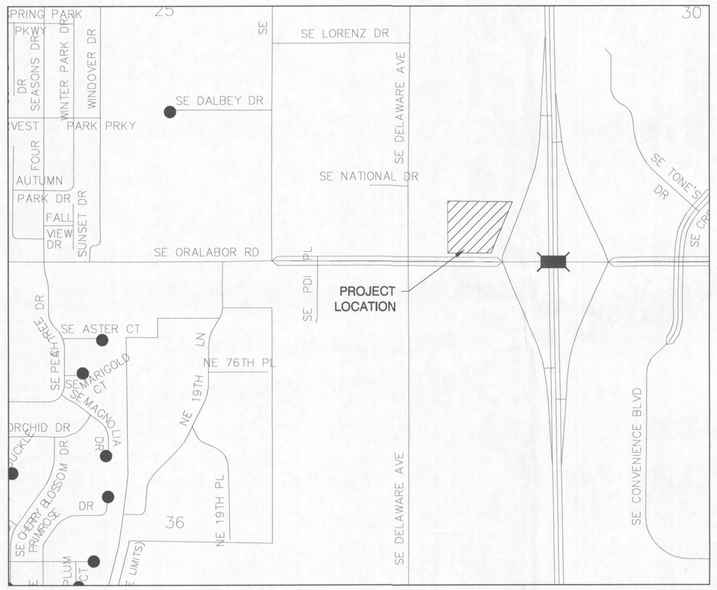
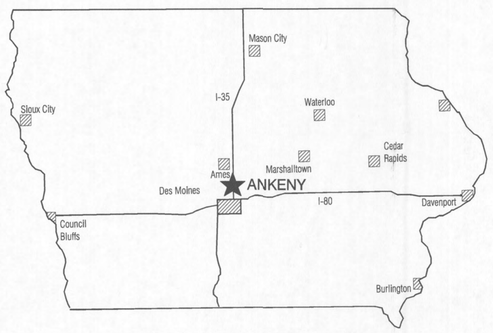
MENARDS SITE IMPROVEMENTS
ANKENY, IOWA
~2016~



VICINITY MAP

NOT TO SCALE



LOCATION MAP

WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH THE IOWA STATEWIDE URBAN STANDARD SPECIFICATIONS FOR PUBLIC IMPROVEMENTS, 2016 EDITION (SUDAS) AND THE CITY OF ANKENY STANDARD SPECIFICATIONS

INDEX OF SHEETS

SHEET NO.	DESCRIPTION
C.100	EXISTING CONDITIONS & DEMOLITION PLAN
C.200	LAYOUT PLAN
C.300	GRADING PLAN
C.310	STORM WATER POLLUTION PLAN
C.500-C.504	DETAILS

Clapsaddle-Garber Associates, Inc
16 East Main Street, P.O. Box 754
Marshalltown, Iowa 50158
Phone 641-752-6701
www.cgaconsultants.com

ADAM C. DATERS LICENSED 19579 IOWA PROFESSIONAL ENGINEER

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

Signature Date
Adam C. Daters, PE
Iowa License Number 19579
My license renewal date is December 31, 2016

Pages or sheets covered by this seal:

CGA PROJECT NO. 5562.04 SHEET C.001

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LEGEND

EXISTING	PROPOSED		EXISTING	PROPOSED	
		EVERGREEN TREE	W (*)	W	WATERLINE
		DECIDUOUS TREE			WATER VALVE
F	F	FRUIT TREE			FIRE HYDRANT
SB	SB	SHRUBS (BUSHES)		W	WATER METER
		TREE LINE			CURB STOP
		STUMP			YARD HYDRANT
		SWAMP	PIV	PIV	POST INDICATOR VALVE
		CEMETERY	San(*)	San	SANITARY SEWER LINE
G		GRAVE	StS (*)	StS	STORM SEWER LINE
CV		CAVE	M		MANHOLE
SH		SINK HOLE	C	C	CLEANOUT
W		WELL			INTAKE
W		WINDMILL			BEEHIVE INTAKE
C		CISTERN	R	R	ROOF DRAIN
ST		SEPTIC TANK	R	R	ROOF DRAIN (SURFACE)
LP		LP GAS TANK	R	R	ROOF DRAIN (UNDERGROUND)
UST		UNDERGROUND STORAGE TANK	G (*)	G	GAS LINE
		SATELLITE DISH			GAS VALVE
SIGN		SIGN (TYPE AS NOTED)	G	G	GAS METER
		FLAGPOLE	OH E	OH E	OVERHEAD ELECTRICAL LINE
		SOIL BORING	E (*)	E	BURIED ELECTRICAL LINE
		MONITORING WELL			POWER POLE
		PARKING METER	E	E	ELECTRICAL METER
		MAILBOX			ELECTRICAL HIGHLINE TOWER
		POST			TRAFFIC SIGNAL
		BOLLARD			STREET LIGHT
SPH		SPRINKLER HEAD			LUMINAIRE
SPV		SPRINKLER HEAD VALVE			ELECTRICAL BOX/TRANSFORMER
		GUARDRAIL (BEAM OR CABLE)	FO(*)	FO	FIBER OPTICS LINE
X X	X X	FENCE	FO	FO	FIBER OPTICS BOX
		FIELD TILE	FO	FO	FIBER PEDESTAL
		TILE OUTLET	T(*)	T	TELEPHONE LINE
		DRAINAGE WAY			TELEPHONE POLE
		EDGE OF WATER	T	T	TELEPHONE PEDESTAL
		SILT FENCE	T	T	TELEPHONE BOX
105	105	CONTOUR LINE	TV	TV	CABLE TELEVISION LINE
+99.00	+00.00	SPOT ELEVATION	TV(*)	TV	TELEVISION PEDESTAL
			TV	TV	TELEVISION BOX
			AC	AC	AIR CONDITIONER

EXISTING	PROPOSED	
		SECTION/R.O.W. LINE
		BOUNDARY LINE
		PROPERTY LINE
		EASEMENT LINE
		SETBACK LINE
		R.O.W. RAIL OR LOT CORNER
		CONCRETE MONUMENT
		GOVERNMEINT CORNER MONUMENT
		PARCEL OR LOT CORNER MONUMENT
		TEMP. CONSTRUCTION EASEMENT CORNER
		SURVEY CONTROL POINT

UTILITY LINETYPES WITH A QUALITY LEVEL INDICATOR (*) HAVE BEEN LOCATED PER THE FOLLOWING ASCE STANDARD GUIDELINE FOR THE COLLECTION & DEPICTION OF EXISTING SUBSURFACE UTILITY DATA* :

(A) - PRECISE HORIZONTAL & VERTICAL LOCATION OF UTILITIES OBTAINED BY THE ACTUAL EXPOSURE (OR VERIFICATION OF PREVIOUSLY EXPOSED & SURVEYED UTILITIES) & SUBSEQUENT MEASUREMENT OF SUBSURFACE UTILITIES, USUALLY AT A SPECIFIC POINT. MINIMALLY INTRUSIVE EXCAVATION EQUIPMENT IS TYPICALLY USED TO MINIMIZE THE POTENTIAL FOR UTILITY DAMAGE. A PRECISE HORIZONTAL & VERTICAL LOCATION, AS WELL AS OTHER UTILITY ATTRIBUTES, IS SHOWN ON PLAN DOCUMENTS. ACCURACY IS TYPICALLY SET TO 15- MM VERTICAL & TO APPLICABLE HORIZONTAL SURVEY & MAPPING ACCURACY AS DEFINED OR EXPECTED BY THE PROJECT OWNER.

(B) - INFORMATION OBTAINED THROUGH THE APPLICATION OF APPROPRIATE SURFACE GEOPHYSICAL METHODS TO DETERMINE THE EXISTENCE & APPROXIMATE HORIZONTAL POSITION OF SUBSURFACE UTILITIES. QUALITY LEVEL B DATA SHOULD BE REPRODUCIBLE BY SURFACE GEOPHYSICS AT ANY POINT OF THEIR DEPICTION. THIS INFORMATION IS SURVEYED TO APPLICABLE TOLERANCES DEFINED BY THE PROJECT & REDUCED ONTO PLAN DOCUMENTS.

(C) - INFORMATION OBTAINED BY SURVEYING & PLOTTING VISIBLE ABOVE-GROUND UTILITY FEATURES & BY USING PROFESSIONAL JUDGEMENT IN CORRELATING THIS INFORMATION TO QUALITY LEVEL D INFORMATION.

(D) - INFORMATION DERIVED FROM EXISTING RECORDS OR ORAL RECOLLECTIONS.

GENERAL NOTES

1. THE CONTRACTOR SHALL NOTIFY THE CITY OF ANKENY AND ONE CALL 48 HOURS PRIOR TO COMMENCING CONSTRUCTION AND PRIOR TO UTILITY CONSTRUCTION, SUBGRADE PREP, MAIN LINE PAVING AND BOX-OUT PAVING.
2. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE URBAN STANDARD SPECIFICATION AND ANKENY SPECIAL CONDITIONS, CURRENT AT THE COMMENCEMENT OF CONSTRUCTION
3. THE CONTRACTOR AND DEVELOPER'S ENGINEER SHALL ATTEND A REQUIRED PRE-CONSTRUCTION MEETING WITH THE CITY PUBLIC WORKS AND ENGINEERING DEPARTMENTS PRIOR TO COMMENCEMENT OF CONSTRUCTION.
4. THE CONTRACTOR SHALL VERIFY THE LOCATION AND PROTECT ALL UTILITIES AND STRUCTURES. DAMAGE TO UTILITIES AND STRUCTURES SHALL BE REPAIRED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE CITY AND OWNER.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECORDING HE AS-BUILT LOCATION OF ALL SANITARY SEWER, SUMP AND WATER MAIN SERVICES AND VERIFYING LOCATIONS ON THE AS-BUILT DRAWINGS.
6. RECONNECT ANY FIELD TILE THAT IS INTERCEPTED DURING THE UTILITY CONSTRUCTION, LOCATION OF THE FIELD TILE SHALL BE NOTED ON THE AS-BUILT DRAWINGS.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING AND MAINTAINING TRAFFIC CONTROL IN ACCORDANCE WITH THE CURRENT VERSION OF MUTCD.
8. PRIOR TO ACCEPTANCE OF THE PUBLIC IMPROVEMENTS, AS-BUILT RECORD DRAWINGS (HORIZONTAL AND VERTICAL AS-BUILT DATA IN STATE PLAN COORDINATES AND NGVD 29 DATUM) FOR ALL WATER, SANITARY SEWER, STORM SEWER PIPING AND ASSOCIATED APPURTENANCES, AND SITE GRADING WILL BE PROVIDED (VOLUME CALCULATIONS FOR ALL STORM WATER DETENTION FACILITIES SHALL ALSO BE PROVIDED).

UTILITY COMPANIES

THE FOLLOWING UTILITIES ARE PRESENT ON THIS PROJECT

City of Ankeny Ken Plager	515-965-6710
CenturyLink Tom Sturmer	303-664-8090
Iowa Communications Network (ICN) Doug Ebelsheiser	515-725-4742
Mid American Craig Ranfeld	515-252-6632
MediaCom Paul May	515-246-2252
Iowa Department of Transportation Scott Smyth	515-986-5457

NOTE:
TYPICAL DEPTH OF COVER ON WATERMAIN PIPE IN ANKENY IS 5 FT.

UNDERGROUND STRUCTURES, FACILITIES, AND UTILITIES HAVE BEEN PLATTED FROM AVAILABLE SURVEYS, RECORDS AND DEEDS. THEREFORE THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. THERE MAY BE OTHERS, THE EXISTENCE OF WHICH IS PRESENTLY NOT KNOWN.

PROJECT CONTROL POINTS

POINT #	NORTHING	EASTING	ELEVATION
500	620889.71	1618936.35	946.16
501	620827.48	1619111.16	944.94
502	620814.26	1618750.97	946.34

IOWA ONE CALL
1-800-292-8989
www.iowaonecall.com
811 Know what's below. Call before you dig.

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NO.	REVISION	BY	DATE	NO.	REVISION	BY	DATE

CGA
Cllapsaddle-Garber Associates, Inc
16i East Main Street
Marshalltown, Iowa 50158
Ph 641-752-6701
www.cgaconsultants.com

DESIGNED: AJI DATE: 12-11-2015
DRAWN: RWA DATE: 12-11-2015
CHECKED: AJI DATE: 12-11-2015
APPROVED: ACD DATE: 12-11-2015

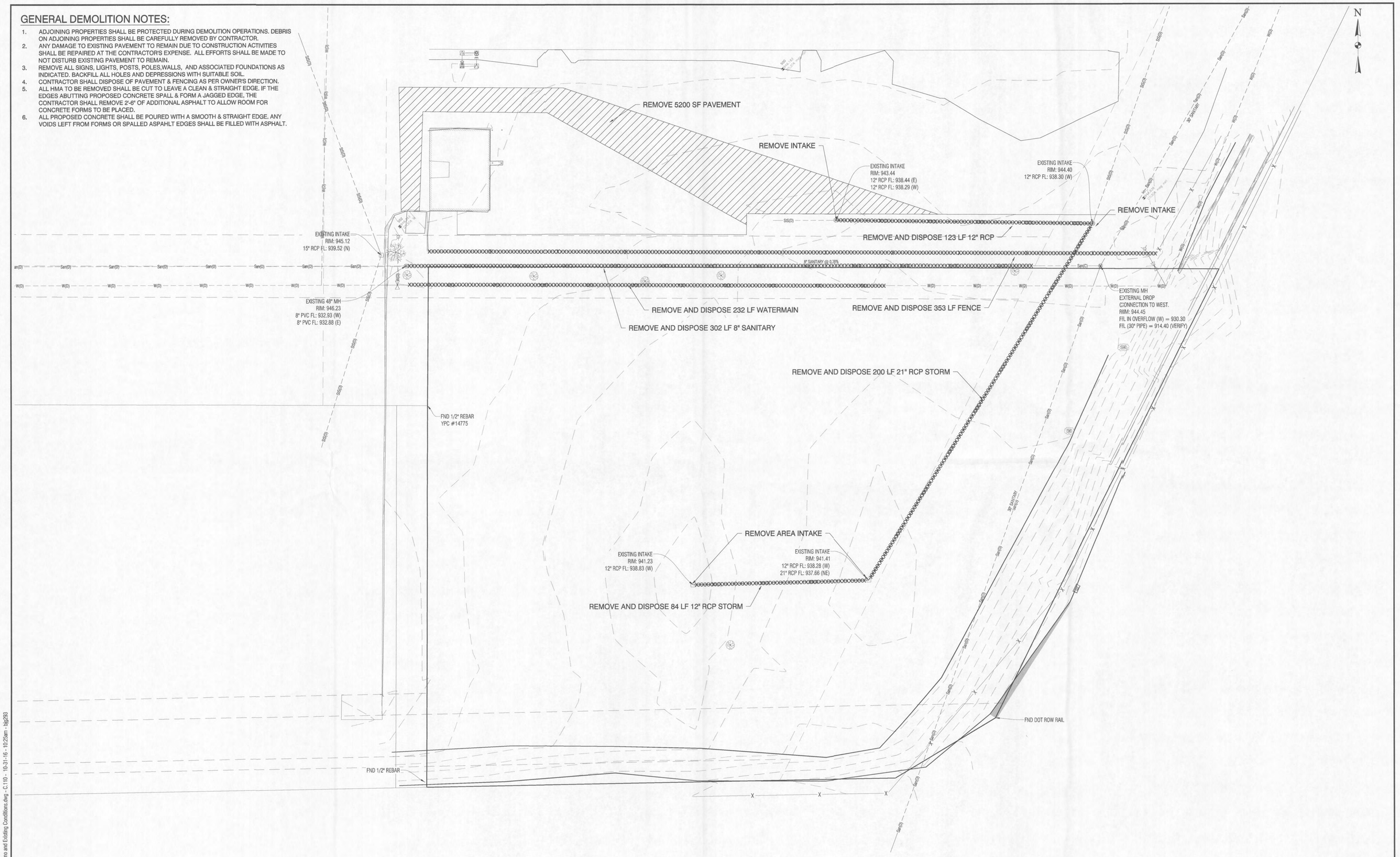
MENARDS SITE IMPROVEMENTS
ANKENY, IOWA

SYMBOLS, LEGEND, AND GENERAL INFORMATION

PROJECT NO. 5562.04
SHEET NO. C.002

GENERAL DEMOLITION NOTES:

1. ADJOINING PROPERTIES SHALL BE PROTECTED DURING DEMOLITION OPERATIONS. DEBRIS ON ADJOINING PROPERTIES SHALL BE CAREFULLY REMOVED BY CONTRACTOR.
2. ANY DAMAGE TO EXISTING PAVEMENT TO REMAIN DUE TO CONSTRUCTION ACTIVITIES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. ALL EFFORTS SHALL BE MADE TO NOT DISTURB EXISTING PAVEMENT TO REMAIN.
3. REMOVE ALL SIGNS, LIGHTS, POSTS, POLES,WALLS, AND ASSOCIATED FOUNDATIONS AS INDICATED. BACKFILL ALL HOLES AND DEPRESSIONS WITH SUITABLE SOIL.
4. CONTRACTOR SHALL DISPOSE OF PAVEMENT & FENCING AS PER OWNER'S DIRECTION.
5. ALL HMA TO BE REMOVED SHALL BE CUT TO LEAVE A CLEAN & STRAIGHT EDGE. IF THE EDGES ABUTTING PROPOSED CONCRETE SPALL & FORM A JAGGED EDGE, THE CONTRACTOR SHALL REMOVE 2'-6" OF ADDITIONAL ASPHALT TO ALLOW ROOM FOR CONCRETE FORMS TO BE PLACED.
6. ALL PROPOSED CONCRETE SHALL BE POURED WITH A SMOOTH & STRAIGHT EDGE. ANY VOIDS LEFT FROM FORMS OR SPALLED ASPAHLT EDGES SHALL BE FILLED WITH ASPHALT.



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GRAPHIC SCALE
0 20' 40' 60'

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Marshalltown, Iowa 50158
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www.cgaconsultants.com

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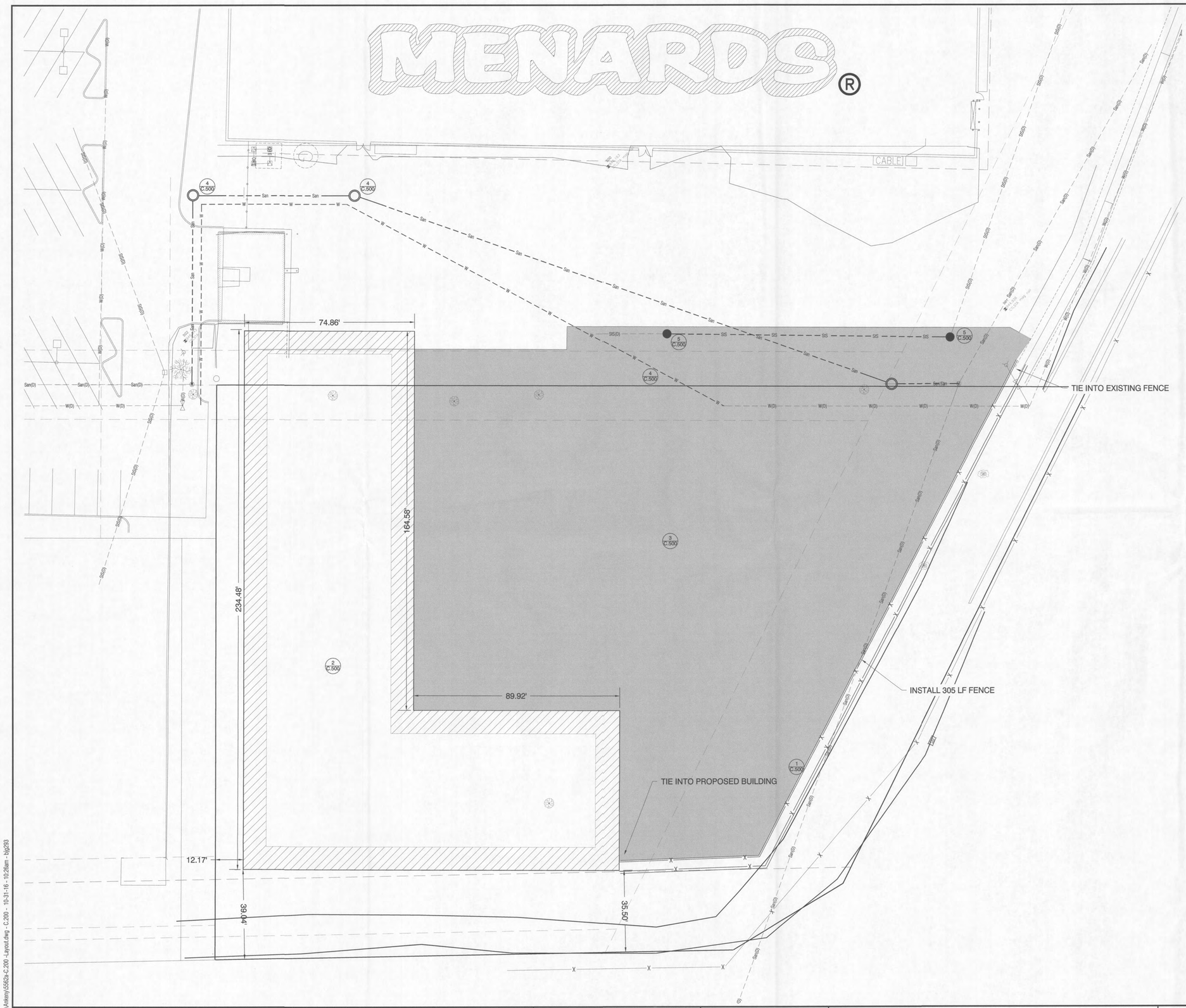
APPROVED: _____ DATE: _____

MENARDS SITE IMPROVEMENTS
ANKENY, IOWA

EXISTING CONDITIONS & DEMOLITION PLAN

PROJECT NO. 5562.04A
SHEET NO. C.110



GENERAL LAYOUT NOTES:

1. ALL DIMENISIONS ARE TO BACK OF CURB UNLESS OTHERWISE NOTED.
2. ALL WORK SHALL BE IN ACCORDANCE WITH OSHA CODES & STANDARDS. NOTHING INDICATED ON THESE DRAWINGS SHALL RELIEVE THE CONTRACTOR FROM COMPLYING WITH APPROPRIATE SAFETY REGULATIONS.
3. SIGHT LIGHTING SHALL BE AS PER OWNER.
4. ALL DISTURBED AREAS SHALL BE SEEDED, FERTILIZED & MULCHED UNLESS OTHERWISE NOTED IN PLANS.
5. ANY DAMAGE TO THE PAVEMENT NOT SHOWN FOR REMOVAL ON THE PLANS DUE TO CONSTRUCTION ACTIVITIES SHALL BE REPAIRED AT THE CONTRACTORS EXPENSE. ALL EFFORTS SHALL BE MADE TO NOT DISTURB EXISTING PAVEMENT.
6. COORDINATE GAS, ELECTRIC, TELEPHONE, & FIBER OPTIC WITH RESPECTIVE UTILITY COMPANIES.
7. ALL WATERMAIN TO BE INSTALLED WITH THRUST BLOCKS AT ALL DIRECTION CHANGES.
8. CONNECTION OF ROOF DRAINS TO STORM NETWORK TO BE MADE WITH 15" RCP.

CONSTRUCTION DETAILS

- 1 / C.500 FENCE SECTION
- 2 / C.500 STRUCTURE CONCRETE SLAB
- 3 / C.500 TRAFFIC SECTION
- 4 / C.500 WALL SECTION
- 4 / C.500 SANITARY MANHOLE
- 5 / C.500 AREA INTAKE

GRAPHIC SCALE
0 20' 40' 60'

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MENARDS SITE IMPROVEMENTS
ANKENY, IOWA

LAYOUT PLAN

PROJECT NO. 5562.04A
SHEET NO. C.200

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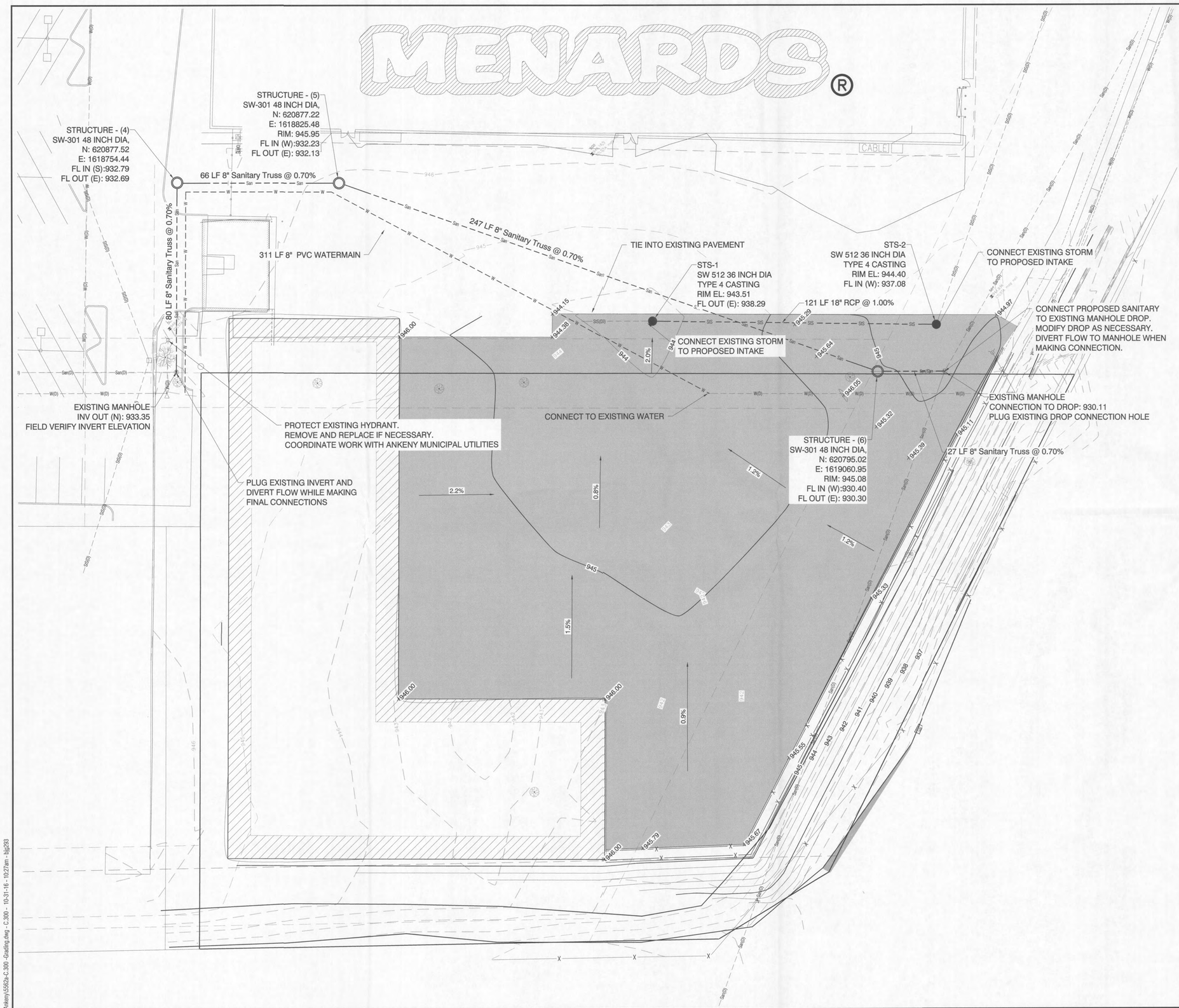

GENERAL GRADING NOTES

1. GRADE TO DRAIN AWAY FROM ALL BUILDINGS.

N

LEGEND

TOC	TOP OF CURB
BOC	BOTTOM OF CURB
T/W	TOP OF WALL
B/W	BOTTOM OF WALL
LP	LOW POINT
HP	HIGH POINT
2.0% →	PROPOSED SLOPE
→	PROPOSED DRAINAGE PATTERN

FINISHED FLOOR ELEVATIONS

TOP OF SLAB ELEVATION IN WAREHOUSE =946

GRAPHIC SCALE
0 20' 40' 60'

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MENARDS SITE IMPROVEMENTS
ANKENY, IOWA

GRADING PLAN

PROJECT NO. 5562.04A
SHEET NO. C.300

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POLK COUNTY, CITY OF ANKENY

POLLUTION PREVENTION PLAN

ALL CONTRACTORS/SUBCONTRACTORS SHALL CONDUCT THEIR OPERATIONS IN A MANNER THAT MINIMIZES EROSION AND PREVENTS SEDIMENTS FROM LEAVING THE PROJECT SITE. THE PRIME CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE AND IMPLEMENTATION OF THE POLLUTION PREVENTION PLAN (PPP) FOR THEIR ENTIRE CONTRACT. THIS RESPONSIBILITY SHALL BE FURTHER SHARED WITH SUBCONTRACTORS WHOSE WORK IS A SOURCE OF POTENTIAL POLLUTION AS DEFINED IN THIS PPP.

1. SITE DESCRIPTION

THIS POLLUTION PREVENTION PLAN (PPP) IS FOR MENARDS IN ANKENY, IOWA INCLUDING DEMOLITION, GRADING, PAVING, UTILITIES, & BUILDING ADDITION.
THIS PPP COVERS APPROXIMATELY 1.78 ACRES WITH AN ESTIMATED 1.78 ACRES BEING DISTURBED. THE PORTION OF THE PPP COVERED BY THIS CONTRACT HAS 1.78 ACRES BEING DISTURBED.

THE PPP IS LOCATED IN AN AREA OF CLARION-NICOLLET-WEBSTER SOIL ASSOCIATION. THE ESTIMATED AVERAGE CURVE NUMBER FOR THIS PPP AFTER COMPLETION WILL BE 98.

REFER TO THIS SHEET, AND THE GRADING SHEETS FOR LOCATIONS OF TYPICAL SLOPES, DITCH GRADES, AND MAJOR STRUCTURAL AND NONSTRUCTURAL CONTROLS. A COPY OF THIS PLAN WILL BE ON FILE AT THE PROJECT ENGINEER'S OFFICE. RUNOFF FROM THIS WORK WILL FLOW INTO ONSITE STORM SEWER.

2. POTENTIAL SOURCES OF POLLUTION

SITE SOURCES OF POLLUTION GENERATED AS A RESULT OF THIS WORK RELATE TO SILTS AND SEDIMENT WHICH MAY BE TRANSPORTED AS A RESULT OF A STORM EVENT. HOWEVER, THIS PPP PROVIDES CONVEYANCE FOR OTHER NON-PROJECT RUNOFF THAT IS BEYOND THE CONTROL OF THIS PPP. POTENTIALLY THIS RUNOFF CAN CONTAIN VARIOUS POLLUTANTS RELATED TO SITE-SPECIFIC LAND USES. EXAMPLES ARE:

RURAL AGRICULTURAL ACTIVITIES - RUNOFF FROM AGRICULTURAL LAND USE CAN POTENTIALLY CONTAIN CHEMICALS INCLUDING HERBICIDES, PESTICIDES, FUNGICIDES, AND FERTILIZERS.

COMMERCIAL AND INDUSTRIAL ACTIVITIES - RUNOFF FROM COMMERCIAL, INDUSTRIAL, AND COMMERCE LAND USE MAY CONTAIN CONSTITUENTS ASSOCIATED WITH THE SPECIFIC OPERATION. SUCH OPERATIONS ARE SUBJECT TO POTENTIAL LEAKS AND SPILLS WHICH COULD BE COMMINGLED WITH RUNOFF FROM THE FACILITY. POLLUTANTS ASSOCIATED WITH COMMERCIAL AND INDUSTRIAL ACTIVITIES ARE NOT READILY AVAILABLE SINCE THEY ARE TYPICALLY PROPRIETARY.

3. CONTROLS

PRIOR TO BEGINNING GRADING, EXCAVATION, OR CLEARING AND GRUBBING OPERATIONS, SILT FENCE SHALL BE PLACED ALONG THE PERIMETER OF THE AREAS TO BE DISTURBED AT LOCATIONS WHERE RUNOFF CAN MOVE OFFSITE. VEGETATION IN AREAS NOT NEEDED FOR CONSTRUCTION SHALL BE PRESERVED. AS AREAS REACH THEIR FINAL GRADE, ADDITIONAL SILT FENCE, SILT BASINS, COMPOST FILLED SOCKS, INTERCEPTING DITCHES, SOD FLUMES, LETDOWNS, BRIDGE EDGE DRAINS, AND EARTH DIKES SHALL BE INSTALLED AS SPECIFIED IN THE PLANS AND/OR AS REQUIRED BY THE PROJECT ENGINEER. THIS WILL INCLUDE USING SILT FENCE OR EQUIVALENT AS DITCH CHECKS AND TO PROTECT INTAKES. TEMPORARY STABILIZING MULCH SHALL BE COMPLETED AS THE DISTURBED AREAS ARE CONSTRUCTED. IF CONSTRUCTION ACTIVITY IS NOT PLANNED TO OCCUR IN A DISTURBED AREA FOR AS LEAST 21 DAYS, THE AREA SHALL BE STABILIZED BY TEMPORARY MULCHING WITHIN 14 DAYS. OTHER STABILIZING METHODS SHALL BE USED OUTSIDE THE SEEDING PERIOD.

THIS WORK SHALL BE DONE IN ACCORDANCE WITH THE SPECIFICATIONS.

AS THE WORK PROGRESSES, ADDITIONAL EROSION CONTROL ITEMS SUCH AS STRAW BALE BARRIER, SEDIMENT TRAPS, AND OTHER APPROPRIATE MEASURES SHALL BE INSTALLED BY THE PRIME OR SUBCONTRACTOR AS DETERMINED BY THE ENGINEER AFTER FIELD INVESTIGATION. THE CONSTRUCTION WILL BE COMPLETED WITH THE ESTABLISHMENT OF PERMANENT PERENNIAL VEGETATION OF ALL DISTURBED AREAS.

4. OTHER CONTROLS

CONTRACTOR DISPOSAL OF UNUSED CONSTRUCTION MATERIALS AND CONSTRUCTION MATERIAL WASTES SHALL COMPLY WITH APPLICABLE STATE AND LOCAL WASTE DISPOSAL, SANITARY SEWER, OR SEPTIC SYSTEM REGULATIONS. IN THE EVENT OF A CONFLICT WITH OTHER GOVERNMENTAL LAWS, RULES AND REGULATIONS, THE MORE RESTRICTIVE LAWS, RULES OR REGULATIONS SHALL APPLY.

5. APPROVED STATE OR LOCAL PLANS

DURING THE COURSE OF THIS CONSTRUCTION, IT IS POSSIBLE THAT SITUATIONS WILL ARISE WHERE UNKNOWN MATERIALS WILL BE ENCOUNTERED. WHEN SUCH SITUATIONS ARE ENCOUNTERED, THEY WILL BE HANDLED ACCORDING TO ALL FEDERAL, STATE AND LOCAL REGULATIONS IN EFFECT AT THE TIME.

6. MAINTENANCE

THE CONTRACTOR IS REQUIRED TO MAINTAIN ALL TEMPORARY EROSION CONTROL MEASURES IN PROPER WORKING ORDER, INCLUDING CLEANING, REPAIRING, OR REPLACING THEM THROUGHOUT THE CONTRACT PERIOD. CLEANING OF SILT CONTROL DEVICES SHALL BEGIN WHEN THE FEATURES HAVE LOST 50% OF THEIR CAPACITY.

7. INSPECTIONS

INSPECTIONS SHALL BE MADE JOINTLY BY THE CONTRACTOR AND THE CONTRACTING AUTHORITY (IF APPLICABLE) EVERY SEVEN CALENDAR DAYS. THE CONTRACTOR SHALL IMMEDIATELY BEGIN CORRECTIVE ACTION ON ALL DEFICIENCIES FOUND. THE FINDINGS OF THIS INSPECTION SHALL BE RECORDED IN THE SWPPP BOOKLET OR PROJECT DIARY. THIS PPP MAY BE REVISED BASED ON THE FINDINGS OF THE INSPECTION. THE CONTRACTOR SHALL IMPLEMENT ALL REVISIONS. ALL CORRECTIVE ACTIONS SHALL BE COMPLETED WITHIN 3 CALENDAR DAYS OF THE INSPECTION.

8. NON-STORM DISCHARGES

THIS INCLUDES SUBSURFACE DRAINS (I.E. LONGITUDINAL AND STANDARD SUBDRAINS), SLOPE DRAINS AND BRIDGE END DRAINS. THE VELOCITY OF THE DISCHARGE FROM THESE FEATURES MAY BE CONTROLLED BY THE USE OF PATIO BLOCKS, CLASS A STONE OR EROSION STONE.

9. GENERAL NOTES

A. THE ABOVE PLAN IS NOT THE COMPLETE STORM WATER PREVENTION PLAN (SWPPP), BUT RATHER A PART OF THE SWPPP THAT IS TO BE UPDATED REGULARLY BY THE CONTRACTOR. IT IS PRIME CONTRACTORS RESPONSIBILITY TO DEVELOP AND UPDATE THE SWPPP PLAN AS NEED AS WELL AS CONDUCT ANY NECESSARY INSPECTIONS IN ACCORDANCE WITH IOWA DNR, EPA, AND JURISDICTION GUIDELINES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING ANY DEFICIENCIES, CORRECTING THOSE DEFICIENCIES IMMEDIATELY AND DOCUMENTING SUCH WITH THE SWPPP. ALL EROSION CONTROL ITEMS EXCEPT THE TURF REINFORCEMENT MAT SHALL BE REMOVED AT THE END OF THE PROJECT.

B. ALL STOCK PILES NOT INTENDED TO BE REDISTRIBUTED IN 21 DAYS MUST BE SEEDED OR OTHERWISE CONTROLLED WITH EROSION CONTROL FEATURES BY THE 14TH DAY AFTER STOCK PILING. STOCK PILE LOCATIONS SHALL BE APPROVED BY THE OWNER.

C. THE GENERAL CONTRACTOR SHALL PROVIDE CONTAINMENT OF ALL SOURCES OF POTENTIAL POLLUTION INCLUDING FUELING AREA, PORTABLE SANITARY FACILITIES, WASTE DEPOSITORY AREAS (DUMPSTER LOCATIONS), AND OTHER POLLUTION SOURCES. ALL AREAS WHERE CONCRETE TRUCKS ARE WASHED OUT SHALL BE DEFINED AND CONTAINED ON SITE. CONCRETE WASHOUT AREA SHALL BE CLEARLY MARKED AND THE CONTRACTOR SHALL CLEAN OUT THIS AREA PRIOR TO FINALIZING THE PROJECT (INCIDENTAL). ALL EROSION CONTROL DEVICES MUST BE MAINTAINED AS STATED IN THE POLLUTION PREVENTION PLAN.

D. CONTRACTOR SHALL TAKE PRECAUTIONS TO INSURE THAT EQUIPMENT, VEHICLES, AND PLANTING OPERATIONS DO NOT DISTURB OR DAMAGE EXISTING GRADES, WALLS, DRIVES, PAVEMENT, UTILITIES, PLANTS, LAWNS, IRRIGATION SYSTEMS, AND OTHER FACILITIES. REPAIR, REPLACE, AND/OR RETURN TO ORIGINAL CONDITION ANY DAMAGED ITEM, WITHOUT ADDITIONAL COMPENSATION.

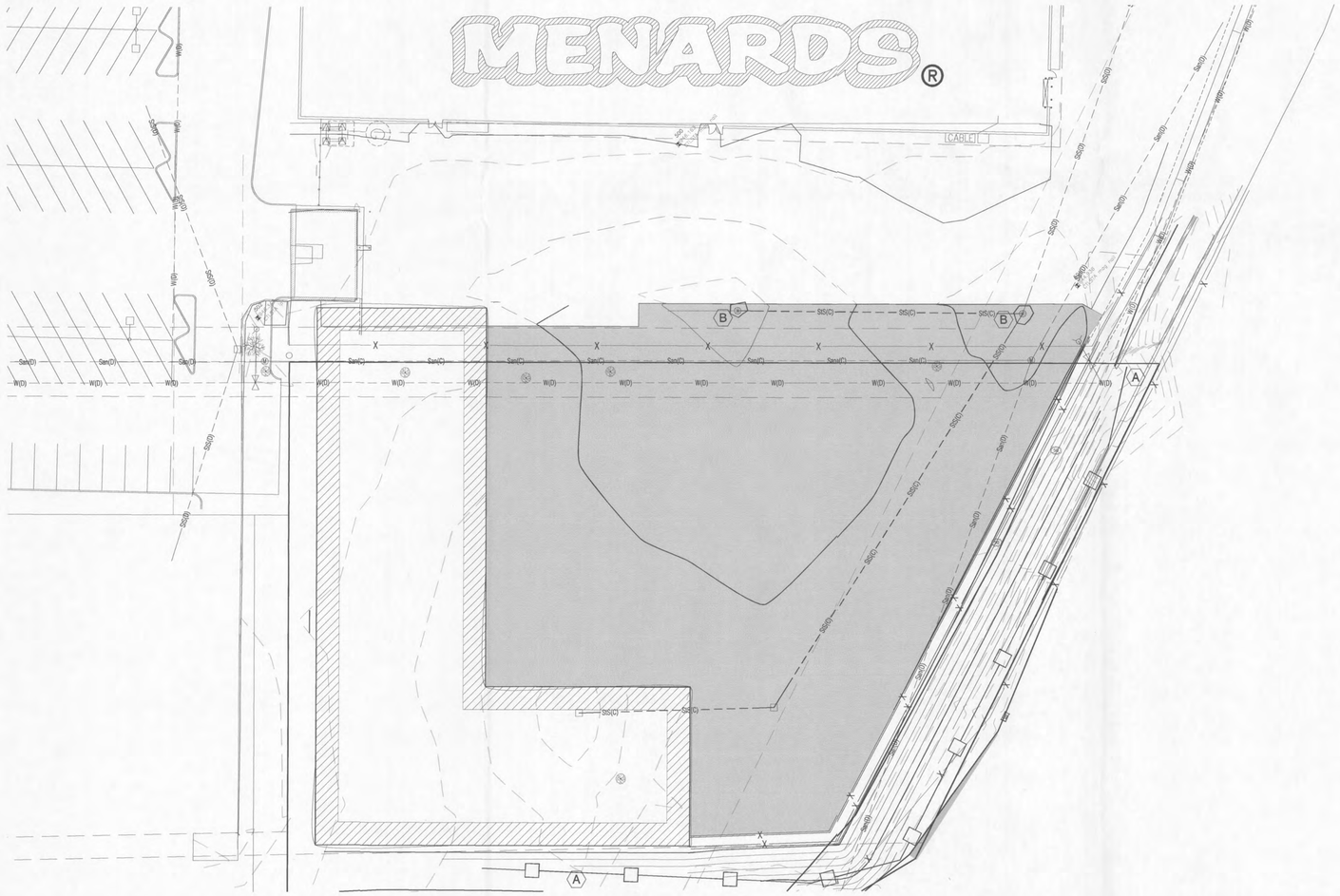
E. THE CONTRACTOR SHALL PREVENT ACCUMULATION OF EARTH, SILTATION, OR DEBRIS ON ADJOINING PUBLIC OR PRIVATE PROPERTY FROM THE PROJECT SITE. REMOVE ANY ACCUMULATION OF EARTH OR DEBRIS IMMEDIATELY AT NO COST TO THE OWNER. TAKE REMEDIAL ACTIONS FOR PREVENTION, REPAIR, REPLACE, AND/OR RETURN TO ORIGINAL CONDITION, WITHOUT ADDITIONAL COMPENSATION.

F. THE COST FOR THIS WORK SHALL BE INCLUDED IN THE CONTRACTOR'S BASE BID.

10. CONSTRUCTION NOTES:

(A) INSTALL SILT FENCE OR COMPOST FILLED FILLED SOCK - TO BE REMOVED AT THE END OF THE PROJECT.

(B) INSTALL INLET PROTECTION - TO BE REMOVED AT THE END OF THE PROJECT.



GRAPHIC SCALE
0 30' 60' 90'

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CGA
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Ph 641-752-6701
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DRAWN: _____ DATE: _____
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APPROVED: _____ DATE: _____

MENARDS SITE IMPROVEMENTS
ANKENY, IOWA

STORM WATER POLLUTION PREVENTION PLAN

PROJECT NO. 5562.04A
SHEET NO. C.310

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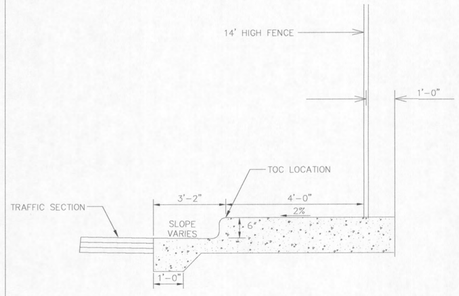
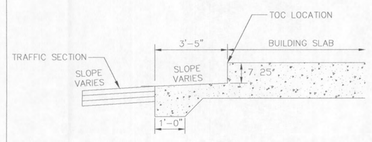


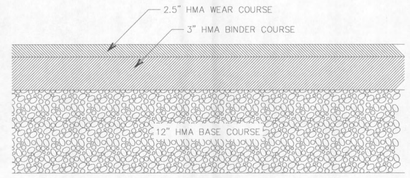
NOTE: CONTROL JOINTS @ 8' O.C.
EXPANSION JOINTS @ 48' O.C.
3/4 " DIA DOWELS 12" O.C. REQUIRED AT EXPANSION JOINTS

1 FENCE SECTION DETAIL



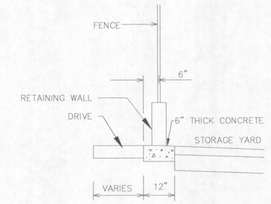
NOTE: CONTROL JOINTS @ 8' O.C.
EXPANSION JOINTS @ 48' O.C.
3/4 " DIA DOWELS 12" O.C. REQUIRED AT EXPANSION JOINTS

2 TYPICAL STRUCTURE CONCRETE SLAB



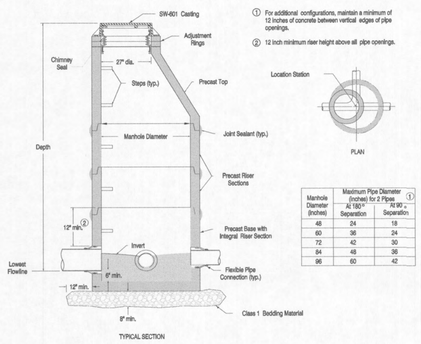
HEAVY TRAFFIC SECTION

3 TRAFFIC SECTION



SEE MENARDS PLANS FOR FURTHER DETAILS

4 WALL SECTION DETAIL

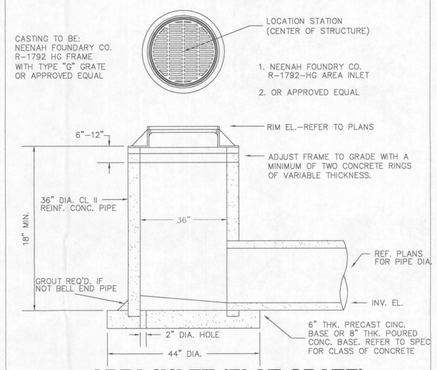


① For additional configurations, maintain a minimum of 12 inches of concrete between vertical edges of pipe openings.

② 12 inch minimum riser height above all pipe openings.

Manhole Diameter (inches)	Maximum Pipe Diameter (inches) for 2 Pipes ① At 180° Separation	At 90° Separation
48	24	18
60	36	24
72	42	30
84	48	36
96	60	42

5 SANITARY MANHOLE DETAIL



6 AREA INLET (FLAT GRATE)

NO.	REVISION	BY	DATE	NO.	REVISION	BY	DATE

CGA
Clapsaddle-Garber Associates, Inc
16 IEast Main Street
Marshalltown, Iowa 50158
Ph (641-752-6701
www.cgaconsultants.com

DESIGNED: AJI DATE: 12-11-2015
DRAWN: RWA DATE: 12-11-2015
CHECKED: AJI DATE: 12-11-2015
APPROVED: ACD DATE: 12-11-2015

MENARDS SITE IMPROVEMENTS
ANKENY, IOWA

PLAN

PROJECT NO. 5562.04A
SHEET NO. C.500

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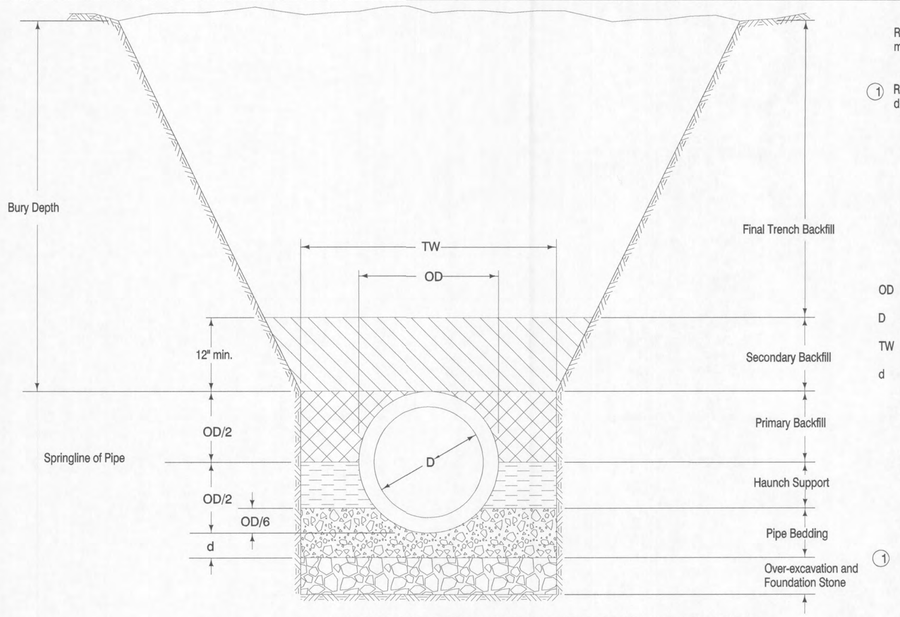


Refer to the contract documents for specific material and placement requirements.

(1) Required only when specified in the contract documents or when directed by the Engineer.

Key

OD = Outside diameter of pipe

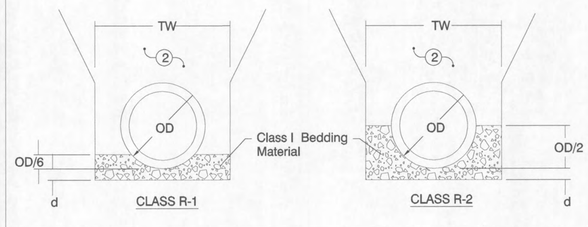
D = Inside diameter of pipe

TW = Trench width at top of pipe

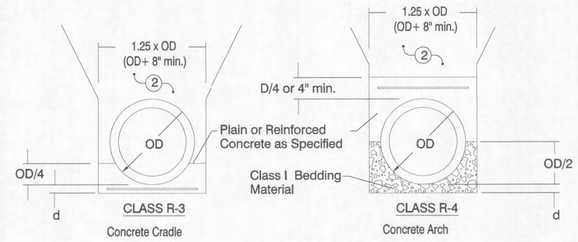
d = Depth of bedding material below pipe

(1) TRENCH BEDDING & BACKFILL ZONES

RCP AND VCP PIPE BEDDING (1)



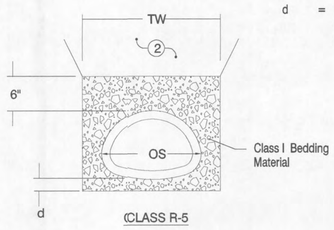
CLASS R-1 CLASS R-2



CLASS R-3 Concrete Cradle

CLASS R-4 Concrete Arch

REINFORCED CONCRETE ARCH PIPE BEDDING



CLASS R-5

Refer to sheet 2 for bury depth restrictions.

(1) Use Bedding Class R-1 or R-2 unless specified otherwise.

(2) Place remainder of bedding and backfill materials as specified in the contract documents.

Key

OD = Outside diameter of pipe

OS = Outside span of pipe

TW = Trench width at top of pipe:
Min. = OD+18 inches
Max.= 1.25xOD+12 inches OR 54 inches (whichever is greater)

d = Depth of bedding material below pipe:
OD/8 or OS/8, OR 4 inches (whichever is greater)

ALLOWABLE BURY DEPTH

CLASS III RCP

Pipe Diameter (inches)	Class R-1 Bedding	Class R-2 Bedding	Class R-3 & R-4 Bedding		
			No Steel	As=0.4%	As=1.0%
12	7'	10'	15'	19'	27'
15	8'	10'	16'	19'	27'
18	8'	11'	16'	20'	40'
21	8'	11'	18'	26'	40'
24	8'	12'	23'	36'	40'
27	10'	15'	30'	40'	40'
30	11'	15'	29'	40'	40'
33	11'	15'	28'	40'	40'
36	11'	15'	27'	40'	40'
42	11'	15'	26'	38'	40'
48	11'	15'	26'	36'	40'
54	11'	15'	25'	34'	40'
60	11'	15'	25'	33'	40'
66	11'	15'	24'	32'	40'
72	11'	15'	24'	32'	40'

As = Area of Steel Reinforcing

CLASS IV RCP

Pipe Diameter (inches)	Class R-1 Bedding	Class R-2 Bedding	Class R-3 & R-4 Bedding		
			No Steel	As=0.4%	As=1.0%
12	12'	15'	23'	28'	40'
15	12'	16'	23'	30'	40'
18	13'	16'	29'	40'	40'
21	13'	18'	40'	40'	40'
24	16'	23'	40'	40'	40'
27	19'	30'	40'	40'	40'
30	19'	29'	40'	40'	40'
33	19'	28'	40'	40'	40'
36	19'	28'	40'	40'	40'
42	18'	27'	40'	40'	40'
48	18'	26'	40'	40'	40'
54	18'	25'	40'	40'	40'
60	18'	25'	40'	40'	40'
66	18'	25'	40'	40'	40'
72	18'	24'	40'	40'	40'

As = Area of Steel Reinforcing

CLASS V RCP

Pipe Diameter (inches)	Class R-1 Bedding	Class R-2 Bedding	Class R-3 & R-4 Bedding		
			No Steel	As=0.4%	As=1.0%
12	18'	23'	35'	40'	40'
15	19'	24'	40'	40'	40'
18	19'	30'	40'	40'	40'
21	25'	40'	40'	40'	40'
24	34'	40'	40'	40'	40'
27	40'	40'	40'	40'	40'
30	40'	40'	40'	40'	40'
33	40'	40'	40'	40'	40'
36	40'	40'	40'	40'	40'
42	37'	40'	40'	40'	40'
48	35'	40'	40'	40'	40'
54	33'	40'	40'	40'	40'
60	32'	40'	40'	40'	40'
66	31'	40'	40'	40'	40'
72	31'	40'	40'	40'	40'

As = Area of Steel Reinforcing

EXTRA STRENGTH VCP

Pipe Diameter (inches)	Class R-1 Bedding	Class R-2 Bedding	Class R-3 & R-4 Bedding		
			No Steel	As=0.4%	As=1.0%
6	25'	30'	30'	30'	30'
8	20'	26'	30'	30'	30'
10	18'	23'	30'	30'	30'
12	16'	20'	30'	30'	30'
15	15'	19'	28'	30'	30'
18	14'	18'	30'	30'	30'
21	15'	22'	30'	30'	30'
24	18'	28'	30'	30'	30'
27	20'	30'	30'	30'	30'
30	19'	29'	30'	30'	30'
33	20'	30'	30'	30'	30'
36	20'	30'	30'	30'	30'
39	19'	29'	30'	30'	30'
42	18'	26'	30'	30'	30'

As = Area of Steel Reinforcing

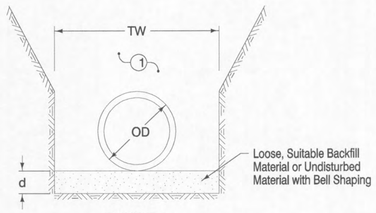
REINFORCED CONCRETE ARCH PIPE

Pipe Size (inch by inch)	Equiv. Diameter (inches)	Class A-III	Class A-IV
18 by 11	15	6'	11'
22 by 13	18	6'	11'
26 by 15	21	6'	13'
29 by 18	24	7'	15'
36 by 22	30	8'	15'
44 by 27	36	8'	14'
51 by 31	42	8'	15'
58 by 36	48	8'	15'
65 by 40	54	8'	15'
73 by 45	60	8'	14'
88 by 54	72	9'	14'

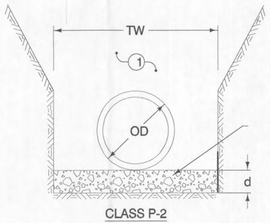
Based on Class R-5 bedding.

(3) RIGID GRAVITY PIPE TRENCH BEDDING

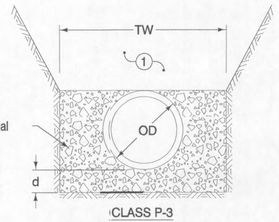
BEDDING CLASSES



CLASS P-1



CLASS P-2



CLASS P-3

ALLOWABLE BURY DEPTH

DUCTILE IRON, AWWA C151, CLASS 52

Pipe Diameter (inches)	Class P-1 Bedding	Class P-2 Bedding	Class P-3 Bedding
4	40'	40'	40'
6	40'	40'	40'
8	40'	40'	40'
10	36'	40'	40'
12	31'	40'	40'
14	26'	40'	40'
16	23'	37'	40'
18	20'	34'	40'
20	18'	32'	40'
24	16'	29'	38'
30	13'	23'	31'
36	13'	22'	30'
42	13'	21'	29'
48	13'	19'	27'
54	13'	19'	27'

PVC, AWWA C900 & C905, DR18

Pipe Diameter (inches)	Class P-1 Bedding	Class P-2 Bedding	Class P-3 Bedding
4	19'	23'	40'
6	19'	23'	40'
8	19'	23'	40'
10	19'	23'	40'
12	19'	23'	40'
14	19'	23'	40'
16	19'	23'	40'
18	19'	23'	40'
20	19'	23'	40'
24	19'	23'	40'

(1) Place remainder of bedding and backfill material as specified in the contract documents.

Key

OD = Outside diameter of pipe

TW = Trench width at top of pipe:
Min. = OD+18 inches OR 1.25xOD+12 inches (whichever is greater)

d = Depth of bedding material below pipe:
Min. = OD/8 OR 4 inches (whichever is greater)

(2) PRESSURE PIPE TRENCH BEDDING

NO.	REVISION	BY	DATE	NO.	REVISION	BY	DATE

CGA Clapsaddle-Garber Associates, Inc
16 East Main Street
Marshalltown, Iowa 50158
Ph 641-752-6701
www.cgaconsultants.com

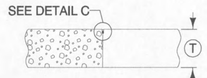
DESIGNED: AJI DATE: 12-11-2015
DRAWN: RWA DATE: 12-11-2015
CHECKED: AJI DATE: 12-11-2015
APPROVED: ACD DATE: 12-11-2015

MENARDS SITE IMPROVEMENTS
ANKENY, IOWA

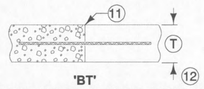
PLAN

PROJECT NO. 5562.04A
SHEET NO. C.501

J:\5562\dwg\Sheets\Ankeny\5562a-C.501 - Details.dwg - C.501 - 09-13-16 - 1:58pm - bjg293

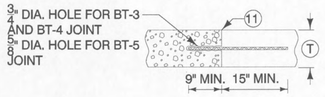


'B'
PLAIN JOINT
(ABUTTING DISSIMILAR PAVEMENT SLABS)



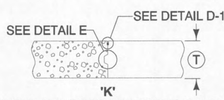
'BT'
ABUTTING PAVEMENT JOINT - RIGID TIE

(T)	JOINT	BARS	BAR LENGTH AND SPACING
< 8"	'BT-1'	#4	36" LONG AT 30" CENTERS
≥ 8"	'BT-2'	#5	36" LONG AT 30" CENTERS

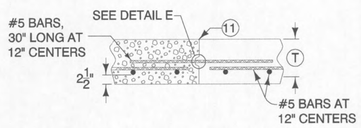


'BT'
ABUTTING PAVEMENT JOINT - RIGID TIE (DRILLED)

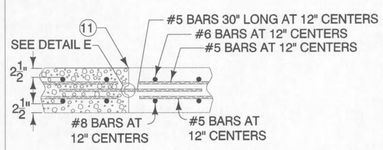
(T)	JOINT	BARS	BAR LENGTH AND SPACING
< 8"	'BT-5'	#4	24" LONG AT 30" CENTERS
≥ 8"	'BT-3'	#5	24" LONG AT 30" CENTERS
	'BT-4'		24" LONG AT 15" CENTERS



'K'
KEYED JOINT FOR ADJACENT SLABS
(WHERE T IS 8" OR MORE)

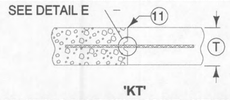


'KS-1'
[SINGLE REINFORCED PAVEMENT (BRIDGE APPROACH)]



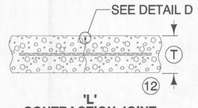
'KS-2'
[DOUBLE REINFORCED PAVEMENT (BRIDGE APPROACH)]

LONGITUDINAL CONTRACTION JOINTS



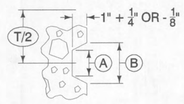
'KT'
ABUTTING PAVEMENT JOINT - KEYWAY TIE

(T)	JOINT	BARS	BAR LENGTH AND SPACING
< 8"	'KT-1'	#4	30" LONG AT 30" CENTERS
≥ 8"	'KT-2'	#5	30" LONG AT 30" CENTERS
	'KT-3'		30" LONG AT 15" CENTERS



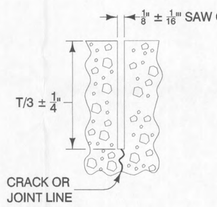
'L'
CONTRACTION JOINT

(T)	JOINT	BARS	BAR LENGTH AND SPACING
< 8"	'L-1'	#4	36" LONG AT 30" CENTERS
≥ 8"	'L-2'	#5	36" LONG AT 30" CENTERS
	'L-3'		36" LONG AT 15" CENTERS

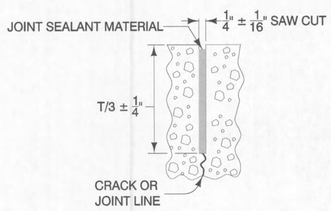


DETAIL E

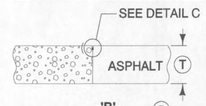
KEYWAY DIMENSIONS			
KEYWAY TYPE	PAVEMENT THICKNESS (T)	(A)	(B)
STANDARD	8" OR GREATER	1 3/4"	2 3/4"
NARROW	LESS THAN 8"	1"	2"



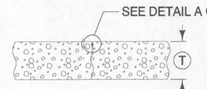
DETAIL D-1
(REQUIRED WHEN THE DEPARTMENT OF TRANSPORTATION IS THE CONTRACTING AUTHORITY, OR WHEN SPECIFIED IN THE CONTRACT DOCUMENTS.)



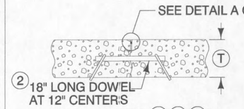
DETAIL D-2
(REQUIRED WHEN THE DEPARTMENT OF TRANSPORTATION IS THE CONTRACTING AUTHORITY, OR WHEN SPECIFIED IN THE CONTRACT DOCUMENTS.)



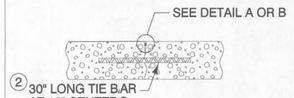
'B' 5
PLAIN JOINT
(ABUTTING DISSIMILAR PAVEMENT SLABS)



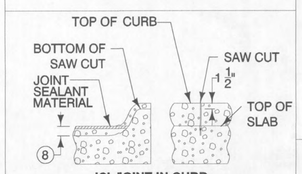
'C' 6
CONTRACTION JOINT



"CD' 1 4 6
DOWELED CONTRACTION JOINT

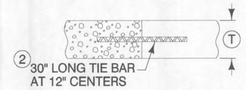


'CT' 4
TIED CONTRACTION JOINT

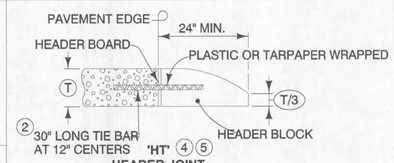


'C' JOINT IN CURB
(MATCH 'CT', 'CD', OR 'C' JOINT IN PAVEMENT.)

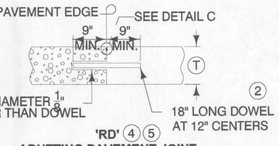
BAR SIZE TABLE		
(T)	DOWEL DIAMETER	TIE BAR SIZE
< 8"	3/4"	#6
≥ 8"	1 1/4"	#10



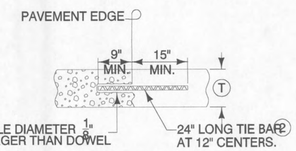
'DW' 3 4 7
DAY'S WORK JOINT(NON-WORKING)



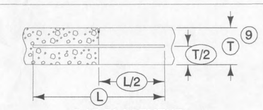
'HT' 4 5
HEADER JOINT
(END RIGID PAVEMENT)



'RD' 4 5
ABUTTING PAVEMENT JOINT

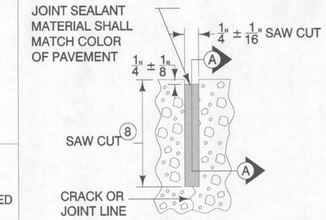


'RT' 4
ABUTTING PAVEMENT JOINT
RIGID TIE

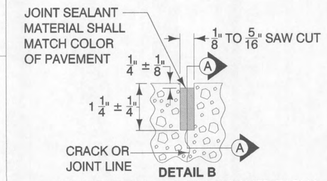


BAR PLACEMENT
(APPLIES TO ALL JOINTS UNLESS OTHERWISE DETAILED.)

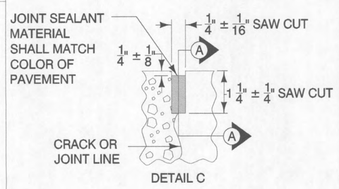
TRANSVERSE CONTRACTION JOINTS



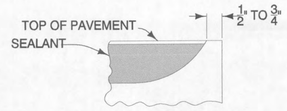
DETAIL A
(SAW CUT FORMED BY CONVENTIONAL CONCRETE SAWING EQUIPMENT.)



DETAIL B
(SAW CUT FORMED BY APPROVED EARLY CONCRETE SAWING EQUIPMENT.)



DETAIL C



SECTION A-A
(DETAIL AT EDGE OF PAVEMENT)

NO.	REVISION	BY	DATE	NO.	REVISION	BY	DATE

CGA
Clapsaddle-Garber Associates, Inc
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Ph 641-752-6701
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DESIGNED: AJI DATE: 12-11-2015
DRAWN: RWA DATE: 12-11-2015
CHECKED: AJI DATE: 12-11-2015
APPROVED: ACD DATE: 12-11-2015

MENARDS SITE IMPROVEMENTS
ANKENY, IOWA

PLAN

PROJECT NO. 5562.04A
SHEET NO. C.502

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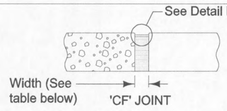
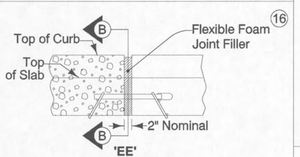
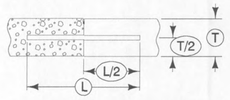
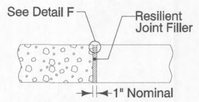


TYPE	WIDTH
CF-1	2"
CF-2	$2\frac{1}{2}$"
CF-3	3"
CF-4	$3\frac{1}{2}$"

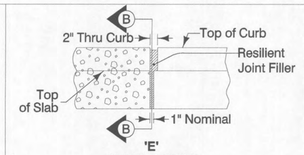




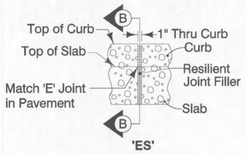
DOWEL PLACEMENT
(Applies to all joints unless otherwise detailed.)



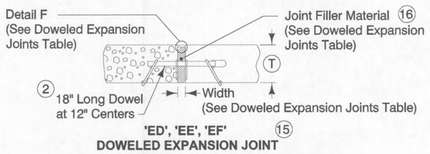
'E'
1" EXPANSION JOINT



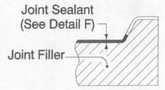
'E'
JOINT IN CURB
(View at Back of Curb)



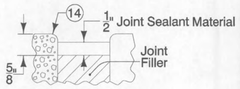
'ES'
JOINT IN CURB
(View at Back of Curb)



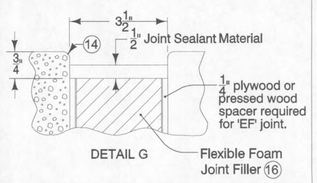
'ED', 'EE', 'EF'
DOWELED EXPANSION JOINT



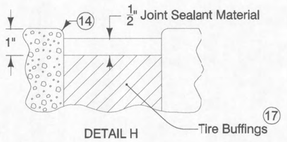
SECTION B-B



DETAIL F



DETAIL G



DETAIL H

DOWELED EXPANSION JOINTS		
TYPE	WIDTH	FILLER MATERIAL 16
ED	1"	Resilient (Detail F)
EE	2"	Flexible Foam (Detail F)
EF	$3\frac{1}{2}$"	Flexible Foam (Detail G)

BAR SIZE TABLE			
T	< 8"	≥ 8" but < 10"	≥ 10"
Dowel Diameter	$\frac{3}{4}$"	$1\frac{1}{4}$"	$1\frac{1}{2}$"

EXPANSION JOINTS

NOTES:

1. PAVEMENT JOINT TYPES ARE DEPENDENT UPON POUR SEQUENCE.
2. JOINTS SHALL BE A MINIMUM OF 2' IN LENGTH AND HAVE AN ANGLE OF 70° OR MORE.
3. MAXIMUM JOINT SPACING IS AS FOLLOWS:
   TRANSVERSE = 15'
   LONGITUDINAL = 12.5'

(1) SEE DOWEL ASSEMBLIES FOR FABRICATION DETAILS.

(2) SEE BAR SIZE TABLE.

(3) LOCATE 'DW' JOINT AT A MID-PANEL LOCATION BETWEEN FUTURE 'C' OR 'CD' JOINTS. PLACE NO CLOSER THAN 5 FEET TO A 'C' OR 'CD' JOINT.

(4) PLACE BARS WITHIN THE LIMITS SHOWN UNDER DOWEL ASSEMBLIES.

(5) EDGE WITH 1/4 INCH TOOL FOR LENGTH OF JOINT INDICATED IF FORMED; EDGING NOT REQUIRED WHEN CUT WITH DIAMOND BLADE SAW. REMOVE HEADER BLOCK AND BOARD WHEN SECOND SLAB IS PLACED.

(6) UNLESS OTHERWISE SPECIFIED, USE 'CD' TRANSVERSE CONTRACTION JOINTS IN MAINLINE PAVEMENT WHEN (T) IS GREATER OR EQUAL TO 8 INCHES. USE 'C' JOINTS WHEN (T) IS LESS THAN 8 INCHES.

(7) 'RT' JOINT MAY BE USED IN LIEU OF 'DW' JOINT AT THE END OF THE DAYS WORK. REMOVE ANY PAVEMENT DAMAGED DUE TO THE DRILLING AT NO ADDITIONAL COST TO THE CONTRACTING AUTHORITY.

(8) SAW 'CD' JOINT TO A DEPTH OF T/3 ± 1/4"; SAW 'C' JOINT TO A DEPTH OF T/4 ± 1/4".

(9) WHEN TYING INTO OLD PAVEMENT, (T) REPRESENTS THE DEPTH OF SOUND PCC.

(10) BAR SUPPORTS MAY BE NECESSARY FOR FIXED FORM PAVING TO ENSURE THE BAR REMAINS IN A HORIZONTAL POSITION IN THE PLASTIC CONCRETE.

(11) SAWING OR SEALING OF JOINT NOT REQUIRED.

(12) THE FOLLOWING JOINTS ARE INTERCHANGEABLE, SUBJECT TO THE POURING SEQUENCE:
   'BT-1', 'L-1', AND 'KT-1'
   'KT-2' AND 'L-2'
   'KT-3' AND 'L-3'

(13) SEALANT OR CLEANING NOT REQUIRED.

(14) EDGE WITH 1/4 INCH TOOL FOR LENGTH OF JOINT INDICATED IF FORMED; EDGING NOT REQUIRED WHEN CUT WITH DIAMOND BLADE SAW.

(15) SEE DOWEL ASSEMBLIES FOR FABRICATION DETAILS AND PLACEMENT LIMITS. COAT THE FREE END OF DOWEL BAR TO PREVENT BOND WITH PAVEMENT. AT INTAKE LOCATIONS, DOWEL BARS MAY BE CAST-IN-PLACE.

(16) PREDRILL OR PREFORM HOLES IN JOINT MATERIAL FOR APPROPRIATE DOWEL SIZE.

(17) COMPACT TIRE BUFFINGS BY SPADING WITH A SQUARE-NOSE SHOVEL.

	Type			Method of Load Transfer				Thermal movement				
Joint	Transverse	Longitudinal	Expansion	Aggregate Interlock	Key	Tie Bar	Dowel Bar	Doweled to allow movement	Tied to prevent movement	Expansion joint allows movement	Lack of reinforcing allows movement	Comments
B	X	X									X	Used between dissimilar materials or when other joints are not suitable.
C	X			X							X	Transverse joint used when T < 8 in. May also be used on non-primary routes if AADIT < 200 vpd.
CD	X			X			X	X				Transverse joint used when T ≥ 8 in. Use C joint when joint length is 2 ft.
CT	X			X		X			X			Speciality tied contraction jointt.
DW	X					X			X			Used by contractor as a stopping point.
HT	X					X			X			Used at the end of rigid pavement prior to placement of second slab.
RD	X						X	X				Joint between new and existing pavements, dowels are used.
RT	X					X			X			Joint between new and existing pavements, tie bars are used.
BT-1		X							X			Longitudinal joint used when T < 8 in, interchangeable with L-1 depending on paving sequence.
BT-2		X							X			Used when L-2 and the KT-2 are not possible, T ≥ 8 in.
BT-3		X							X			Joint used between new and existing pavements. Tie bars are used when T ≥ 8 in.
BT-4		X							X			Joint used between new and existing pavements. Tie bars are used when T ≥ 8 in.
BT-5		X							X			Joint used between new and existing pavements. Tie bars are used when T < 8 in.
K		X			X						X	T > 8 in. minimal usage.
KS		X			X				X			Used in reinforced pavements.
KT-1		X			X				X			Longitudinal joint used when T < 8 in, interchangeable with L-1 depending on paving sequence.
KT-2		X			X				X			Longitudinal joint used when T < 8 in, interchangeable with L-2 depending on paving sequence.
KT-3		X			X				X			Longitudinal joint used when T < 8 in, interchangeable with L-3 depending on paving sequence.
L-1		X		X					X			Longitudinal Joint used when T < 8 in, interchangeable with BT-1.
L-2		X		X					X			Longitudinal joint used when T ≥ 8 in, interchangeable with KT-2 depending on paving sequence.
L-3		X		X					X			Longitudinal joint used with pavement of large width, interchangeable with KT-3 depending on paving sequence.
CF	X		X							X		4 in expansion joint.
E	X	X	X							X		1 in expansion joint.
E	X		X				X	X		X		1 in doweled expansion joint.
EE	X		X				X	X		X		2 in doweled expansion joint.
EF	X		X				X	X		X		4 in doweled expansion joint
ES			X							X		Used in curb to match expansion joint in pavement.

NO.	REVISION	BY	DATE	NO.	REVISION	BY	DATE

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CHECKED: AJI DATE: 12-11-2015
APPROVED: ACD DATE: 12-11-2015

MENARDS SITE IMPROVEMENTS
ANKENY, IOWA

PLAN

PROJECT NO. 5562.04A
SHEET NO. C.503

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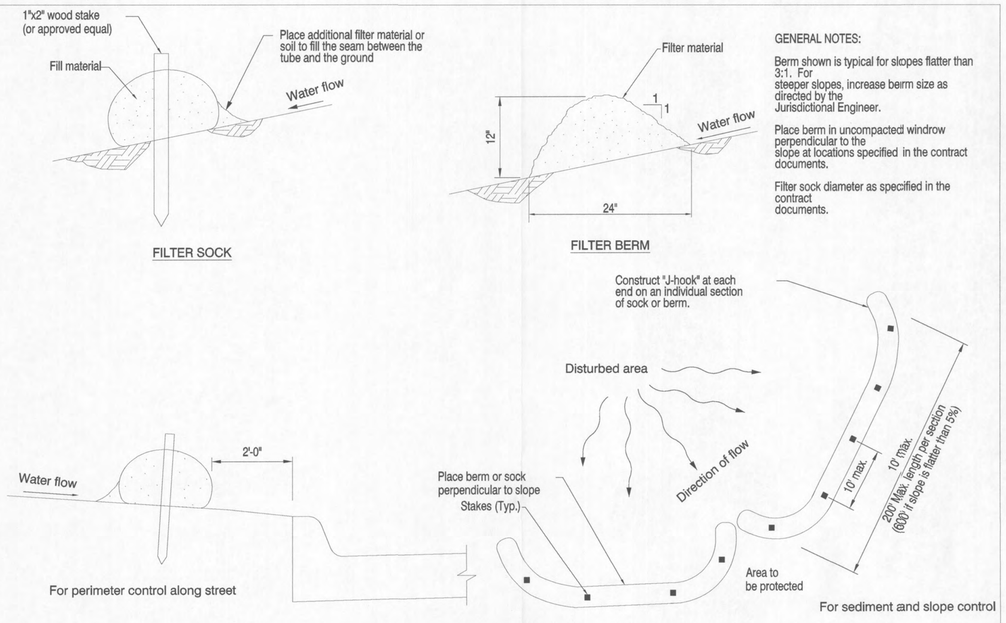
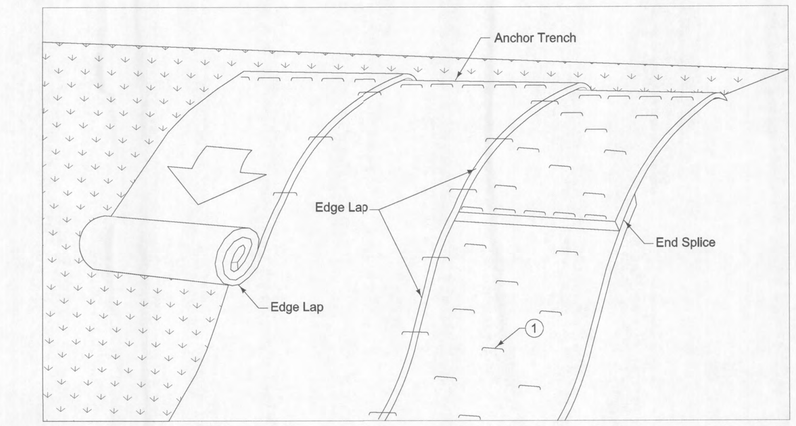


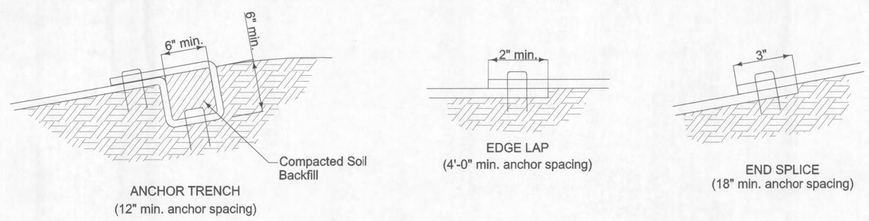
1 TYPICAL PLACEMENT OF FILTER BERM OR FILTER SOCK



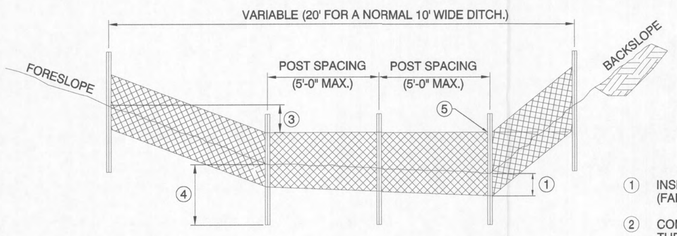
1 Secure blanket to ground according to manufacturer's recommended anchoring pattern and minimum shown in Table 1.

TABLE 1

Max. slope	Min. anchors
= 3:1	1.5/yd²
2:1	2/yd²
1:1	2.5/yd²



2 ROLLED EROSION CONTROL PRODUCT

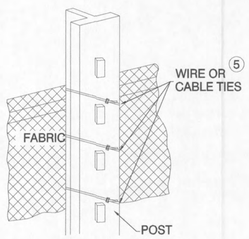


TYPICAL SILT FENCE DITCH CHECK

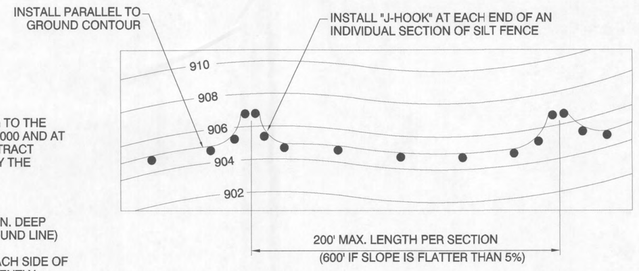
GENERAL NOTES:

INSTALL SILT FENCE ACCORDING TO THE REQUIREMENTS OF SECTION 311000 AND AT LOCATIONS SHOWN IN THE CONTRACT DOCUMENTS OR AS DIRECTED BY THE JURISDICTIONAL ENGINEER.

1. INSERT 12 IN. OF FABRIC A MINIMUM OF 6 IN. DEEP (FABRIC MAY BE FOLDED BELOW THE GROUND LINE)
2. COMPACT GROUND BY DRIVING ALONG EACH SIDE OF THE SILT FENCE AS REQUIRED TO SUFFICIENTLY SECURE THE FABRIC IN THE TRENCH TO PREVENT PULLOUT AND FLOW UNDER THE FENCE.
3. IN DITCHES, EXTEND SILT FENCE UP SIDE SLOPE SO THE BOTTOM ELEVATION AT THE END OF THE FENCE IS A MINIMUM OF 2 IN. HIGHER THAN THE TOP OF THE FENCE IN THE LOW POINT OF THE DITCH.
4. STEEL POSTS TO BE EMBEDDED 20 IN. UNLESS OTHERWISE ALLOWED BY THE JURISDICTIONAL ENGINEER.
5. SECURE TOP OF ENGINEERING FABRIC TO STEEL POSTS USING WIRE OR PLASTIC TIES (50 LB. MIN.). SEE DETAILS OF "ATTACHMENT TO POSTS."

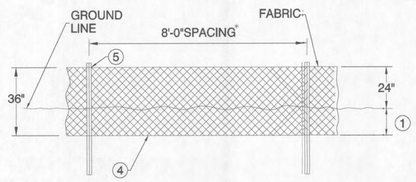


ATTACHMENT TO POST



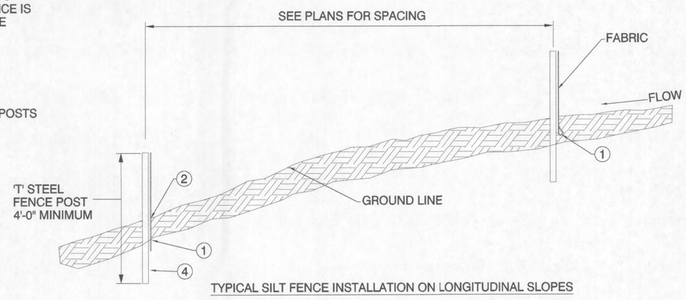
TYPICAL SILT FENCE INSTALLATION ON LONGITUDINAL SLOPES

(PLAN VIEW)



DETAILS OF SILT FENCE ON LONGITUDINAL SLOPES

* REDUCE POST SPACING TO 5'-0" AT WATER CONCENTRATION AREAS, OR AS REQUIRED TO ADEQUATELY SUPPORT FENCE



TYPICAL SILT FENCE INSTALLATION ON LONGITUDINAL SLOPES

(Profile View)

3 SILT FENCE

NO.	REVISION	BY	DATE	NO.	REVISION	BY	DATE

CGA

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APPROVED:	ACD	DATE:	12-11-2015

MENARDS SITE IMPROVEMENTS
ANKENY, IOWA

PLAN

PROJECT NO. 5562.04A

SHEET NO. C.504

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