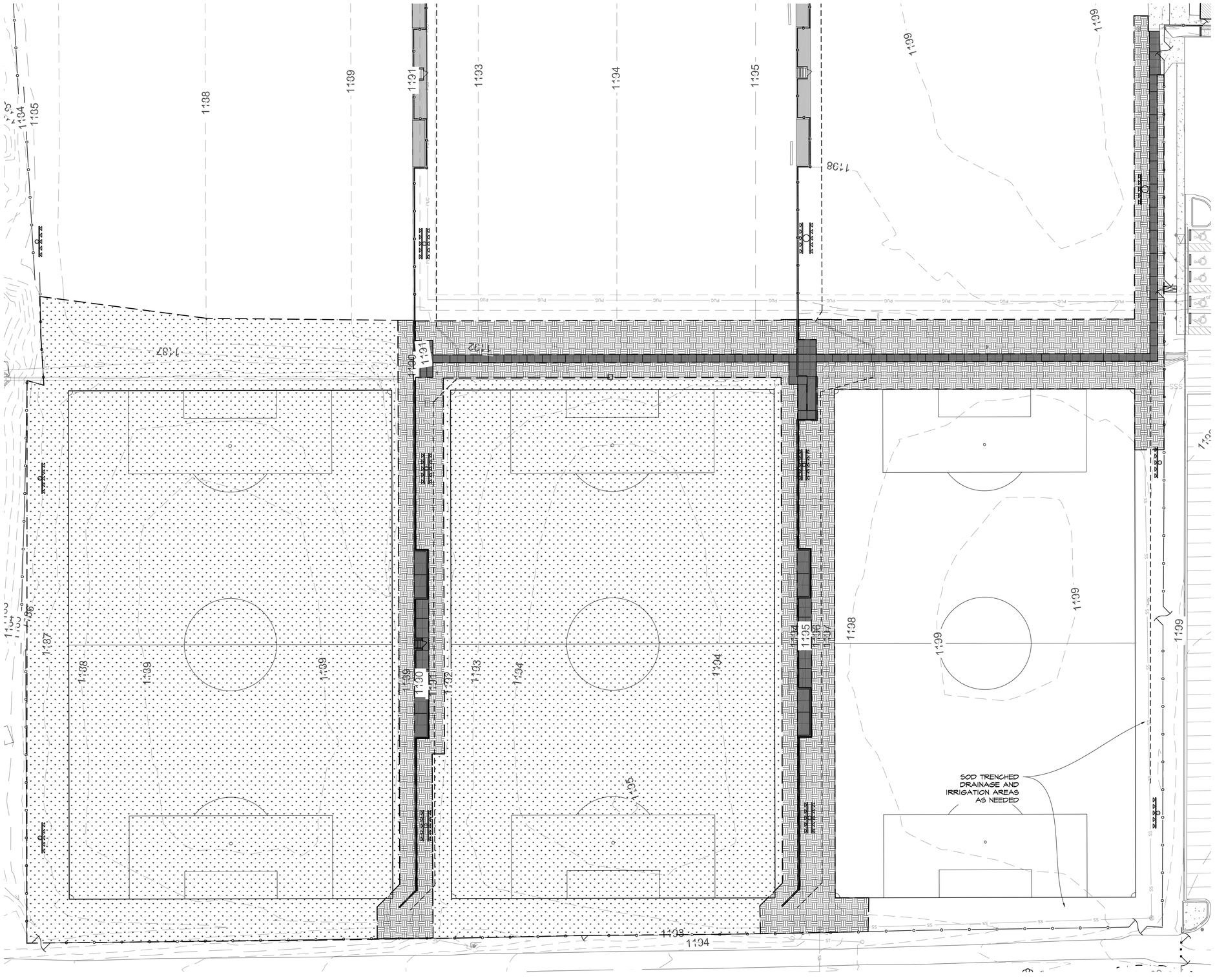
7/8/20	95% REVIEW SET

OWNER:

THE CITY OF NORMAN PARKS & RECREATION
201-C WEST GRAY
NORMAN, OK 73069
(405) 366-5472

ST6

STORM SEWER DETAILS



1 SEATING AREA - PLAN VIEW
SCALE: 1" = 30'-0"

30 0 15 30 60

NORTH

GRASSING LEGEND

U3 BERMUDA SOD
45,000 SQ. FEET TOTAL

U3 BERMUDA SPRIGG
196,020 SQ. FEET TOTAL
(4.5 ACRES TOTAL)

SODDING SUMMARY NOTES

1. REFER TO PROJECT MANUAL FOR FURTHER SPECIFICATIONS.
2. ALL NETTING TO BE REMOVED FROM SOD DURING INSTALLATION.
3. FINE GRADE LAWN AREAS TO SMOOTH, EVEN SURFACE WITH A LOOSE, UNIFORMLY FINE TEXTURE. FLOAT SMOOTH TO REMOVE RIDGES AND FILL DEPRESSIONS AS REQUIRED TO REMOVE RIDGES AND FILL DEPRESSIONS AS REQUIRED TO DRAIN.
4. APPLY APPROVED FERTILIZER ON FINISH GRADE PRIOR TO SOD INSTALLATION AT A RATE OF ONE (1) POUND OF ACTUAL NITROGEN PER 1000 SQUARE FEET.
5. ON 3:1 SLOPES OR GREATER SOD SHALL BE INSTALLED PERPENDICULAR TO SLOPE AND SECURED WITH APPROVED WOOD STAKES AS NEEDED TO PREVENT SOD FROM SLOUGHING OFF SLOPES.
6. THE SITE IS TO BE KEPT CLEAN AND ORDERLY. ALL TRASH, INCLUDING DEBRIS FROM REMOVING WEEDS OR ROCKS FROM SODDED AREAS, SHALL BE REMOVED FROM THE SITE AS WORK PROGRESSES. ALL PAVED AREAS SHALL BE KEPT CLEAN BY HOSING AND/OR SWEEPING.
7. CONTRACTOR IS RESPONSIBLE FOR SOLID SODDING ALL AREAS DISTURBED DURING CONSTRUCTION OPERATIONS.
8. LAY BERMUDA SOD TO FORM A SOLID MASS TIGHTLY-FITTED JOINTS. DO NOT OVERLAY EDGES. STAGGER STRIPS TO OFFSET JOINTS IN ADJACENT COURSES.
9. WATER SOD LIGHTLY AND THEN ROLL WITH A WATER FILLED LAWN ROLLER TO ENSURE CONTACT WITH SUBGRADE AND TO INSURE A SMOOTH SURFACE FREE OF CLUMPS AND DEPRESSIONS.
10. ALL AREAS NOT SHOWN ON PLAN THAT ARE DISTURBED DURING CONSTRUCTION ARE TO BE SOLID SODDED WITH U3 SOD. CONSULT LANDSCAPE ARCHITECT FOR APPROVAL BEFORE SODDING ANY ADDITIONAL AREAS NOT INDICATED ON THIS PLAN.

SPRIGGING SUMMARY NOTES

1. REFER TO PROJECT MANUAL FOR FURTHER SPECIFICATIONS.
2. ALL CLEAN-UP AND FINISH GRADING SHALL BE COMPLETED BY THE CONTRACTOR AND APPROVED BY LANDSCAPE ARCHITECT.
3. WHERE PRACTICAL OR NECESSARY, MECHANICAL SPRIGGING SHALL BE PERPENDICULAR TO THE SLOPES IN ORDER TO MINIMIZE EROSION IN THESE AREAS. MOUNDS, SOIL AROUND TREE TRUNKS, SLOPES, OR ANY OTHER AREAS THAT DO NOT LEND THEMSELVES TO MECHANICAL SPRIGGING SHALL BE HAND PLANTED. STOLONS SHALL BE BROADCAST EVENLY OVER THESE AREAS AND CHOPPED IN LIGHTLY BY SHOVEL, HOE OR OTHER HAND TOOL WHICH LEAVES THE GRADE UNCHANGED.
4. CARE SHALL BE TAKEN NOT TO DISTURB THE NATURAL GRASSES IN THE AREAS ADJACENT TO THE WORK ZONE WHICH HAD NOT BEEN DISTURBED BY THE GRADING OPERATION.
5. THE LANDSCAPE ARCHITECT WILL BE THE FINAL JUDGE AS TO THE CONDITION OF ALL PLANTED AREAS AFTER SPRIGGING.
6. SPRIGS SHALL BE FREE FROM PESTS AND DISEASE, DELIVERED IN A TIMELY FASHION AND CONSIST OF STEM, LEAVES AND STOLONS. THE SPRIGS SHALL COME FROM A NURSERY APPROVED BY THE LANDSCAPE ARCHITECT. CONTRACTOR SHALL PROVIDE AND PLANT THE GRASS SPRIGS BY SHREDDING THE GRASS AT THE TIME OF HARVEST AND BY DELIVERING IT TO THE SITE WITHIN 24 HOURS AFTER HARVESTING AND HAVING IT PLANTED IN THE GROUND WITHIN 48 HOURS AFTER IT HAS BEEN HARVESTED. THE GRASS SHALL BE PLANTED BY BROADCASTING AND THE SPRIGS SHALL BE PLACED INTO THE GROUND WITH A STRAIGHT-DISC TYPE PLANTER CUSTOMARILY USED IN SPRIGGING APPLICATIONS. ALL AREAS SHALL BE ROLLED CUSTOMARILY USED IN ROLLER AFTER PLANTING. STOLONS SHOULD NOT HAVE A LENGTH LONGER THAN 1 ½ INCHES PER STOLON. U3 BERMUDAGRASS SHALL BE SPRIGGED AT A RATE OF NO LESS THAN 400 BUSHELS PER ACRE.
7. CONTRACTOR TO PROVIDE SPRIG GROW-IN. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

SOIL AMENDMENT NOTES

1. CONTRACTOR IS TO SPREAD ½" OF DARK FOREST COMPOST AND 1" OF MASONRY OR TOP-DRESSING SAND OVER ALL AREAS AS LISTED IN APPLICATION INFORMATION BELOW.
2. CONTRACTOR IS TO TILL DARK FOREST COMPOST AND SAND INTO TOP 4"-6" OF SOIL.
3. CONTRACTOR IS TO SUBMIT ALL INFORMATION ON DARK FOREST COMPOST AND SAND AS PART OF A SUBMITTAL PACKAGE. THIS IS TO INCLUDE ALL MANUFACTURERS PRODUCT INFORMATION AND SOURCE OF MATERIAL.

PRODUCT INFORMATION

SOIL AMENDMENT
DARK FOREST COMPOST OR APPROVED EQUAL

MINICK MATERIALS
6665 NORTH INTERSTATE DR.
NORMAN, OK
TIM SHANAHAN
PH: 405-854-6280
WWW.MINICKMATERIALS.COM

PRODUCT APPLICATION

DARK FOREST COMPOST
-372 CUBIC YARDS

MASONRY SAND OR TOP DRESSING SAND
-1004 TONS

APPLY TO FIELD AREA AND SURROUNDS ONLY - 345' X 700'
APPROXIMATE AREA

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PLANNING DESIGN GROUP
LANDSCAPE ARCHITECTURE ●
RECREATIONAL DESIGN ● LAND PLANNING
5314 S. YALE AVE., SUITE 710, TULSA, OK 74135
918.628.1255 918.628.1256 FAX
WWW.PLANNINGDESIGNGROUP.COM

JAMES C. CROSBY 121 REGISTERED LANDSCAPE ARCHITECT OKLAHOMA 9-8-20

JAMES C. CROSBY, ASLA
LANDSCAPE ARCHITECT OF RECORD

PROJECT INFORMATION

PROJECT ADDRESS:
1001 E. ROBINSON ST.,
NORMAN, OKLAHOMA 73071

PROJECT NO.	NA
DATE	9/8/20
DRAWN BY	CHECKED BY
AB	GE

GRIFFIN SOCCER COMPLEX
NORTHWEST FIELD
RENOVATIONS
NORMAN, OKLAHOMA

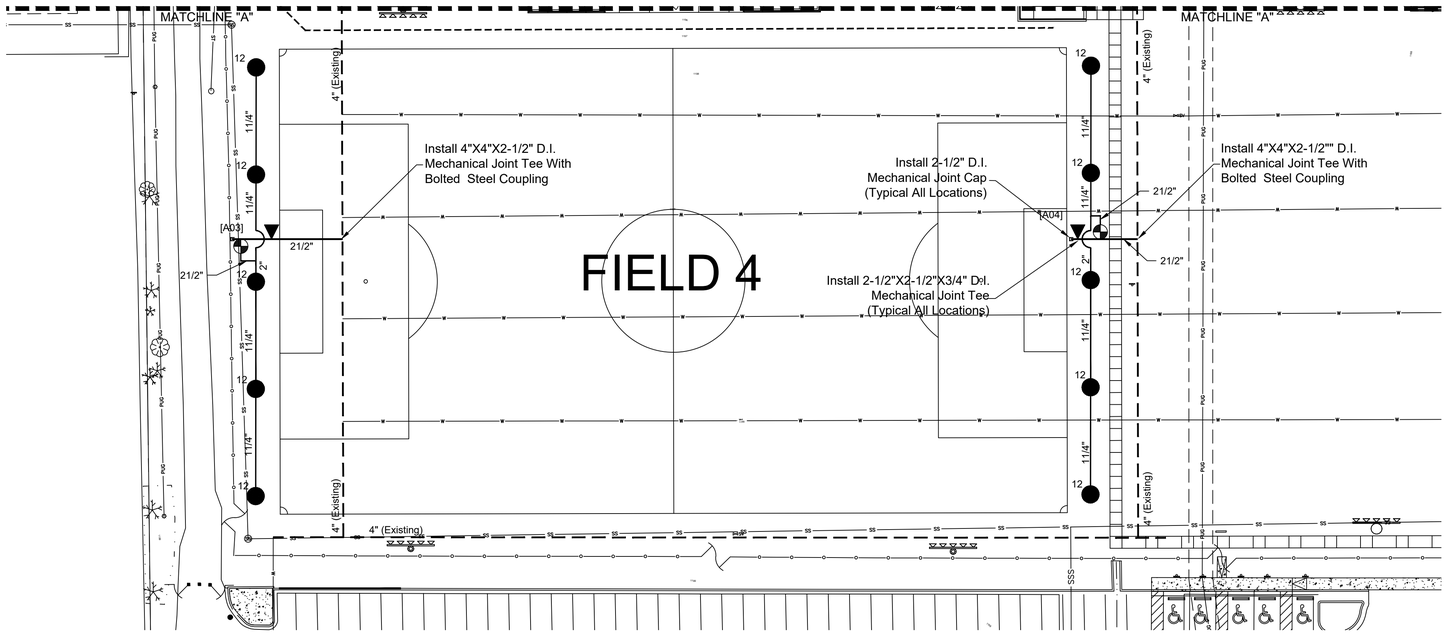
ISSUE/ REVISIONS

9/18/20	BID SET

OWNER:
THE CITY OF NORMAN
PARKS & RECREATION
201-C WEST GRAY
NORMAN, OK 73069
(405) 366-5472

SOD-1

FIELD
SODDING PLAN



EQUIPMENT LEGEND

- 12 — 4" ROTARY POP-UP HEAD – RAIN BIRD 6504 "FALCON" FC WITH RAIN CURTAIN NOZZLE AS SHOWN. (REFER TO DETAIL 1)
- EXISTING ROTARY HEAD – 1" (APPROXIMATE LOCATION SHOWN, SEE NOTES AND DETAIL 2)
- RAIN BIRD PESB SERIES CONTROL VALVE (NEW) WITH SPEARS MODEL 3629 TRU-UNION BALL VALVE – SEE VALVE CHART FOR SIZES (REFER TO DETAIL 3). ACTUAL VALVE LOCATIONS SHALL BE APPROVED BY OWNER.
- EXISTING RAIN BIRD PESB SERIES CONTROL VALVE 2" (APPROXIMATE LOCATION SHOWN, SEE NOTES)
- FREEZELESS BURY HYDRANT – WOODFORD MODEL Y95 WITH BURY DEPTH AS REQUIRED FOR SITE CONDITIONS (REFER TO DETAIL 4)
- A / 30 — EXISTING 30 STATION CONTROLLER
- PVC PIPE — MAIN LINES – PVC SCHEDULE 40 – 4" (EXISTING)
- MAIN LINES – PVC SCHEDULE 40 – 2-1/2" & 4" (NEW)
- LATERAL LINES – CL 200 SDR21 SOLVENT WELD JOINTS – SIZE AS SHOWN

NEW CONTROL VALVE LIST

VALVE ID	SIZE	MODEL	FLOW (GPM)
A01	2"	RAINBIRD 200-PEB	74
A02	2"	RAINBIRD 200-PEB	74
A03	2"	RAINBIRD 200-PEB	61
A04	2"	RAINBIRD 200-PEB	61
A05	2"	RAINBIRD 200-PEB	61
A06	2"	RAINBIRD 200-PEB	61
A07	2"	RAINBIRD 200-PEB	61
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REFER TO SHEET IR-3 FOR IRRIGATION INSTALLATION DETAILS AND NOTES

EXISTING IRRIGATION SYSTEM COMPONENTS INCLUDING BUT NOT LIMITED TO MAIN LINE, CONTROL VALVES, LATERAL PIPING AND SPRINKLER HEADS ARE SHOWN WITH APPROXIMATE LOCATIONS. CONTRACTOR IS TO FIELD VERIFY ALL ITEMS DURING THE BIDDING PROCESS.

30 0 15 30 60

NORTH

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CALL OKIE
1-800-522-6543

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918.628.1255 918.628.1256 FAX
WWW.PLANNINGDESIGNGROUP.COM

REGISTERED PROFESSIONAL ENGINEER
JAMES EDWIN MOORE
11869
OKLAHOMA

DATE SIGNED: 9/16/20

Moore Engineering, Inc. CA 1186
P.O. Box 514
Stillwater, OK 74076

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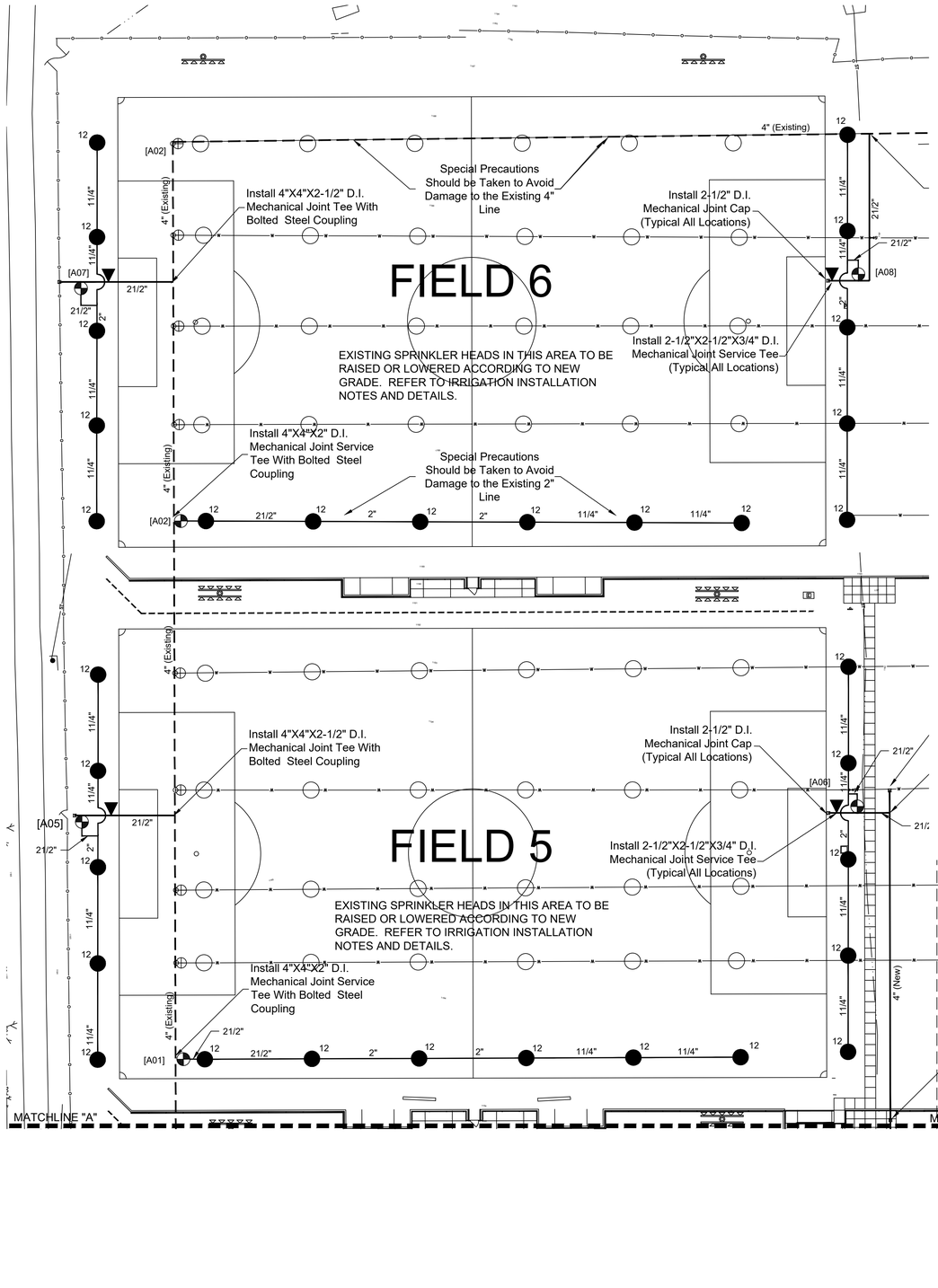
IR-1

IRRIGATION PLAN



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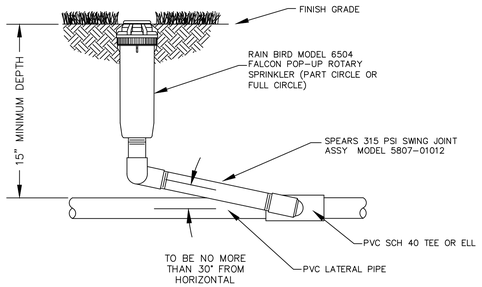
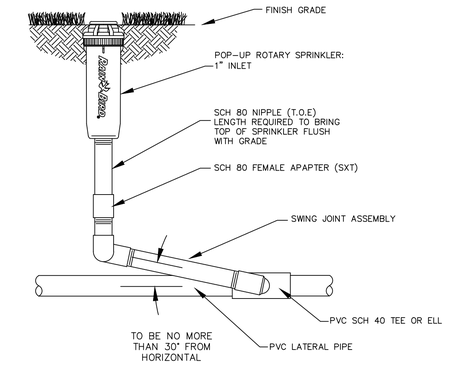
IR-2

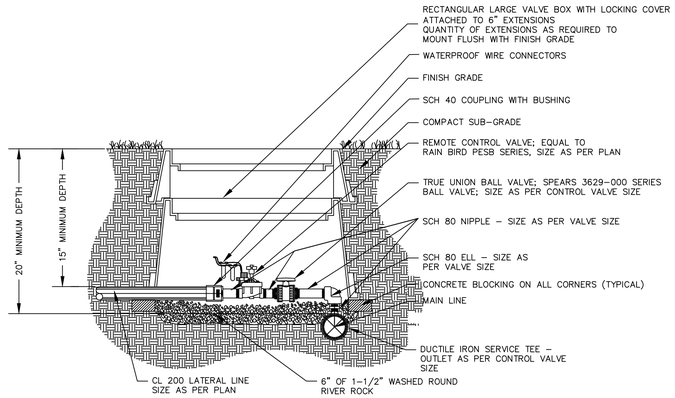
IRRIGATION PLAN



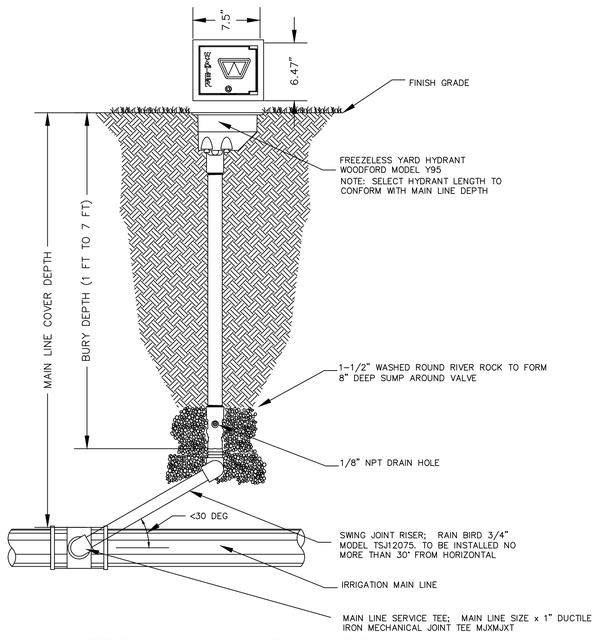
1 1" INLET GEARED ROTARY (NEW) – TYPICAL SECTION
NOT TO SCALE



2 1" INLET EXISTING GEARED ROTARY– TYPICAL SECTION
NOT TO SCALE



3 CONTROL VALVE ASSEMBLY (NEW) –TYPICAL SECTION
NOT TO SCALE

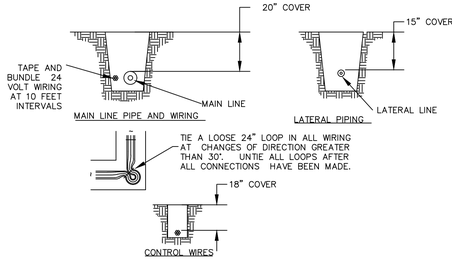


4 FREEZE;ESS YARD HYDRANT (TYPICAL SECTION)
NOT TO SCALE

NOTES:

1. GASKET JOINT MAIN LINES SHALL RECEIVE CONCRETE THRUST BLOCKS AT ALL POINTS OF CHANGE IN DIRECTION INCLUDING ISOLATION VALVES.
2. SEE IRRIGATION SPECIFICATIONS AND PIPE MANUFACTURER'S RECOMMENDATIONS FOR TYPE AND SIZE OF THRUST BLOCK TO FORM. SIZE SHALL BE APPROPRIATE FOR FITTING ARRANGEMENT, WATER PRESSURE AND SOIL TYPE ENCOUNTERED.
3. THRUST BLOCKS SHALL BE FORMED AGAINST A SOLID TRENCH WALL.
4. ALL PIPE AND FITTINGS SHALL BE COVERED WITH MINIMUM 4 MIL VISQUEEN PLASTIC WRAP PRIOR TO POURING THRUST BLOCK.

5 THRUST BLOCK DETAILS
NOT TO SCALE



6 TYPICAL TRENCH SECTION
NOT TO SCALE

INSTALLATION NOTES

1) There is an existing irrigation system on this project which must be protected and maintained operational at all times during construction activities. All damages to the existing irrigation system by the contractor shall be corrected at no cost to the Owner and said repairs shall receive the approval of Owner prior to acceptance of the system.

2) Prior to excavation, contractor shall verify utility locations with telephone, gas, cable tv, and electric companies. Owner Representative and Contractor to review site electrical, site grading and drainage, site irrigation and all other drawings pertaining to underground utility locations.

3) The irrigation design is diagrammatic. The intent of the drawings is to show the general layout and logic of the system. Scaled measurements may not be accurate. Actual locations and quantities of pipe and fittings may vary due to actual installation conditions. Contractor shall refer to landscape drawings for specific planting plans and locations. Although irrigation pipe may be shown inside existing tree drip/canopy area for convenience and clarity, contractor shall route lines outside of canopy of existing trees. When obstructions (trees, shrubs, hydrants, lights, etc.) interfere with spray pattern of sprinkler heads so as to prevent proper coverage, adjust sprinkler system by installing adjustable pattern sprinkler heads on each side of the obstruction so as to provide proper coverage. Contractor shall perform all adjustments at no additional cost to Owner.

4) Irrigation installation shall be coordinated with excavation, grading, building, paving and planting operations.

5) Contractor shall follow drawings, specifications and specific manufacturers recommendations to ensure proper installation of the irrigation system. Contractor shall notify Owner Representative in writing whenever there appears to be a conflict between any of the above stated documents. Contractor shall not willfully install the irrigation system as indicated on the drawings when it obvious in the field that obstructions, grade differences or area dimensions exist that might not have been considered during design. contractor shall bring such obstructions or differences to the attention of Owner's Representative. In the event this notification is not performed, Contractor assumes responsibility for all required revisions.

6) Irrigation 24 volt common wire shall be 14 gauge UF and control wire shall be 14 gauge UF. Waterproof connectors, appropriate for the voltage requirements specified by the controller manufacturer, shall be used on all splices and connections.

7) The existing heads on eight zones (48 heads total) shall be raised or lowered depending on their location on the revised grading plan. The heads shall be raised by the following techniques:

a. Excavate around and unscrew the sprinkler head from the swing joint assembly.

b. Install a Schedule 80 female adapter to the top male thread of the of the swing joint assembly. Glue a T.O.E. (thread one end) schedule 80 nipple into the socket end of the female adapter. The T.O.E. nipple shall be cut, prior to gluing, to the correct length to bring the top of the sprinkler head flush with grade. (Refer to Detail 2)

c. Reinstall sprinkler head.

8) The existing heads which need to be lowered will require the swing joint assembly to be dug around and exposed so the head can be lowered such that the top is flush with grade. This can be accomplished by rotating the swing joint assembly downward. If the proper height cannot be achieved by swing joint rotation, consult with Owner for alternate methods.

9) The valve enclosures around the existing control valves shall be raised or lowered depending on the valve location. The valve boxes shall be raised by adding 6" valve box extensions until the top of the valve box is flush with grade. If the existing valve boxes need to be lowered, then the boxes shall be dug around and lowered so the enclosure top is flush with grade. Proper blocking under all valve enclosures is required.

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NORMAN, OKLAHOMA

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09/16/20	100% BID SET

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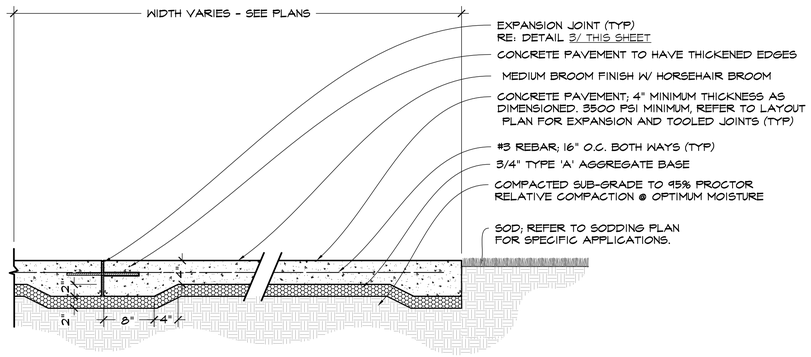
201-C WEST GRAY
NORMAN, OK 73069
(405) 366-5472

IR-3

IRRIGATION DETAILS AND NOTES



1 4" CONCRETE PAVING - SECTION
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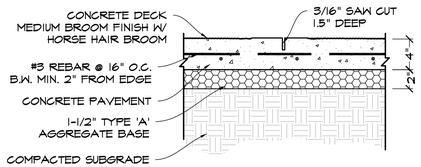

2 CONCRETE SAW CUT JOINT - SECTION
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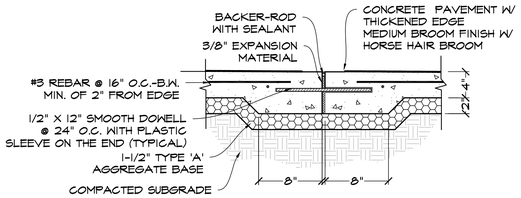
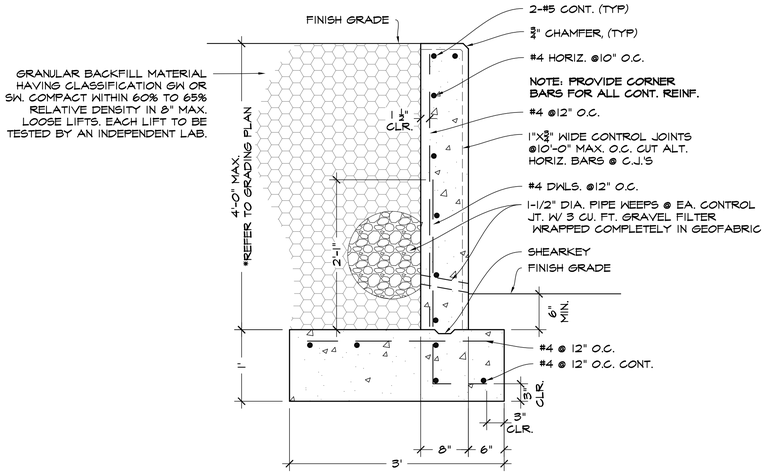


3 EXPANSION JOINT - SECTION
SCALE: NTS

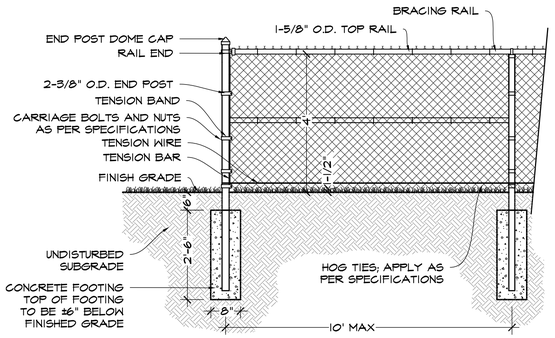


4 RETAINING WALL - SECTION VIEW
SCALE: 1" = 1'-0"

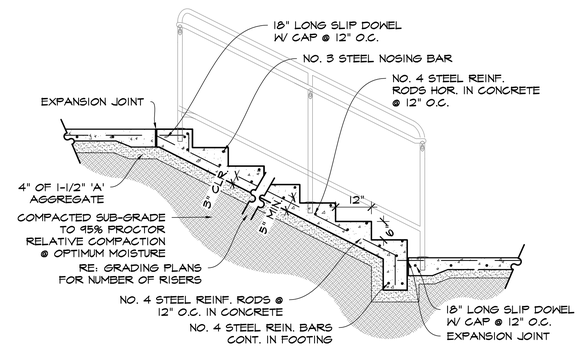
GENERAL STRUCTURAL NOTES

FOUNDATIONS
1. FOOTING DESIGN ARE BASED UPON A ESTIMATED BEARING VALUE OF 1500 POUNDS PER SQUARE FOOT.
2. REINFORCING STEEL TO MEET A.S.T.M. SPECIFICATION A-615, LATEST REVISION, GR 60.
3. ALL WALLS SHALL HAVE ADEQUATE TEMPORARY BRACING BEFORE BACKFILL IS PLACED AGAINST WALLS. TEMPORARY BRACING SHALL NOT BE REMOVED UNTIL WALL IS PERMANENTLY BRACED.
4. PROVIDE CORNER BARS FOR ALL CONTINUOUS HORIZONTAL REINFORCING.

CONCRETE
1. CONCRETE TO HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 LBS./SQ. INCH AT END OF 28 DAYS



5 4'H. CHAINLINK FENCE (BLACK VINYL COATED) - SECTION VIEW
SCALE: 1/2" = 1'-0"



7 CONCRETE STAIRS - SECTION VIEW
SCALE: 1/2" = 1'-0"

DETAIL NOTES

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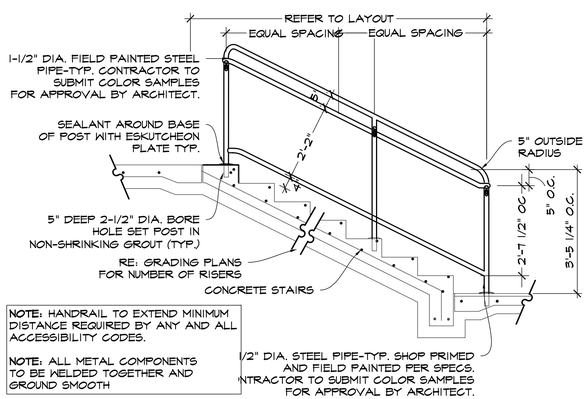
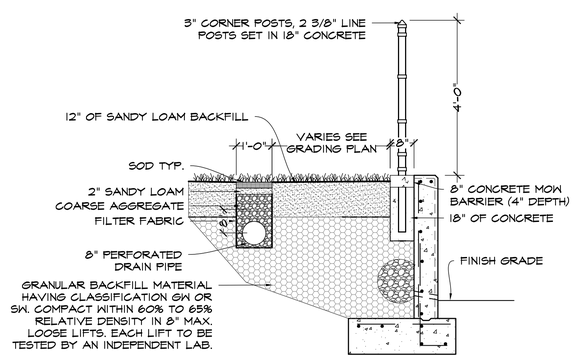
2. WRITTEN DIMENSIONS HAVE PRIORITY OVER SCALED DIMENSIONS.
3. ALL VERTICAL DIMENSIONS ARE TAKEN FROM THE TOP OF FOOTING.
4. REFER TO SPECIFICATIONS AND MANUFACTURER'S RECOMMENDATIONS FOR ANY ADDITIONAL INFORMATION.
5. ALL CONSTRUCTION TO BE IN STRICT ACCORDANCE WITH CURRENT CITY OF NORMAN SPECIFICATIONS AND STANDARDS.



6 ADA HANDRAIL - SECTION VIEW
SCALE: 1/2" = 1'-0"



8 WALL, FENCE & FRENCH DRAIN -DETAIL
SCALE: 1/2" = 1'-0"

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JAMES C. CROSBY 121 REGISTERED LANDSCAPE ARCHITECT OKLAHOMA 8-20

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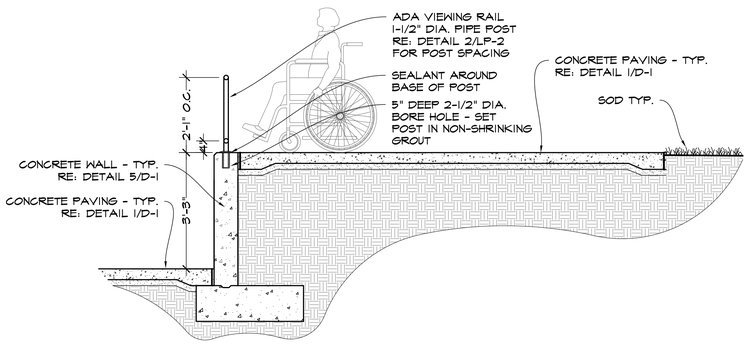
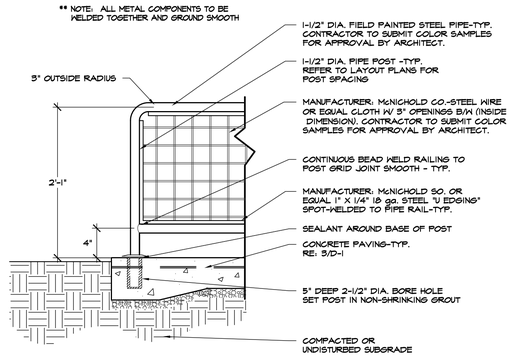
D-1
CONSTRUCTION DETAILS



1 ADA VIEWING PLAZA - SECTION VIEW
SCALE:1"=1'-0"



2 ADA VIEWING RAIL - SECTION VIEW
SCALE:1"=1'-0"

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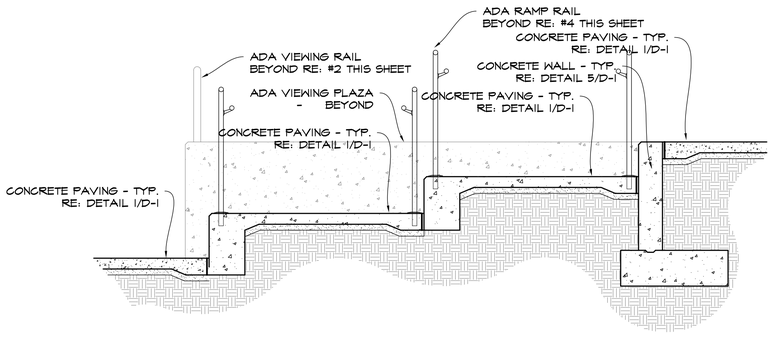
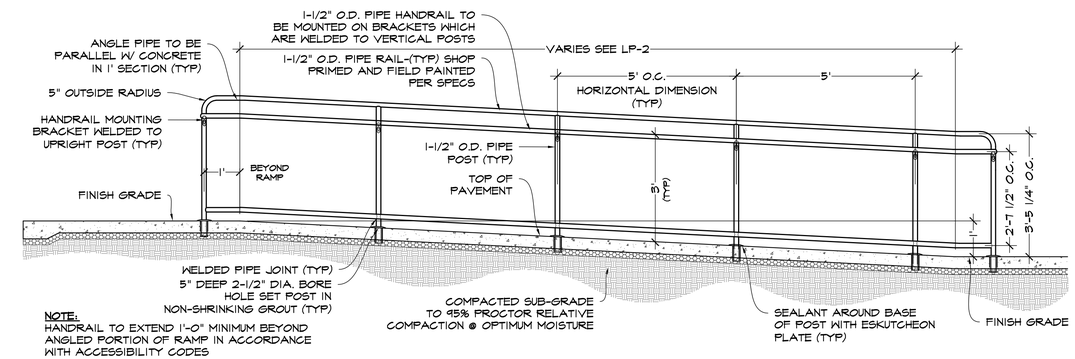
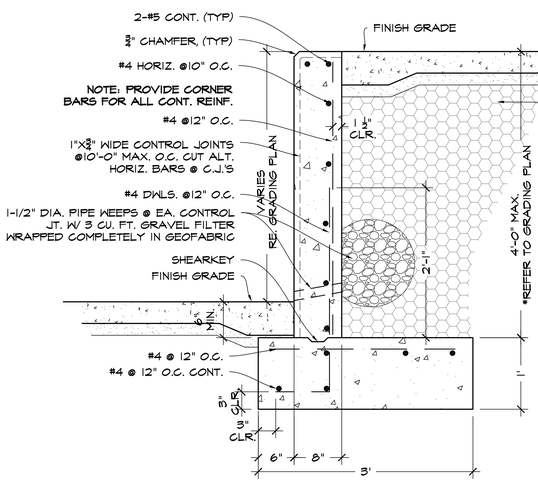


3 ADA PLAZA RAMP - SECTION VIEW
SCALE:1/2"=1'-0"



4 ADA RAMP RAIL - SECTION VIEW
SCALE:1"=1'-0"



5 CONCRETE WALL - SECTION VIEW
SCALE:1"=1'-0"

GRANULAR BACKFILL MATERIAL HAVING CLASSIFICATION GW OR SW. COMPACT WITHIN 60% TO 65% RELATIVE DENSITY IN 8" MAX. LOOSE LIFTS. EACH LIFT TO BE TESTED BY AN INDEPENDENT LAB.

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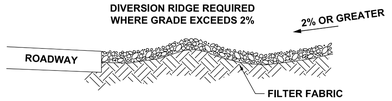
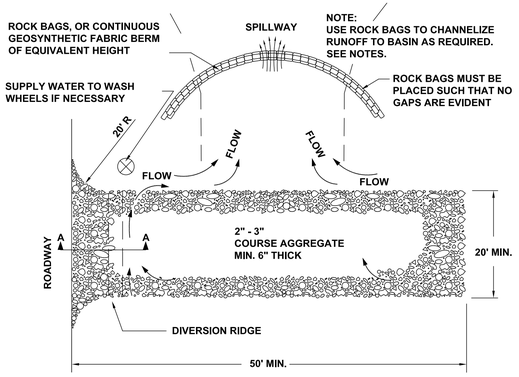
D-2
ADA VIEWING PLAZA DETAILS



SECTION A -- A

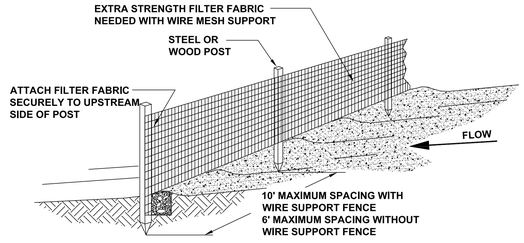


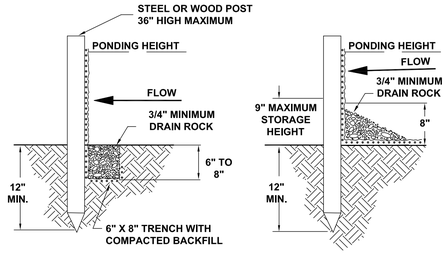
PLAN

NOTES:

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
4. ROCK BAGS OR SANDBAGS SHALL BE PLACED SUCH THAT NO GAPS ARE EVIDENT. SEE NOTES ERO-03.

1 TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT
SCALE: NTS





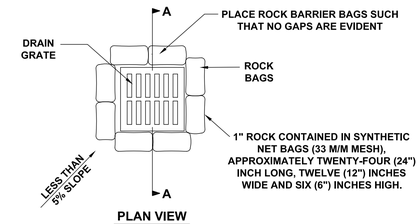
TRENCH DETAIL

INSTALLATION WITHOUT TRENCHING

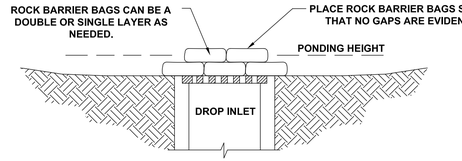
NOTES:

1. MUST BE INSTALLED PROPERLY TO AVOID NOTICE OF VIOLATION.
2. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE POUNDING EFFICIENCY.
3. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY. 9" MAXIMUM RECOMMENDED STORAGE HEIGHT.
4. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE TO SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.

2 FILTER FABRIC SILT FENCE
SCALE: NTS



PLAN VIEW



SECTION A-A

NOTES:

1. DROP INLET SEDIMENT BARRIERS ARE TO BE USED FOR SMALL, NEARLY LEVEL DRAINAGE AREAS. (LESS THAN 5%.)
2. A "REASONABLE" DESIGN SIZE PARTICLE TO CAPTURE MUST BE SELECTED.
3. SIZE DISTRIBUTION OF UPSTREAM SOIL PARTICLES MUST BE EVALUATED.
4. INFLOW AND OUTFLOW FROM THE SYSTEM FOR A SPECIFIC FREQUENCY STORM MUST BE KNOWN.
5. POND VOLUME IS DIRECTLY PROPORTIONAL TO THE DISCHARGE RATE OF WATER FROM THE SYSTEM.
6. POND VOLUME IS INVERSELY PROPORTIONAL TO THE MASS OF THE DESIGN SIZE SUSPENDED PARTICLE.
7. A SYSTEM MUST PROVIDE SUFFICIENT FLOW TO ALLOW FOR DEPOSITION OF DESIGN SIZE PARTICLES.
8. THE PONDING HEIGHT MUST BE WELL BELOW THE GROUND ELEVATION DOWNSLOPE TO PREVENT RUNNOFF FROM BYPASSING THE INLET. A TEMPORARY DIKE MAY BE NECESSARY ON THE DOWNSLOPE SIDE OF THE STRUCTURE.

3 ROCK BAG INLET SEDIMENT BAG
SCALE: NTS

Temporary Erosion Control

SMALL GRAINS SUCH AS OATS, RYE, WHEAT, SUDANS AND SORGHUMS ARE THE MOST FEASIBLE TEMPORARY VEGETATION TO CONTROL EROSION. THE PRACTICE IS EFFECTIVE FOR AREAS WHERE THE SOIL IS LEFT EXPOSED FOR A PERIOD OF 6 TO 12 MONTHS. THE TIME PERIOD MAY BE SHORTER DURING PERIODS OF EROSIVE RAINFALL.

1. PRIOR TO SEEDING, NEEDED EROSION CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, BERMS, DIKES, ETC., SHALL BE INSTALLED.
2. TEMPORARY VEGETATIVE PRACTICES SHALL CONFORM TO BEST MANAGEMENT PRACTICES FOR CONSTRUCTION SITES AS ESTABLISHED BY EPA.
3. IF THE AREA TO BE SEEDED HAS BEEN RECENTLY LOOSENED TO THE EXTENT THAT AN ADEQUATE SEEDBED EXISTS, NO ADDITIONAL TREATMENT IS REQUIRED. HOWEVER IF THE AREA TO BE SEEDED IS PACKED, CRUSTED, AND/OR HARD, THE TOP LAYER OF SOIL SHALL BE LOOSENED BY DISCING OR OTHER SUITABLE MEANS.
4. FERTILIZER SHALL BE APPLIED AT A RATE OF 600 POUNDS PER ACRE OR 15 POUNDS PER 1000 SQUARE FOOT USING 10-20-10 OR EQUAL.
5. SOILS KNOWN TO BE HIGHLY ACIDIC SHALL BE LIME TREATED.
6. SEEDING OPTIONS ARE AS FOLLOWS:

PLANT	QUANTITY PER ACRE	QUANTITY PER 1000 S.F.	PLANTING DATE	DEPTH
ANNUAL	40 LBS	0.90 LBS	09/15 TO 11/30	1/4 IN.
ELBON RYE	2 BU.	3.00 LBS	08/15 TO 11/30	2 IN.
WHEAT	2 BU.	3.00 LBS	08/15 TO 11/30	2 IN.
OATS	3 BU.	2.50 LBS	08/15 TO 11/30	2 IN.
SORGHUM	60 LBS	1.40 LBS	03/01 TO 09/15	2 IN.
SUDAN	40 LBS	0.90 LBS	04/01 TO 09/15	2 IN.

7. SEEDS SHALL BE DRILLED UNIFORMLY.
8. SEEDING IMPLEMENTS SHOULD BE USED AT RIGHT ANGLES TO THE GENERAL SLOPE TO MINIMIZE EROSION.
9. 1 TO 3 MONTHS AFTER PLANTING, THE SEEDED SITE SHALL BE TOP DRESSED WITH 8 POUNDS PER 1000 SQUARE FEET OR 350 POUNDS PER ACRE OF 33-0-0.
10. AREAS WHICH DO NOT DEVELOP A SUFFICIENT COVER SHALL BE REPLANTED.
11. THE SEEDED AREA SHALL BE WATERED WHEN FEASIBLE AND NEEDED.

Permanent Erosion Control

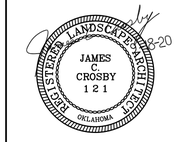
BERMUDA GRASS, KENTUCKY 31, TALL FESCUE AND WEEPING LOVEGRASS ARE SOME OF THE TYPES OF PERMANENT VEGETATION THAT MAY BE EFFECTIVELY USED TO CONTROL EROSION.

1. PRIOR TO SEEDING, NEEDED EROSION CONTROL PRACTICES SUCH AS DIVERSIONS, GRADE STABILIZATION STRUCTURES, BERMS, DIKES, ETC., SHALL BE INSTALLED.
2. THE SURFACE SHALL BE LOOSENED EVENLY TO A DEPTH OF 2 TO 3 INCHES AND 10-20-10 FERTILIZER (10 POUNDS PER 1000 SQUARE FOOT OR 450 POUNDS PER ACRE) SHALL BE MIXED WITH THE LOOSENED SURFACE SOIL BY DISCING OR OTHER SUITABLE MEANS.
3. SOILS KNOWN TO BE HIGHLY ACIDIC SHALL BE LIME TREATED.
4. SEEDING OPTIONS ARE AS FOLLOWS:

PLANT	QUANTITY PER ACRE	QUANTITY PER 1000 S.F.	PLANTING DATE	DEPTH
BERMUDA	10 LBS	0.25 LBS	04/01 TO 08/15	1/2 IN.
FESCUE	40 LBS	0.90 LBS	09/01 TO 11/01	1/2 IN.
LOVEGRASS	40 LBS	0.90 LBS	04/01 TO 06/30	1/2 IN.

5. SEEDS SHALL BE DRILLED UNIFORMLY.
6. SEEDING IMPLEMENTS SHOULD BE USED AT RIGHT ANGLES TO THE GENERAL SLOPE TO MINIMIZE EROSION.
7. MULCH SHALL BE USED WHERE NEEDED.
8. THE AREA SHALL BE WATERED DAILY OR AS OFTEN AS NECESSARY TO MAINTAIN ADEQUATE SOIL MOISTURE UNTIL THE PLANTS GROW 1/2 TO 1 INCH.

PDG
PLANNING DESIGN GROUP
LANDSCAPE ARCHITECTURE ● RECREATIONAL DESIGN ● LAND PLANNING
5314 S. YALE AVE., SUITE 710, TULSA, OK 74135
918.628.1255 918.628.1256 FAX
WWW.PLANNINGDESIGNGROUP.COM



JAMES C. CROSBY, ASLA
LANDSCAPE ARCHITECT OF RECORD

PROJECT INFORMATION

PROJECT ADDRESS:

1001 E. ROBINSON ST.,
NORMAN, OKLAHOMA 73071

PROJECT NO.	NA
DATE	9/8/20
DRAWN BY	CHECKED BY
AB	GE

GRIFFIN SOCCER COMPLEX NORTHWEST FIELD RENOVATIONS NORMAN, OKLAHOMA

ISSUE/ REVISIONS

9/18/20	BID SET

OWNER:

THE CITY OF NORMAN PARKS & RECREATION
201-C WEST GRAY
NORMAN, OK 73069
(405) 366-5472

D-3

EROSION CONTROL DETAILS