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CHRISTIAN BROTHERS AUTOMOTIVE

1315 N ANKENY BLVD
ANKENY, IOWA
Lot 1, Highway 69 Plat 1
Zoned C2

Site Plan Drawing Checklist

Preapplication Conference ☐ held on _____ ☐ scheduled for _____ ☐ not held
Final Plat approval ☐ Plan & Zoning Commission ☐ City Council ☐ not required

The following is the required information as set forth in Section 192.02 (4) of the Ankeny Municipal Zoning Code. Paper copies on sheets not to exceed 24" x 36".

1. ☐ Name, address, and phone number of the following:
   - ☐ Applicant (s)
   - ☐ Property Owner(s)
   - ☐ Person or firm preparing the site plan
2. ☐ Property address(es)
3. ☐ Date of preparation
4. ☐ North Arrow
5. ☐ Scale – not to exceed 1"=100'
6. ☐ Legal Description
7. ☐ Vicinity map at 1" = 500' or larger showing general location of property
8. ☐ Plat or Survey
9. ☐ References, location, and description of survey monument found
10. ☐ All property and street placement lines and grades
11. ☐ Dimensions of the present lot and lot area
12. ☐ Lot numbers
13. ☐ I.D. and ownership of adjacent land
14. ☐ Lot survey, where possible ownership or boundary problems exist
15. ☐ Existing and proposed zoning designation of the property and adjoining properties
16. ☐ Existing and proposed buildings, additions, and structures including:
    - ☐ Size and location
    - ☐ Number of building(s)
    - ☐ Type of building(s)
    - ☐ Required building setback lines and dimensions from proposed building(s)
    - ☐ Site improvements to lot lines
    - ☐ Number of dwelling units
    - ☐ Proposed use for each building (to determine code compliance)
    - ☐ Total floor area of each building
    - ☐ Exact exterior dimensions of each building
    - ☐ Location of entrances
    - ☐ Square footage of each type of use
17. ☐ Two (2) exterior elevation views and floor plans of proposed buildings showing:
    - ☐ Location and shape
    - ☐ Materials and building color
    - ☐ Location of windows, doors, overhangs, projection height, etc.
    - ☐ Grade relationship to floor elevation
    - ☐ Number of stories
    - ☐ All freestanding, ground, and building signs
18. ☐ Streets
    - ☐ Location of adjacent public street, private drives, and intersections
    - ☐ Dimensions of existing, adjacent, and proposed street widths
    - ☐ Street names
19. ☐ Right-of-way (ROW) width dimensions
20. ☐ Existing and proposed easements, including sizes
21. ☐ Existing and proposed utility lines, including sizes and public/private designation
22. ☐ Fire hydrant locations & hydrant coverage map
23. ☐ Stormwater detention calculations and areas
24. ☐ Location, grade, and dimension of existing and proposed paved areas and of all abutting streets
25. ☐ Parking calculations including:
    - ☐ Proposed building use
    - ☐ Building square footage
    - ☐ Required and proposed number of off-street parking spaces
    - ☐ Maximum number of employees, customers, and office vehicles
26. ☐ Proposed ingress and egress to the site including:
    - ☐ Sidewalks
    - ☐ Parking area(s)
    - ☐ Parking stalls (regular and handicapped)
    - ☐ Adjacent streets
27. ☐ Traffic flow and control measures
28. ☐ Existing and proposed contours (minimum of 2' intervals and if there is less than 2% slope, use 1' contours or spot elevations)
29. ☐ Permanent improvements including sidewalks, bike paths, loading area, dividers, planters, etc.
30. ☐ Location and type of buffers or screening for:
    - ☐ Property boundaries
    - ☐ Parking areas
    - ☐ ~~Outdoor storage and~~ trash/recycling bins
    - ☐ Large storm water detention areas
31. ☐ Existing and proposed yard and building signage: Signage Plan provided in separate section of submittal.
    - ☐ Location
    - ☐ Type
    - ☐ Elevation
    - ☐ Dimensions
    - ☐ Colors
    - ☐ Materials
    - ☐ Wind stress calculations
32. ☐ Location and type of existing or proposed lighting (site lighting and street lights) – lighting to be directed to eliminate impacts on adjoining sights using proper amount of illumination — Proposed Lighting Plan Provided
33. ☐ Landscaping plan including: Landscape Plan provided in separate section of submittal.
    - ☐ Location of open space(s) including screening and shading calculations
    - ☐ Location of existing trees six inches or larger in diameter
    - ☐ Location, amount, and type of any proposed landscaping, planting, fences, walls, etc.
    - ☐ Planting schedule
    - ☐ Natural features
    - ☐ Floodplain and landslide areas
    - ☐ Springs, streams, and other bodies of water
    - ☐ Area(s) subject to flooding by 100 year storm
34. ☐ Soils test and similar information (if deemed necessary by the by the City Engineer)

Parking Information

City of Ankeny, Iowa Municipal Code
Chapter 194, Zoning Ordinance Parking, Loading and Screening
Section 194.01 (E) - Motor vehicle repair and maintenance not including substantial body work: Parking Requirement = 1 space per 200 square feet of gross floor area.

Total Parking Required = 25.285
Regular Parking Stalls = 30
HC Parking Stalls = 2
Total Parking Provided = 32
Building = 5057 Sq Ft
Parking Ratio Required = 1 Space per 200 Sq Feet
Parking Ratio Provided = 1 space per 158 Sq Feet

Equivalent Residential Unit (ERU) Calculation

ATI = Total Area of Impervious Surfaces (SQ FT).
= 26,242.94 SQ FT

1 ERU = 4,000 SQ FT of Impervious Surfaces

ATI x 1ERU / 4,000 SQ FT =

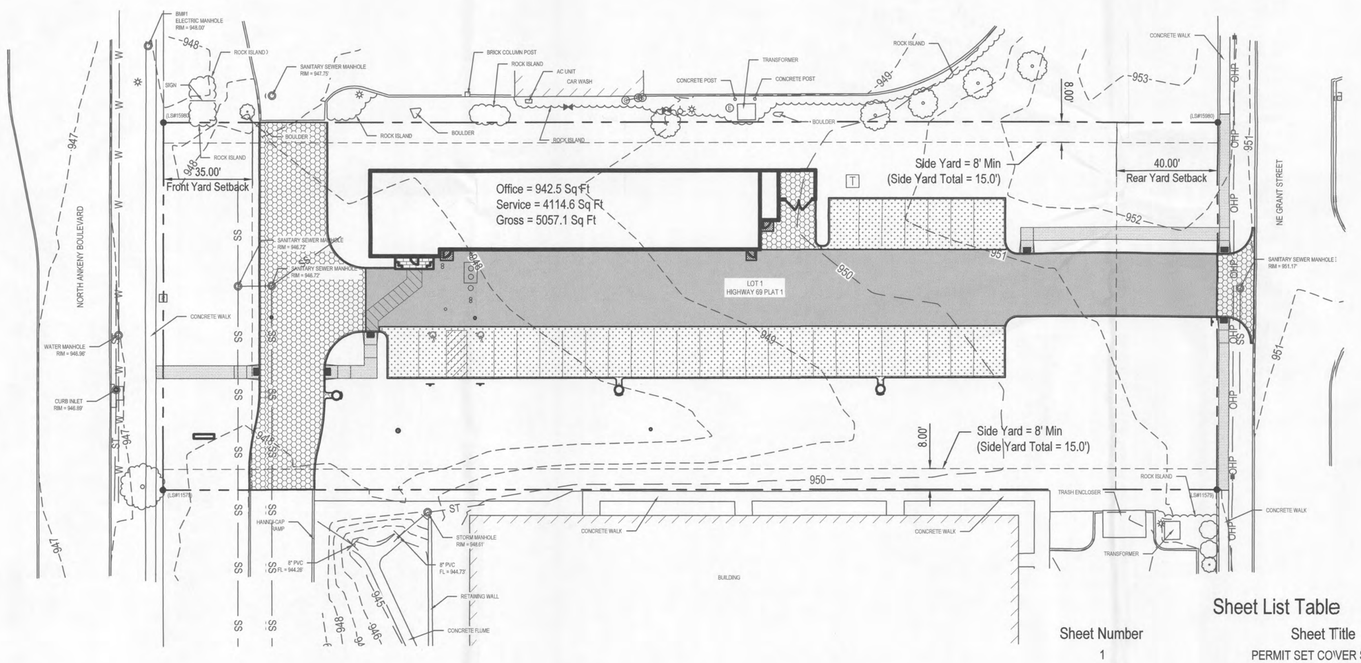
26,424.94 SG FT x 1 ERU / 4,000 SQ FT

= 6.65 ERU

USE 7.0 ERU

30 0 30
1 inch = 30 ft.

VICINITY MIAP
ANKENY , IOWA
(Not to Scale)



Applicant:
Christian Brothers Automotive
17725 Katy Freeway
Katy, TX 77094
Contact: Curtis Cain
ccain@cbac.com
Office: 281-765-6105, Cell: 832-971-1123

Owner:
Splash Enterprises, L.C.
P.O. Box 557
Ankeny, IA 50021
Contact: Jack Stapleton
jwrstapleton@ssequ.pment.com
T: 515-965-1501, F: 515-965-1503

Coordinating Professional:
E & A Consulting Group, Inc.
10909 Mill Valley Road, Suite 100
Omaha, NE 68154
Contact: Paul Gonzales
pgonzales@eacg.com,
T: 402-895-4700, F: 402-895-3599

LICENSED PROFESSIONAL ENGINEER
PAUL J. GONZALES
No. 19589
IOWA

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

Paul J. Gonzales 1-23-2017
Date

My license renewal date is December 31, 2018

Pages or sheets covered by this seal:
SHEETS 1 THROUGH 9

Sheet List Table

Sheet Number	Sheet Title
1	PERMIT SET COVER SHEET
2	TOPO SURVEY
3	SITE PAVING AND ILAYOUT PLAN
4	SITE UTILITY PLAN
5	FIRE COVERAGE
6	SITE GRADING PLAN
7	NOTES AND DETAILS
8	STORM WATER POLLUTION PREVEINTION PLAN MAP (SWPPP-SM)
9	STORM WATER POLLUTION PREVEINTION PLAN NOTES (SWPPP-N)
10	LIGHTING PHOTOMETRIC PLAN
11	PLANTING PLAN
12	PLANTING PLAN
13	ARCHITECTURAL ELEVATIONS
14	ARCHITECTURAL ELEVATIONS

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ANKENY, IOWA

PERMIT SET COVER SHEET

REVISED SITE PLANS
NOT FOR CONSTRUCTION

Revisions		
No.	Date	Description

Proj No:	P2016.473.002
Date:	1/23/2016
Designed By:	PJG
Drawn By:	BJW
Scale:	20
Sheet:	1 of 8

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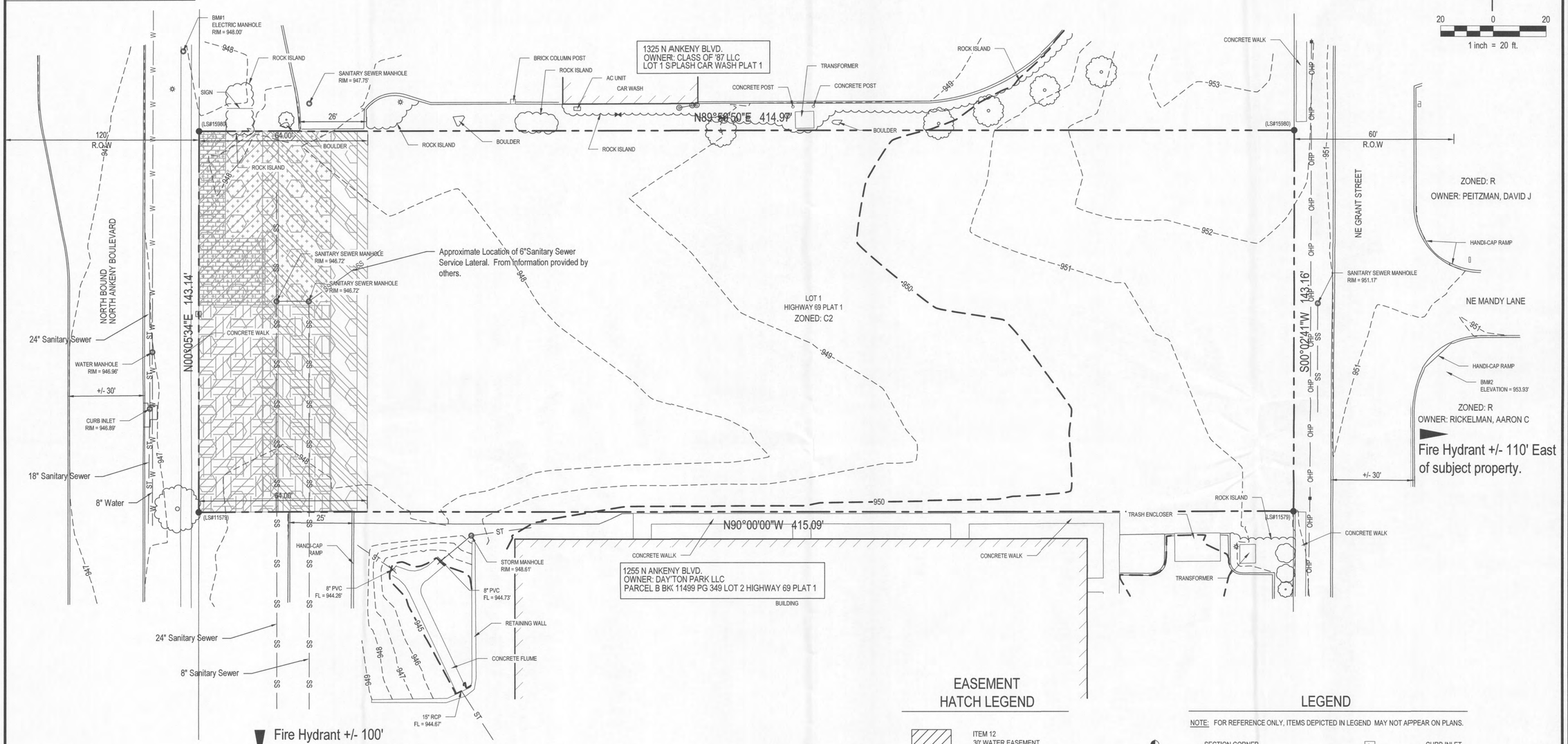
Fire Hydrant +/- 165'
North of subject property.



EASEMENT HATCH LEGEND

- ITEM 12 — 30' WATER EASEMENT FROM PLAT
- ITEM 12 — 60' SANITARY EASEMENT FROM PLAT
- ITEM 12 — 40' INGRESS-EGGRESS EASEMENT FROM PLAT
- ITEM 13 — SANITARY EASEMENT BOOK 5262, PAGE 128.
- ITEM 14 — SANITARY EASEMENT BOOK 5262, PAGE 137.
- ITEM 15 — WATER EASEMENT BOOK 6539, PAGE 201.

LEGEND

NOTE: FOR REFERENCE ONLY, ITEMS DEPICTED IN LEGEND MAY NOT APPEAR ON PLANS.

SECTION CORNER	CURB INLET
5/8" REBAR SET	UTILITY VALVE (GAS)
PINS FOUND (AS NOTED)	SIGN
BUILDING	— X — X — FENCE LINE
POWER RISER	— G — G — GAS LINE
POWER POLE	— W — W — WATER LINE
GUY WIRE	— OHP — OHP — POWER LINE (OVERHEAD)
LIGHT POLE	— UGP — UGP — POWER LINE (UNDER GROUND)
TELEPHONE RISER	— UTV — UTV — COMMUNICATION LINE (TELEPHONE, TV)
CABLE TV RISER	— SS — SS — SANITARY SEWER LINE
FIRE HYDRANT	— ST — ST — STORM SEWER LINE
UTILITY VALVE (WATER)	— FO — FO — FIBER OPTICS LINE
MANHOLE	BUSH
FLARED END SECTION (SIZE NOTED)	DECIDUOUS TREE

BENCHMARKS:

BM#1 NORTH RIM ELECTRIC MANHOLE IN SIDEWALK NORTH AND WEST OF THE NORTHWEST CORNER OF LOT 1.
ELEVATION = 953.93'

BM#2 NORTH-NORTHWEST BOLT ON FIRE HYDRANT AT THE SOUTHEAST CORNER OF INTERSECTION OF GRANT STREET AND NE MANDY LANE.
ELEVATION = 948.00'

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TOPO SURVEY

REVISED SITE PLANS
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Sheet:	2 of 10

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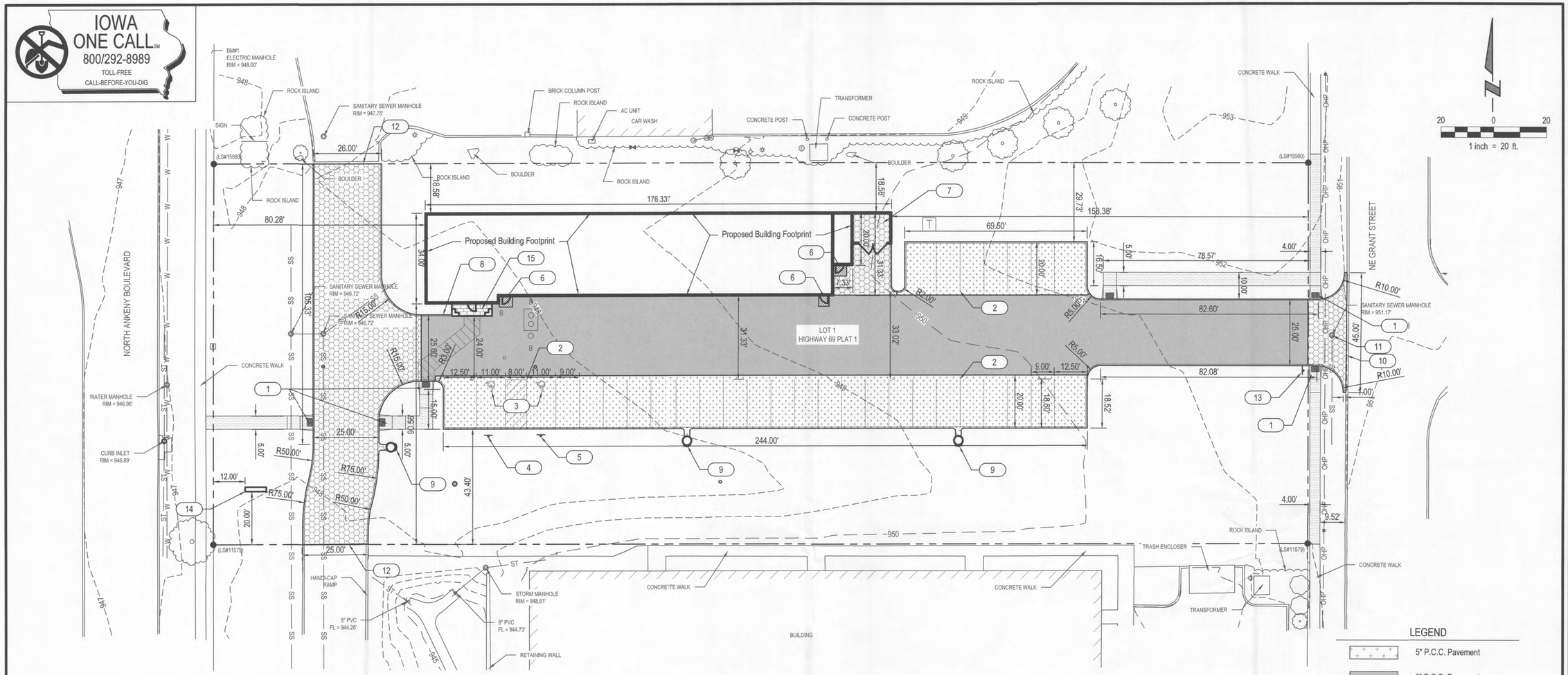
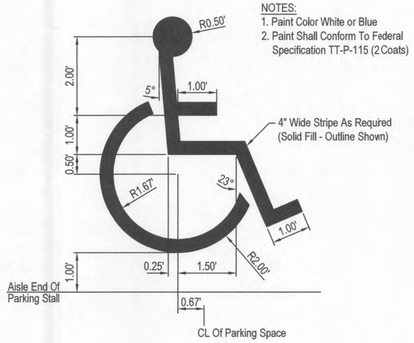


PAVEMENT CONSTRUCTION NOTES

1. Pavement subgrade shall be prepared and compacted in accordance with Statewide Urban Design and Specifications (SUDAS).
2. Concrete for the pavement slab shall be Iowa DOT Class C or Class M air-entrained concrete in accordance with the Statewide Urban Design and Specifications (SUDAS) unless otherwise shown on plans.
3. All integral curbs shall be 6" Standard Curb in accordance with SUDAS OCC Curb Details, Figure 7010.102, unless otherwise shown on plans.
4. Water-reducing admixture shall be added to all hand-placed and finished concrete.
5. Paving widths shall be as shown on plans. All dimensions shown are back of curb to back of curb.
6. A diamond edge saw blade shall be used for cutting all required contraction and longitudinal pavement joints.
7. The CONTRACTOR shall construct, with the INSPECTORS assurance of conformity, ADA compliant curb ramps at all intersection returns where new sidewalk is constructed, as well as where existing sidewalk has been removed. Detectable Warnings shall be placed as identified in SUDAS Detail 7030.210.
8. Within one (1) hour the concrete pavement shall be cured using a white pigmented liquid membrane-forming curing compound that has been approved by the State of Iowa Department of Transportation (Iowa DOT). Apply liquid membrane-forming curing compound at the concentration and application rate recommended by the manufacturer.
9. Subgrade Preparation includes the adjustment of the subgrade under all areas to be surfaced including driveways, intersections, and the area 48 inches beyond the longitudinal edges of the pavement or the backs of curbs for proper placing of the pavement slab. The Contractor shall scarify and recompact the subgrade to a depth of one foot. The top 12" of subgrade as described shall be compacted to 90% maximum dry density as determined in accordance with the most current edition of ASTM D1557 (Modified Method) with moisture limits of -3% to +4% optimum.
10. All intersections shall be warped as directed by the Engineer in the field to ensure positive drainage.
11. Thickened Edges are required at locations where proposed paving ties into existing paving.
12. All pavement removals shall be sawcut. Pavement shall be removed in complete panels. Pavement removal limits may be adjusted in the field to match existing joints.
13. Furnish and Install expansion joint material and sealers to isolate all structures abutting pavement and where otherwise identified on the plans. Iowa DOT article 4136.03.
14. All Joints shall be sealed. Joint sealant shall be in conformance with Iowa DOT Standards and Specifications, article 4136.02
15. Contractor Shall provide a pavement jointing plan to Engineer (E&A) for review a minimum of 10 days prior to concrete placement.
16. Concrete Panels shall not exceed a maximum dimension of 24 times the thickness of the concrete. Panels shall be kept as square as possible. Joints shall be perpendicular to edges and radii and shall no form angles less than 45 degrees over 225 degrees.



DISABLED SYMBOL STENCIL DETAIL

NOT TO SCALE

LEGEND

- 5" P.C.C. Pavement
- 6" P.C.C. Pavement
- 7" P.C.C. Pavement
- 4" Stamped Colored Concrete. Coordinate Color and Design with owner.
- 4" P.C.C. Sidewalk

BUILD NOTES - LAYOUT

1. Sidewalk Ramp. See SUDAS Standard Detail 7030.206.
2. Painted Parking Striping, 4" Wide, Color: White, TYP.
3. Painted Handicap Symbol, TYP. See detail on Sheet 6 of 10.
4. Handicap Sign, See Detail on Sheet 6 of 10.
5. Van Accessible Handicap Sign, See Detail on Sheet 6 of 10.
6. Structural Stoop - See Architectural Plans
7. Trash Enclosure. See Architectural Plan for Details.
8. Taper Curb from 6" Height to 0" Height over 5 LF
9. Drainage Structure. Refer to Utility Plan, Sheet 4 of 10.
10. No Lugout of Existing Street. See SUDAS Standard Detail 7030-101 Type "A"
11. Manhole Boxout. Adjust manhole to finished grade. See SUDAS Standard Detail 7010-103
12. "RT" Joint. See SUDAS Standard Detail 7010-901
13. Furnish and Install Stop Sign and Post. Sign and Post shall be in compliance with the Manual of Uniform Traffic Control Devices.
14. Monument Sign. See sinage plans for details.
15. Stamped Colored Concrete. Coordinate Color and Design with owner.

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SITE PAVING AND LAYOUT PLAN

REVISED SITE PLANS
NOT FOR CONSTRUCTION

No.	Date	Description
	Date	Description

Revisions

Proj No:	P2016.473.002
Date:	1/23/2016
Designed By:	PJG
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Sheet:	3 of 10

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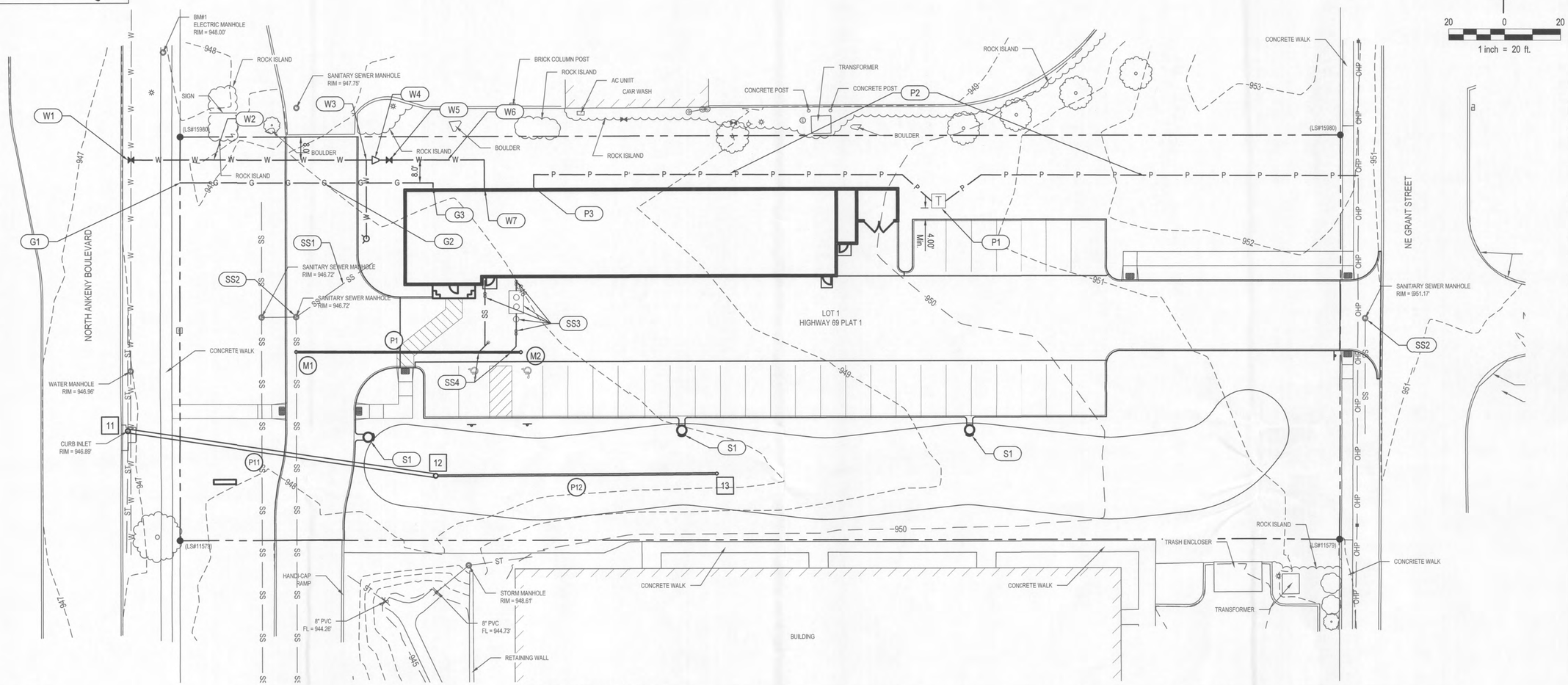

GENERAL WATER NOTES:

1. The work shall be constructed in accordance with the specifications, rules and regulations of the City of Ankeny, IA department of utilities and any current special and technical provisions.
2. Water mains and service lines shall have a minimum cover of 5.5 feet.
3. The horizontal distance between the sewer and water lines shall be 10 feet min. and the vertical distance shall be two feet min. the sanitary sewer shall be D.I.P. 10 feet each side of the water main when the vertical distance is less than 2 feet.
4. Contractor shall maintain all valves at connection points in the fully closed position until chlorination testing and approval of proposed water lines are complete, except that said valves may be opened to fill lines for use in the chlorination process.
5. Type "K" copper water service of the sizes and quantities shown, shall be constructed to all buildings shown of this development in accordance with the specifications and details shown on the plans. the contractor shall record tap and valve locations of each water service installed and provide such records to the owner upon completion of construction.
6. Contractor shall field verify all potential utility line crossing conflicts. contractor shall notify engineer of conflicts and adjust horizontal and vertical alignments of proposed utilities only at the direction of the engineer.

(W) WATER REFERENCE NOTES

W 1 Tap Existing Water Main with 6" Tapping Sleeve and Valve. Coordinate Tap with Local Utility.

W 2 Construct 85 LF of 6" Water Service Line in Accordance with Local Utility Specifications.

W 3 Furnish and install 6"x6"x6" Water Tee.

W 4 Install 6" to 1" Water Reducer

W 5 Furnish and Install 1" Curb Stop Valve

W 6 Construct 53 LF of 1" Water Service Line in Accordance with Local Utility Specifications.

W 7 See Mechanical/ Plumbing Plans for Continuation.

W 8 Construct 28 LF of 6" Water Service Line in Accordance with Local Utility Specifications.

W 9 Furnish and Install Fire Hydrant in Accordance with Local Utility Specifications.

(G) GAS REFERENCE NOTES

G 1 Tap Existing Gas Line. Existing Gas line is adjacent to North Ankeny Blvd. Coordinate with local utility.

G 2 Construct 95 LF of X" Gas Line. (Size of service line to be determined by Mechanical Engineering Consultant).

G 3 See Mechanical/ Plumbing Plans for Continuation.

(SS) STORM REFERENCE NOTES

SS 1 Contractor shall field locate existing sanitary service line. Remove existing service line to sanitary manhole. Plug manhole at removed pipe penetration.

SS 2 Adjust Manhole to Finisthed Grade, adjustment rings may not exceed 18" in height. Adjust internal or external chimney seal as required for manhole adjjustment. SUDAS Figure 6010.306.

SS 3 See Mechanical Plans for Details and Layout of Sand/Oil Separator and associated cleanouts and fittings.

SS 4 6"x6"x6" 45° Wye Fittings

(P) POWER REFERENCE NOTES

P 1 Approximate Transformer Location. Shown for reference only. Refer to Electrical Plans for transformer pad dimensions and details.

P 2 Approximate Power Service Line Location. Shown for reference only. Refer to Electrical Plans for service horizontal and vertical alignment.

P 3 Refer to Electrical Plans for Primary Service Connection Details.

(S) STORM REFERENCE NOTES

S 1 Rain Guardian Turret, See detail on sheet 6 of 10.

CONSTRUCT SANITARY SEWER STRUCTURE

NO.	DESCRIPTION
M1	Tap Existing Sanitary Sewer Pipe, With Wye Fitting See SUDAS Detail 4010.201 Contractor Shall Field Verity Existing Sanitary Sewer and Notiyy Engineer of Findings. Rim = 948.90 FL (6" In) = 943.25
M2	Santiary Sewer Cleanout See Detail on Sheet 6 of 10 Rim = 949.34 FL (6" Out) = 944.50

CONSTRUCT SANITARY SEWER PIPE

ID	Material	Size	Length	Slope	Remarks
P1	HDPE Pipe	6"	80.27	1.56%	

CONSTRUCT STORM SEWER PIPE

ID	START STRUCTURE	END STRUCTURE	Dia.	Length	Slope	Remarks
P11	12	11	12"	111.36	1.35%	
P12	13	12	6"	100.00	0.00%	Perforated Rigid PVC. See Detail on Sheet 6 of 8

CONSTRUCT STORM SEWER STRUCTURE

NO.	DESCRIPTION
11	Tap Existing Storm Sewer Curb Inlet, Contractor shall field verify storm drain inlet invert elevations and notify engineer of findings., Rim = 946.89 FL (12" In) = 942.00
12	18" DIA Nyloplast Riser Structure, See Detail on Sheet 6 of 8, Rim = 948.00 FL (12" Out) = 943.50 FL (6" In) = 944.00
13	6" Subdrain Cleanout Provide Threaded Pipe and Cap 3/4" Opening with 3/4" Opening. See Detail on Sheet 6 of 8, Rim = 948.00 FL (6" Out) = 944.00

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SITE UTILITY PLAN

REVISED SITE PLANS
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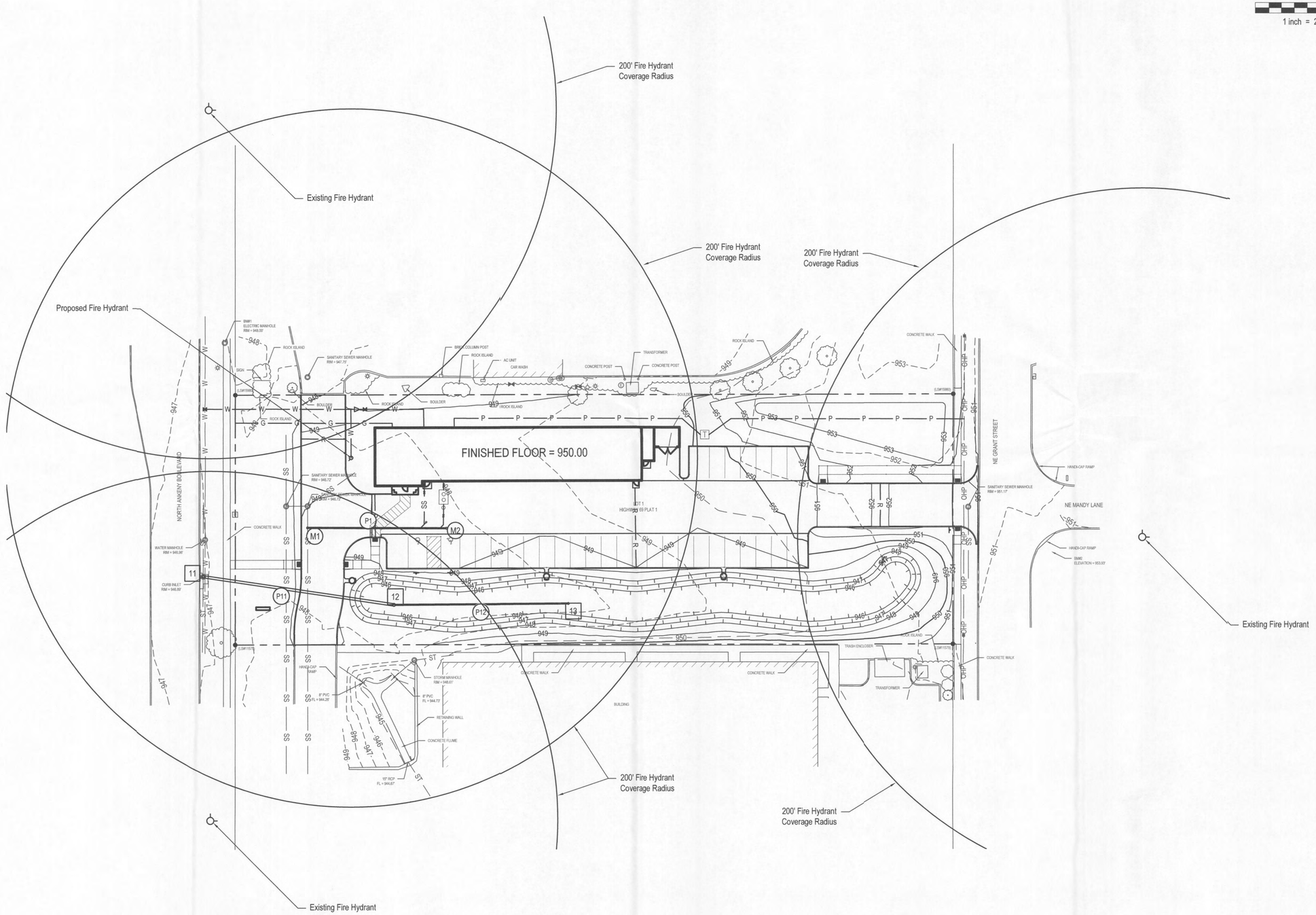

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1 inch = 20 ft.

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FIRE COVERAGE

REVISED SITE PLANS
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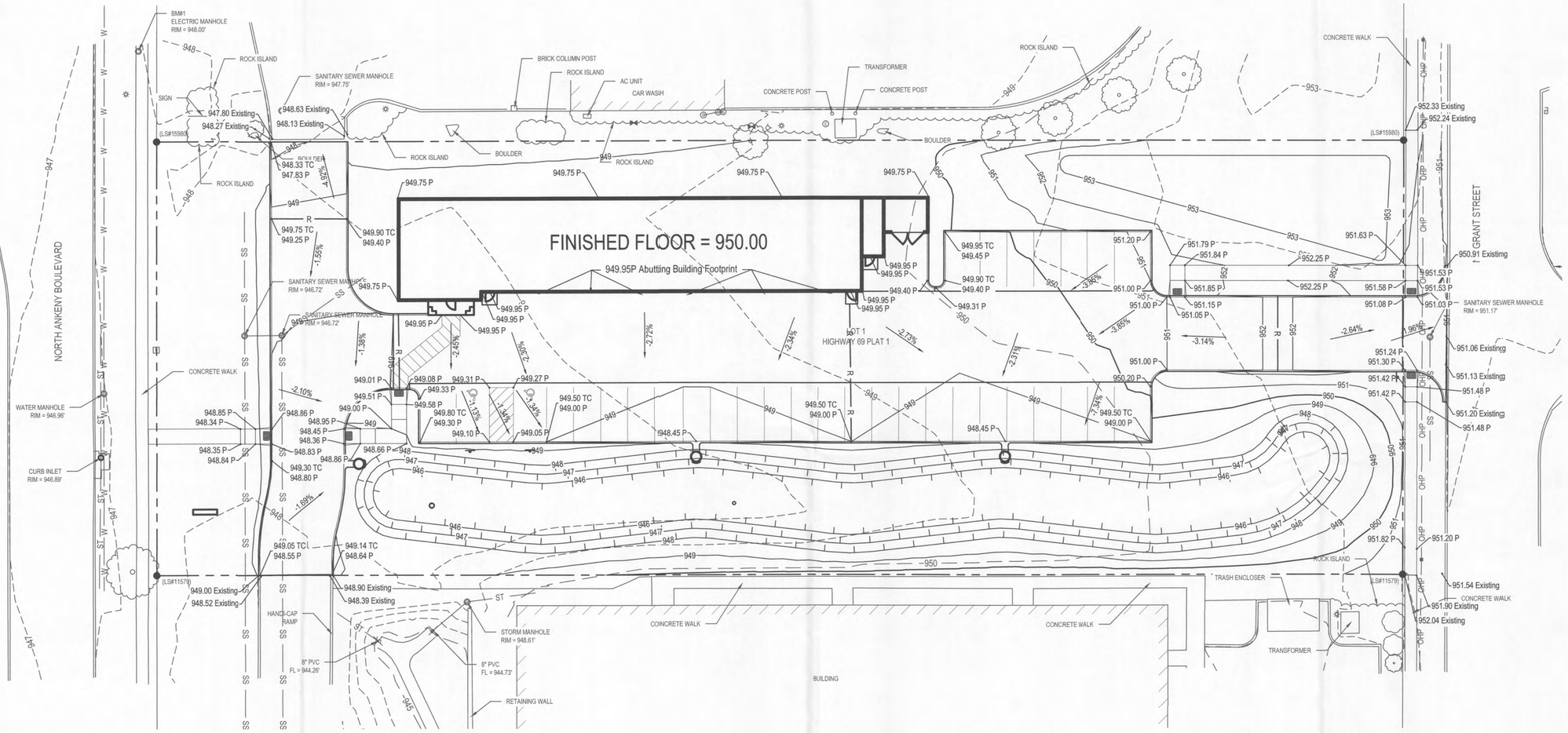
LEGEND

—— R ——	Ridge Line
1120	Existing Contours
1170	Proposed Contours
1220.00	Proposed Spot Elevations

20 0 20
1 inch = 20 ft.



GENERAL GRADING NOTES

1. The Contractor Shall have Complete Responsibility For Damage Caused by Blowing Dust from his Construction Activities.

2. Topsoil and Vegetation Shall be Stripped to a Depth of 6" to 96" in Areas to be Graded.

3. Topsoil Obtained from Stripping Operations Shall be Stockpiled in an Approved Location and Re-spread on Areas Finish Graded to Receive Topsoil.

4. Rubble and Waste Materials from site Clearing and Demolition Shall be Removed From the Site and Lawfully Disposed, Salvaged, or Recycled. Where Fence Posts are Removed, their Concrete Bases Shall be Excavated and Completely Removed. Waste Materials Shall not be Buried on Site.

5. All Fill and Backfill Shall be Low Plasticity, Cohesive Soil that are Free of Organic Material or Debris. Structural Fill Materials Shall Have a Liquid Limit Less than 45 and a Plasticity Index Less Than 20. Excavated Site Soils Will Generally be Suitable for Use as Structural Fill..

6. Fill Compaction Requirements:
   - 6.1. Footing Foundations.
     - 6.1.1. Areas to Receive Fill Shall be Scarified to a Minimum Depth of 6". Fill Shall be Placed in Lifts Not to Exceed 8" in Loose Thickness. Structural Fill Shall be Compacted to a Minimum of 95% of the Maximum Dry Density (ASTM D-698, Standard Proctor) at a Moisture Content Between -2 and +3% of Optimum.
   - 6.2. All Other Locations
     - 6.2.1. Areas to Receive Fill Shall be Scarified to a Minimum Depth of 6". Fill Shall be Placed in Lifts Not to Exceed 8" in Loose Thickness. Structural Fill Shall Be Compacted to a Minimum of 95% of the Maximum Dry Density (ASTM D-698, Standard Proctor) at a Moisture Content Between -2 and +3% of Optimum.

7. PCC Pavements: Prepare Subgrade Below Pavements Prior to Paving Operations by Compacting Upper 9" a Minimum of 98% of the Maximum Dry Density (ASTM D 698 Standard Proctor) at a Moisture Content Between -3 and +4% of Optimum. Subgrade Preparation shall Extend a Minimum of 2 feet Beyond the Back of Curb.

8. For Sidewalks, the Upper 6" of Subgrade shall be Compacted to a Minimum of 95% of the Maximum Dry Density (ASTM D-698, Standard Proctor) at a Moisture Content Between -3 and +4% of Optimum. Sidewalk Subgrades Shall Extend at Least 6" Laterally Beyond the Edge of the New Sidewalk..

9. Backfill Soils Around Foundations, Basement Walls and Retaining Walls shall be Compacted to a Minimum of 95% of the Maximum Dry Density (ASTM D-698, Standard Proctor) at a Moisture Content Between -2% and +3% of Optimum. Granular Backfill shall Not be used Around Foundation Elements.

10. Backfill Soils in Utility Trenches shall be Compacted to a Minimum of 85% of the Maximum Dry Density at a Moisture Content Between -2% and +3% of Optimum (ASTM D698, Standard Proctor). Lift Thickness Shall be Appropriately Matched to the Equipment Used. Granular Backfill shall not be Used in Exterior Trenches. Backfill Placed Within a Zone of Subgrade Preparation Shall be Compacted to the Requirements of the Subgrade for the full Depth of the Backfill

11. Imported Material, if Required, shall be Free of Organic Matter and Debris, and shall be a Clean, Inorganic Silt or Lean Clay with a Liquid Limit Less than 45 and a Plasticity Index Less than 20. Borrow Material shall not Contain any Foreign Material with a Dimension Greater than 3".

12. Any Excess Material shall be Disposed of Off-Site at a Location Determined by the Contractor.

13. Unless Noted, all Spot Elevations Shown are Top of Curb (TC), Top of Slab (P) or Gutter (G).

14. The Subgrade of the Floor Slab Shall be Reworked and Compacted as Structural Fill Prior to Concrete Placement. Upper 8 Inches Shall be Compacted to a Minimum of 95% of the Maximum Dry Density as a Moisture Content Between -2% and +3% of Optimum (ASTM D698, Standard Proctor).

15. If Unstable Soils Are Encountered In The Bottom of Shallow Foundations or Subgrade Areas, Implement Over Excavation and Structural Backfill.

16. Exposed Project Site Soils Shall be Stabilized as Shown in the Sediment and Erosion Control Plan and Landscaping Plan.

17. The Recommendations of the Geotechnical Report shall control in all instances where subgrade preparation, backfill and compaction are concerned. Thiele Geotech will provide report in near future.

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SITE GRADING PLAN

REVISED SITE PLANS
NOT FOR CONSTRUCTION

Revisions		
	Date	Description
1	Date	Description

Proj No:	P2016.473.002
Date:	1/23/2016
Designed By:	PJG
Drawn By:	BJW
Scale:	20
Sheet:	6 of 10

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GENERAL SITE CONSTRUCTION NOTES

1. The Iowa Statewide Urban Design and Specifications (SUDAS) for Public Works Construction, current edition, and any current revisions or amendments thereto and the Special Provisions for this Project shall apply and the Contractor shall perform in accord therewith.

2. The Contractor shall check with the Owner for City approval of the project before starting work.

3. Utilities are shown as a convenience for the Contractor. The locations of all aerial and underground utility facilities may not be indicated in these plans. Underground utilities, whether indicated or not, will be located and flagged by the utility companies at the Contractor's request. No excavation will be permitted in the area of the underground utilities until all facilities have been located and identified to the satisfaction of all parties and then only with extreme care to avoid any possibility of damages to the facilities.

4. Erosion control improvements shall be constructed on this site, including inlet protection, silt fencing and a construction entrance. The Contractor shall be responsible for prompt reconstruction of any erosion control improvements disturbed by his operations. All disturbed erosion control improvements shall be fully reconstructed at the end of each working day prior to leaving the site. Separate payment will not be made for reconstruction of any erosion control improvements. Positive drainage in all work areas shall be maintained in the condition the construction site was in prior to Contractors arrival.

5. 4' sidewalk shall be jointed in 4'x4' panels.

6. The 6 inch (Solid Wall) sanitary sewer pipe may be ABS (SDR 23.5), PVC (SDR 23.5), or VCP.

7. The following storm sewer pipe materials may be used:

a. Reinforced Concrete Pipe (RCP), conforming to ASTM C76 (Class III unless otherwise indicated). Materials and installation shall conform to City of Omaha Standard Specifications.

b. PVC pipe with smooth interior and corrugated exterior, such as Contech A-2000, or equal. Pipe and fittings shall conform to ASTM F949. Installation shall conform to ASTM D 2321. Gasketed joints shall be used, and shall show no leakage when tested in accordance with ASTM D 3212.

c. PVC pipe, SDR -35, in accordance with ASTM D 3034. Installation shall conform to ASTM D 2321. Gasketed joints shall be used, and shall show no leakage when tested in accordance with ASTM D 3212.

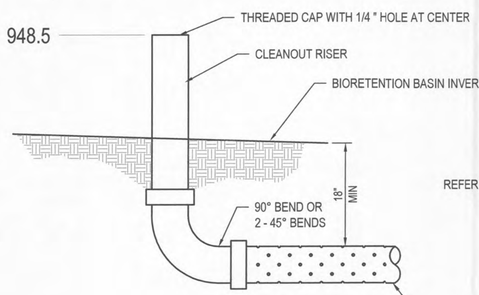
d. Polyethylene pipe, with smooth interior and corrugated exterior, such as ADS N-12, Hancor HI-Q, or equal. Pipe and fittings shall conform to AASHTO M-252 and M-294. Installation shall conform to ASTM D 2321. Joints shall be made with split couplings, corrugated to engage the pipe corrugations, and shall engage a minimum of 2 corrugations on each side of the pipe joint. A neoprene gasket, per the manufacturer's recommendations, shall be used for all joints to ensure a soil-tight connection. Class IV soils shall not be used for bedding or backfill of N-12 pipe.

15. Backfill soils in utility trenches, around foundations, basement walls, and retaining walls shall be compacted to a minimum of 95% of the maximum dry density (ASTM D-698, Standard Proctor) at a moisture content between -3% and +4% of the optimum. Lift thickness shall be appropriately matched to the type of compaction equipment used.

16. Standard Details are available from the City of Ankeny Public Works Department. Detasils may also be downloaded via the internet from the SUDAS Web Site at: www.iowasudas.org

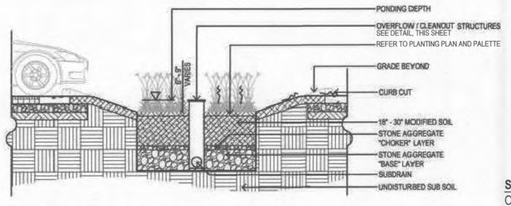
17. The following Standard Plates on file at the City of Ankeny Public Works Department shall govern:

ITEMS	SUDAS FIGURE (DETAIL)	REVISION DATE
Joint Details	7010.101	04/19/2016
Concrete Curb Details	7010.102	04/15/2014
Manhole Boxouts in PCC Pavement	7010.103	04/19/2016
PCC Pavement Jointing	7010.901	10/16/2016
Curb Ramp Outside of Intersection Radius	7030.206	10/16/2016
Concrete Driveway, Type "A"	7030.101	10/20/2015
General Features of an Accessob;e Sidewalk	7030.204	10/20/2015
General Sidewalk and Curb Ramp Details	7030.205	10/20/2015
Special Pipe Connections For Storm Sewer	4020.211	10/16/2012
Sanitary Sewer Service Stub	4010.201	04/21/2009
Castings for Sanitary Sewer Manholes	6010.601	04/21/2015
Circular Sanitary Sewer	6010.301	10/21/2014

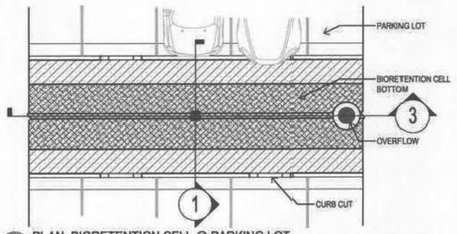


BIORETENTION BASIN CLEANOUT DETAIL

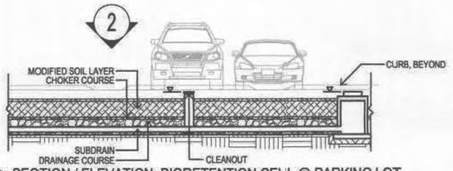
NOT TO SCALE



1 SECTION: BIORETENTION CELL @ PARKING LOT
1/4" = 1'-0"



2 PLAN: BIORETENTION CELL @ PARKING LOT
N.T.S. / DO NOT SCALE



3 SECTION / ELEVATION: BIORETENTION CELL @ PARKING LOT
N.T.S. / DO NOT SCALE

Figure C5-S4- 3: Cross-section and plan views of a bioretention cell

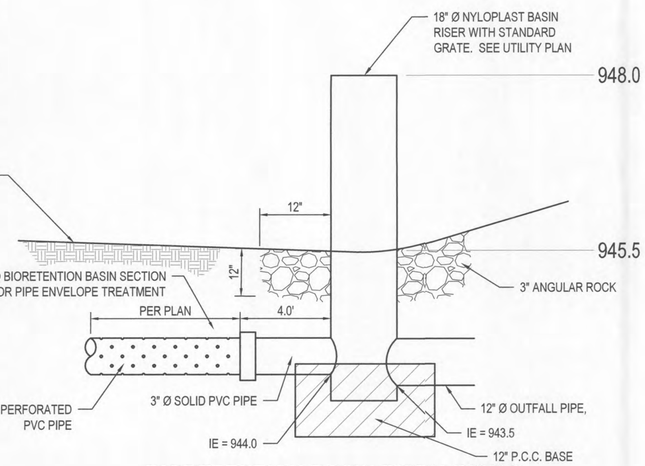
IOWA STORM WATER MANAGEMENT MANUAL

Stone Aggregate Base Layer
Open graded, clean, durable aggregate of 1" to 2" diameter with a void ratio of 35% to 40% in place.

Stone Aggregate Choker Layer
3-inch layer of clean, durable 3/8" diameter chip.

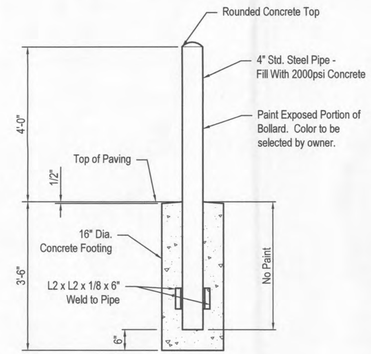
Subdrain
3" diameter rigid PVC pipe. Perforations in pipe shall be standard pattern (ASTM D 2729) $\frac{1}{2}$" diameter holes, 5" spacing, 2 holes per row at 120°, A filter sleeve shall not be allowed on the subdrain pipe.

Modified Soil
Soil layer is 15"-30" in depth, uniform mixture of 75% +/- washed concrete sand, 10% +/- approved organic material (compost) and 15% +/- soil texture that includes A-Horizon characteristics.



BIORETENTION BASIN RISER DETAIL

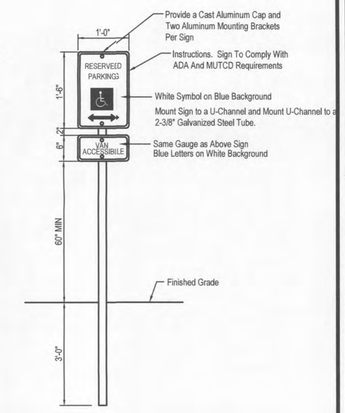
NOT TO SCALE



Shop Apply One Coat of Red Oxide Primer to Pipe.

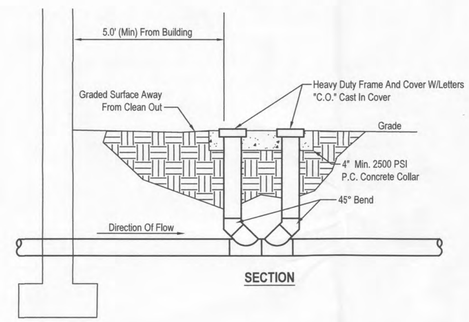
BOLLARD DETAIL

NOT TO SCALE



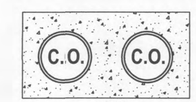
HANDICAP PARKING SIGN

NOT TO SCALE



SECTION

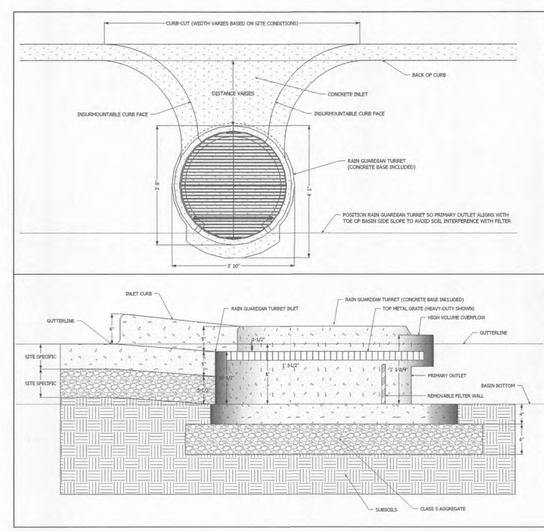
NOTES:
1. Frame Anxd Cover To Be Cast Iron. Approx. Weight Is 70 Lbs.
2. Cover To IHave The Letters "C.O." Cast On ITop
3. Concrete IRest Block Shall Be 2.0' Long x O.D. Off Pipe + 6" On Each Side.



PLAN

SANITARY SEWER CLEANOUT DETAIL

NOT TO SCALE

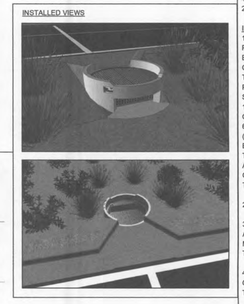


PLAN VIEW NOTES

1. INLET WIDTH AND DISTANCE BETWEEN BACK OF CURB AND RAIN GUARDIAN TURRET MAY VARY WITH SITE CONDITIONS.

2. CONCRETE BASE EXTENDS BEYOND THE FILTER WALL OF THE RAIN GUARDIAN TURRET TO SERVE AS A SPLASH DISSIPATOR.

INSTALLED VIEWS



CROSS-SECTION VIEW NOTES

1. THE TOP OF THE CLASS 5 BASE (COMPACTED TO 95% STANDARD PROCTOR) IS PRECISELY 1' 4" BELOW THE GUTTERLINE ELEVATION.

SPECIFICATIONS
1. STEEL REIINFORCED, COLD JOINT SECURED MONOLITHIC CONCRETE STRUCTURE (1,030 LBS). CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4,000 PSI AT 28 DAYS. CONCRETE AIR ENTRAINED (4% TO 8% BY VOLUME). MANUFACTURED AND DESIGNED TO ASTM C858.
2. THREE-POINT PICK USING RECESSED LIFTING POCKETS WITH A STANDARD I-HOOK.
3. TWO-PIECE LIGHT-DUTY GALVANIZED GRATE (34.5 LBS/PIECE) FOR 541 LB CONCENTRATED LOAD OR 309 LB/SQ FT UNIFORM LOAD.
4. TWO-PIECE HEAVY-DUTY GALVANIZED GRATE (77.5 LBS/PIECE) FOR 2,456 LB CONCENTRATED LOAD OR 1,404 LB/SQ FT UNIFORM LOAD.

INSTALLATICON NOTES
1. INSTALL TIHE CLASS 5 BASE (COMPACTED TO 95% STANDARD PROCTOR). THE DISTANCE FROM THE BACK OF THE CURB MAY VARY BASED ON SITE CONDITIONS, BUT CONSIDERATIONS SHOULD INCLUDE SLOPE OF THE INLET AND BASIN SIDE SLOPES ADJACENT TO THE RAIN GUIARDIAN TURRET. POSITION RAIN GUARDIAN TURRET SO PRIMARY OUTLET ALIGNS WITH TOE OF BASIN SIDE SLOPE TO AVOID SOIL INTERFERENCE WITH REMOVABLE FILTER WALL. EXCAVATE 1' 10" BELOW TIHE GUTTERLINE ELEVATION (I.E. THE BIORETENTION OVERFLOW IELEVATION) TO ACCOMMODATE THE 1' PONDING DEPTH, 8" CLASS 5 AIGGREGATE, AND 4" RAIN GUARDIAN TURRET BASE (IINCLUDED). THEREFORE, THE TOP OF THE CLASS 5 COMPACTED BASE IS PREICISELY 1' 4" BELOW THE GUTTERLINE ELEVATION. THE TOP OF THE RAIN GUARDIAN TURRET METAL GRATE WILL BE 10-1/2" ABOVE THE TOP OF THE CONCRETE BASE AND 1-1/2" BELOW THE GUTTERLINE ELEVATION TO ACCOMMODATE A SLOPED INLET FROM THE GUTTER TO THE RAIN GUARDIAN TURRET.

2. SET RAIN I GUARDIAN TURRET ON THE PREPARED CLASS 5 BASE.

3. INSTALL IFRAMING FOR INLET BETWEEN RAIN GUARDIAN TURRET AND BACK OIF CURB. TOP ELEVATIONS OF THE FRAMING SHOULD MATCH THE TOP OF THE CURB ON THE STREET SIDE AND THE TOP OF THE RAIN GUIARDIAN TURRET ON THE BIORETENTION SIDE.

4. INSTALL EXPANSION/CONTRACTION JOINT MATERIAL OR A SHEET OF POLY TO SERVE AS A BOND BREAK BETWEEN RAIN GUARDIAN TURRET AND CONCRETE INLET BEFORE POURING INLET.

5. SIDE CURIBS OF THE POURED INLET MUST HAVE AN INSURMOUNTABLE PROFILE TO PREVENT WATER FLOW FROM OVERTOPPING THE DOWNSTREAM SIDE OF THE INLET.

6. REMOVAIBLE FILTER WALL SHOULD BE INSTALLED WITH FILTER FABRIC FACIING THE RAIN GUARDIAN TURRET INLET.

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NOTES AND DETAILS

REVISED SITE PLANS
NOT FOR CONSTRUCTION

Revisions		
No.	Date	Description
	Date	Description

Proj No:	P2016.473.002
Date:	1/23/2016
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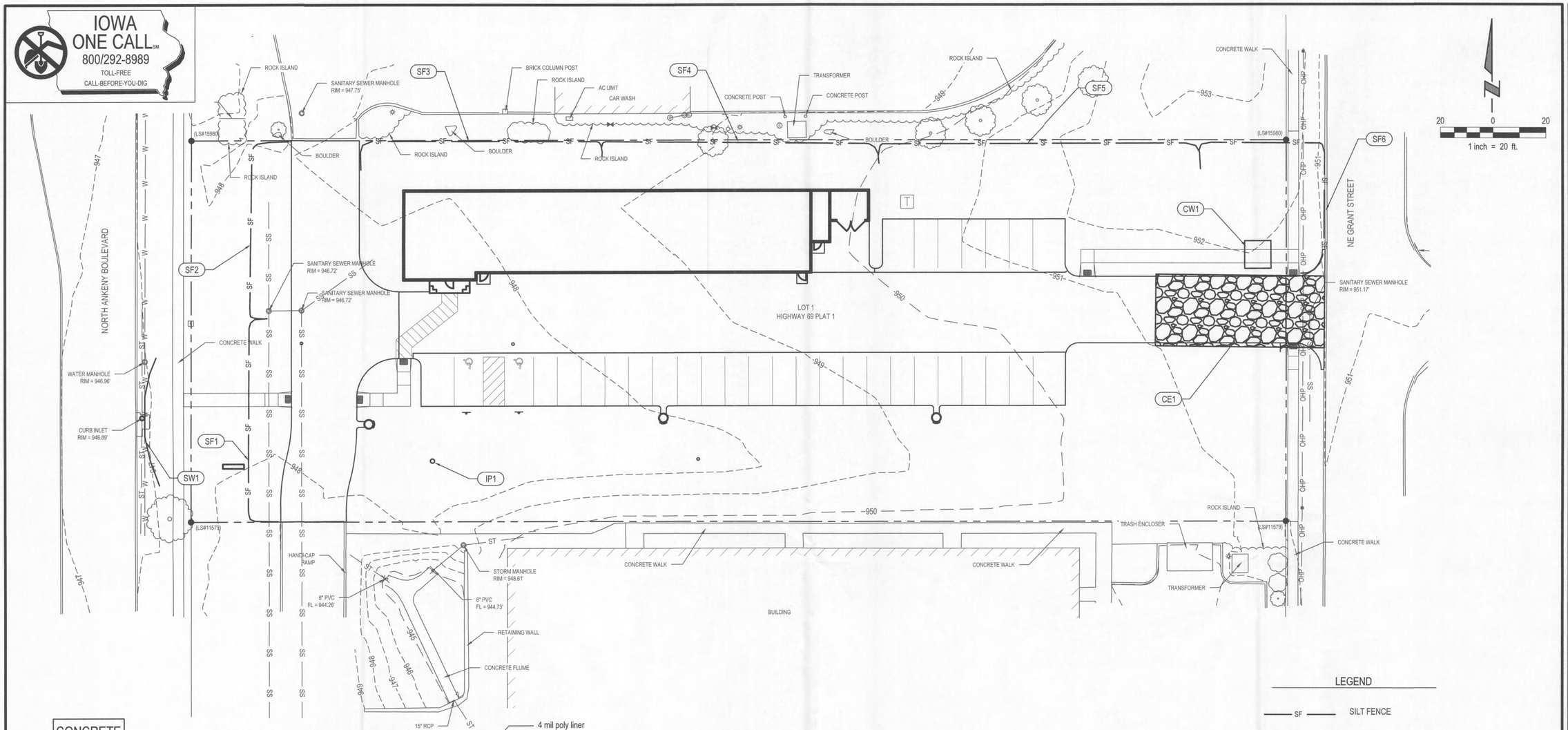
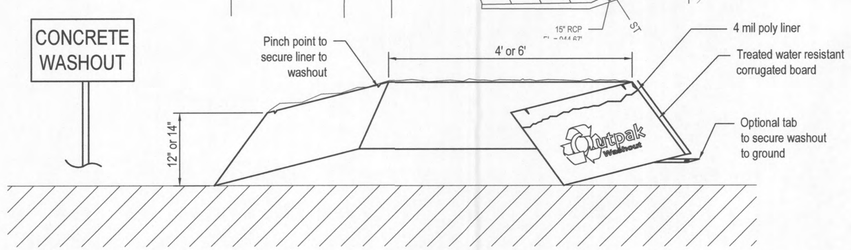


LEGEND

SF — SILT FENCE

NOTE:
Refer to Landscaping Plan for final site stabilization measures.

Refer to Storm Water Pollution Prevention (SWPPP) Notes on Sheet 8 of 8.



1. The concrete washout area shall be installed prior to any concrete placement on this project. install washout area on a level surface. use outpak disposable concrete washout or approved equal.
2. Signs shall be placed as necessary to clearly indicate the location of the concrete washout.
3. The concrete washout area will be replaced as necessary to maintain capacity for waste concrete and other liquid waste.
4. Washout residue shall be removed from the site and disposed of at an approved waste site.
5. Do not mix excess amounts of fresh concrete or cement on-site.
6. Do not wash out concrete trucks into storm drains, open ditches, streets, or streams.
7. Do not dump excess concrete in non-designated dumping areas.
8. Locate washout area at least 50' (15 meters) from storm drains, open ditches, or waterbodies.
9. Wash out wastes into the Outpack washout as shown where the concrete can set, be broken up, and then disposed of properly.

(E) SEDIMENT & EROSION CONTROL REIFERENCE NOTES

CW1	Furnish and Install Concrete Washout Area. Use Outpak Washout or Engineer Approved Equal. See Detail on This Slheet.
CE1	Construction Entrance
SF1	Install Silt Fence in 100' Sections (max. length) with J-Hook Ends
SF2	Install Silt Fence in 100' Sections (max. length) with J-Hook Ends
SF3	Install Silt Fence in 100' Sections (max. length) with J-Hook Ends
SF4	Install Silt Fence in 100' Sections (max. length) with J-Hook Ends
SF5	Install Silt Fence in 100' Sections (max. length) with J-Hook Ends
SF6	Install Silt Fence in 100' Sections (max. length) with J-Hook Ends
SF7	Install Silt Fence in 100' Sections (max. length) with J-Hook Ends
IP1	Furnish and Install Inlet Protection.*
SW1	Furnish and Install 9" Straw Wattle to prevent erosion from entering Highway 69.

*Install Area Inlet Protection on Additional Inlets as Necessary.

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STORM WATER POLLUTION PREVENTION PLAN MAP (SWPPP-SM)

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Sheet:	8 of 10

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MAINTENANCE SCHEDULE:

The following Maintenance Schedule has been provided. The INSPECTOR must perform the Inspections. The OPERATOR/CONTRACTOR must perform all needed maintenance. Furthermore, all erosion control features requiring maintenance may not be listed below. The OPERATOR/CONTRACTOR and INSPECTOR must perform their respective duties on all BMP's that are not listed below as well.

1. Construction Entrance - The entrance shall be maintained in a condition which will prevent tracking or flow of sediment onto public rights-of-way. This may require periodic top dressing with additional stone or the washing and reworking of existing stone as conditions demand and repair and/or cleanout of any structures used to trap sediment. All materials spilled, dropped, washed, or tracked from vehicles onto roadways or into storm drains must be removed immediately. The use of water trucks to remove materials dropped, washed, or tracked onto roadways will not be permitted under any circumstances.

2. Silt Fence - The maintenance measures are as follows; (2.1) silt fences shall be inspected immediately after each rainfall and at least daily during prolonged rainfall, any required repairs shall be made immediately; (2.2) close attention shall be paid to the repair of damaged silt fence resulting from end runs and undercutting; (2.3) should the fabric on a silt fence decompose or become ineffective prior to the end of the expected usable life and the barrier is still necessary, the fabric shall be replaced promptly; (2.4) sediment deposits must be removed when the level of deposition reaches approximately one-half the height of the barrier; and (2.5) any sediment deposits remaining in place after the silt fence is no longer required shall be dressed to conform to the existing grade, prepared and seeded.

3. Storm Drain Inlet Protection - The maintenance measures are as follows; (3.1) structures shall be inspected after each rain and repairs made as necessary and (3.2) structures shall be removed and the area stabilized when the remaining drainage area has been properly stabilized.

4. Temporary Diversion Dike - The measure shall be inspected after every storm and repairs made to the dike, flow channel, outlet or sediment trapping facility, as necessary. Once every two weeks, whether a storm event has occurred or not, the measure shall be inspected and repairs made if needed. Damages caused by construction traffic or other activity must be repaired before the end of each working day.

5. Temporary Fill Diversion - Since the practice is temporary and under most situations will be covered the next working day. The maintenance required should be low. If the practice is to remain in use for more than one day, an inspection shall be made at the end of each work day and repairs made to the measure if needed. The OPERATOR/CONTRACTOR should avoid the placement of any material over the structure while it is in use. Construction traffic should not be permitted to cross the diversion.

6. Temporary Sediment Trap - The maintenance measures are as follows: (6.1) sediment shall be removed and the trap restored to its original dimensions when the sediment has accumulated to one half the design volume of the wet storage, sediment removal from the basin shall be deposited in a suitable area and in such a manner that it will not erode and cause sedimentation problems; (6.2) filter stone shall be regularly checked to ensure that filtration performance is maintained, stone choked with sediment shall be removed and cleaned or replaced; and (6.3) the structure should be checked regularly to ensure that it is structurally sound and has not been damaged by erosion or construction equipment, the height of the stone outlet should be checked to ensure that its center is at least 1 foot below the top of the embankment.

7. Temporary Sediment Basin - The basin embankment should be checked regularly to ensure that it is structurally sound and has not been damaged by erosion or construction equipment. The emergency spillway should be checked regularly to ensure that its lining is well established and erosion-resistent. The basin should be checked after each runoff producing rainfall for sediment cleanout and trash removal. When the sediment reaches the cleanout level, it shall be removed and properly disposed of.

8. Temporary Seeding - Areas which fail to establish vegetative cover adequate to prevent rill erosion will be re-seeded as soon as such areas are identified. Control weeds by mowing.

9. Permanent Seeding - The maintenance measures are as follows: (9.1) in general, a stand of vegetation cannot be determined to be fully established until it has been maintained for one full year after planting; (9.2) new seedlings shall be supplied with adequate moisture, supply water as needed, especially late in the season, in abnormally hot or dry conditions, or on adverse sites, water applications shall be controlled to prevent excessive runoff; (9.3) inspect all seeded areas for failures and make necessary repairs, replacements, and reseedings within the planting season, if possible; [9.3a] if stand is inadequate for erosion control, over seed and fertilize using half of the rates originally specified; [9.3b] if stand is 60% damaged, re-establish following seedbed and seeding recommendations; [9.3c] if stand has less than 40% cover, re-evaluate choice of plant materials and quantities of lime and fertilizer, the soil must be tested to determine if acidity or nutrient imbalances are responsible, re-establish the stand following seedbed and seeding recommendations.

10. Mulching - All mulches and soil coverings should be inspected periodically (particularly after rainstorms) to check for erosion. Where erosion is observed in mulched areas, additional mulch should be applied. Nets and mats should be inspected after rainstorms for dislocation or failure. If washouts or breakage occur, reinstall netting or matting as necessary after repairing damage to the slope or ditch. Inspections should take place until grasses are firmly established. Where mulch is used in conjunction with ornamental plantings, inspect periodically throughout the year to determine if mulch is maintaining coverage of the soil surface; repair as needed.

11. Soil Stabilization Blankets & Matting - All soil stabilization blankets and matting should be inspected periodically following installation, particularly after rainstorms to check for erosion and undermining. Any dislocation or failure should be repaired immediately. If washouts or breakage occurs, reinstall the material after repairing damage to the slope or ditch. Continue to monitor these areas until which time they become permanently stabilized; at that time an annual inspection should be adequate.

12. Street Cleaning/Sweeping - The maintenance measures are as follows; (12.1) evaluate access points daily for sediment tracking; (12.2) when tracked or spilled sediment is found on paved surfaces, it will be removed daily, during times of heavy track-out such as during rains, cleaning may be done several times throughout the day; (12.3) unknown spills or objects will not be mixed with the sediment; and (12.4) if sediment is mixed with other pollutants, it will be disposed of properly at an authorized landfill.

GENERAL NOTES

1. All OPERATORS/CONTRACTORS must confirm with the APPLICANT that any and all applicable governmental approvals have been received prior to the start of work.

2. BMP's may not be removed without INSPECTOR and applicable government approval.

3. The APPLICANT, INSPECTOR, and CONTRACTORS/OPERATORS must adhere to all Good Housekeeping BMP's presented within the SUDAS Specifications. Good Housekeeping BMP's focus on keeping the work site clean and orderly while handling materials and waste in a manner that eliminates the potential for pollutant runoff. Good Housekeeping BMP's such as Sanitary Waste Management , Solid Waste Management , Material Delivery & Storage, Street Cleaning/Sweeping, and Vehicle & Equipment Fueling must be addressed when applicable.

4. The SWPPP documents (e.g., IDNR-NPDES, SWPPP-SM, SWPPP-N, etc.) are essential and a requirement in one part is as binding as though occurring in all. The SWPPP documents are complementary. The documents describe and provide the complete SWPPP. The APPLICANT, INSPECTOR, and/or CONTRACTORS/OPERATORS may not take advantage of any apparent SWPPP errors or omissions. The INSPECTOR shall notify the APPLICANT, DESIGNER, and CONTRACTORS/OPERATORS promptly of any omissions or errors. The APPLICANT shall instruct the DESIGNER to make any corrections necessary to fulfill the overall intent of the SWPPP Documents (e.g., Grading Permit Modification Form). In the case of a discrepancy between parts of the SWPPP documents, the most stringent requirement shall rule.

CONSTRUCTION ACTIVITIES & SCHEDULING

ACTIVITY	SCHEDULE
Install all BMP's needed and associated with the Grading Phase such as stabilized construction entrances, silt basins, riser pipes, outlet pipes, silt traps, silt fence, diversions, terraces, etcetera.	Prior to any stripping of existing vegetation or grading.
Proceed with stripping of existing vegetation and grading in accordance with the grading plan, while disturbing no more than is necessary.	After Installing all BMP's needed and associated with the Grading Phase. Furthermore, INSPECTOR approval must be obtained before the start of any stripping of existing vegetation or grading.
Proceed with infrastructure installation.	Infrastructure installation must occur prior to any lot development.
Implement the installation of Temporary Seeding, Permanent Seeding, and/or Mulching.	Stabilization measures must be initiated as soon as possible in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased.
Implement the Installation all BMP's needed and associated with the Building Phase.	Building Phase BMP's must be installed concurrently with lot development.
Proceed with removal of BMP's.	BMP's may not be removed until each impacted drainage basin has been fully developed. Full development shall mean installation of pavement, buildings, and utilities, landscaping, and fully established permanent seeding. Furthermore, INSPECTOR approval must be obtained before the removal of any BMP's.

SITE INFORMATION

Estimated Start Date: 3/1/2007		Iowa DNR NOI Number: TBD	
Project Name: P2016.473.002		Address: 1315 N Ankeny Blvd	
Subdivision Name: Highway 69 Plat 1	S & ID #: NA	City: Ankeny	County: Polk
Latitude: 41.742379	Longitude: -93.599417	State: Iowa	Zip Code:

Total Site Area (Acres)	1.364	Estimated Permit Duration (Months)	12
Disturbed Area (Acres)	1.364	Cut Volume (yd^3)	INA
Undisturbed Area (Acres)	0.000	Fill Volume (yd^3)	INA
Impervious Area Before Construction (%)	1.0%	Runoff Coefficient Before Construction	C=0.35
Impervious Area After Construction (%)	35.0%	Runoff Coefficient After Construction	C=0.6

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ANKENY, IOWA

STORM WATER POLLUTION PREVENTION PLAN NOTES (SWPPP-N)

REVISED SITE PLANS
NOT FOR CONSTRUCTION

Revisions

No.	Date	Description
	Date	Description

Proj No: P2016.473.002
Date: 1/23/2016
Designed By: PJG
Drawn By: BJW
Scale: 20
Sheet: 9 of 10

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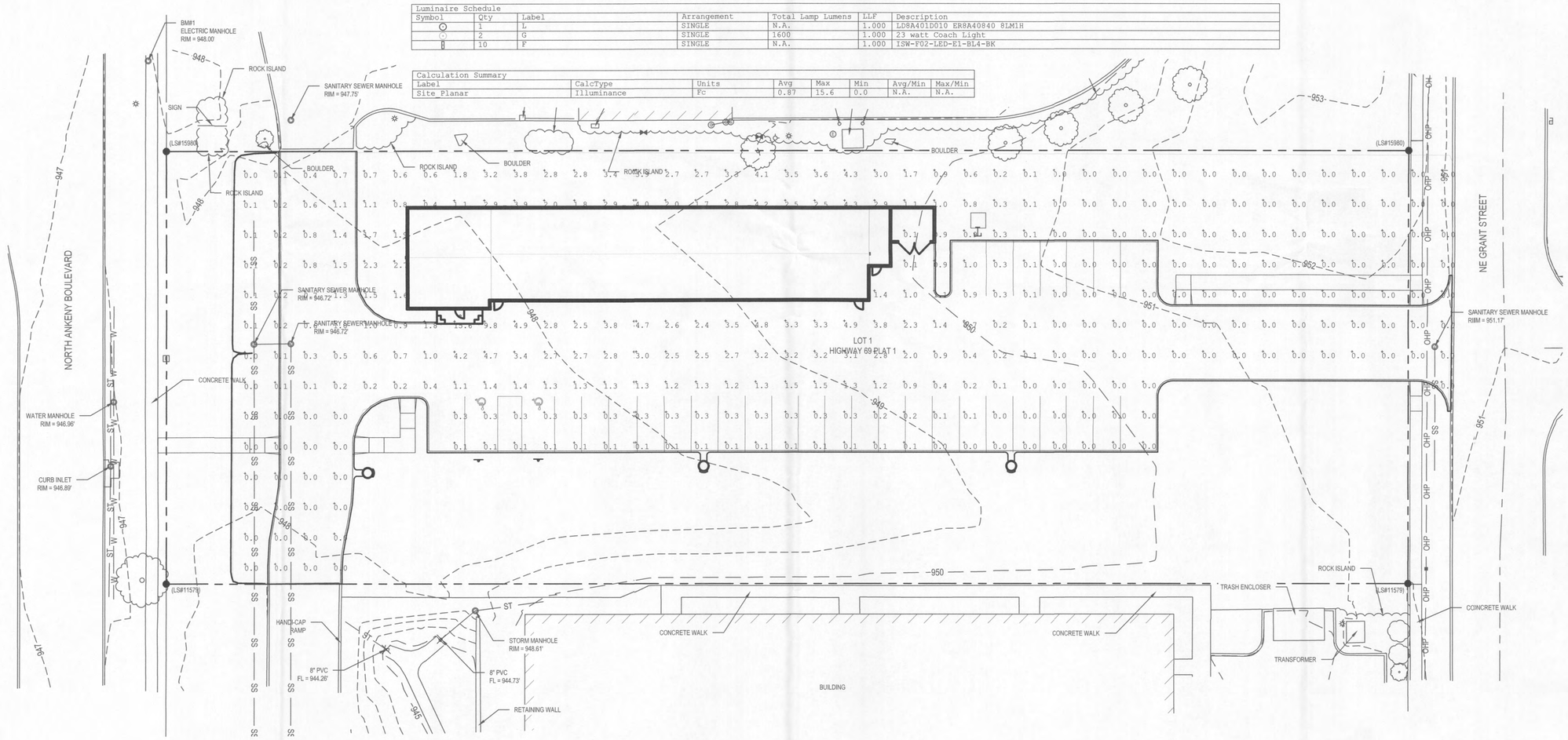
20 0 20
1 inch = 20 ft.

Luminaire Schedule						
Symbol	Qty	Label	Arrangement	Total Lamp Lumens	LLF	Description
	1	L	SINGLE	N.A.	1.000	LD8A401D010 ER8A40840 8LM1H
	2	G	SINGLE	1600	1.000	23 watt Coach Light
	10	F	SINGLE	N.A.	1.000	ISW-F0Z-LED-E1-BL4-BK

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Site_Planar	Illuminance	Fc	0.87	15.6	0.0	N.A.	N.A.



Prepared By:
City Lighting Products Company
4307 W Papin Street
St. Louis, MO 63110

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LIGHTING PHOTOMETRIC PLAN

SITE DEVELOPMENT APPLICATION PLANS
NOT FOR CONSTRUCTION

Revisions		
No.	Date	Description
	Date	Description

Proj No:	P2016.473.002
Date:	1/13/2016
Designed By:	PJG
Drawn By:	BJW
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Sheet:	1 of 1

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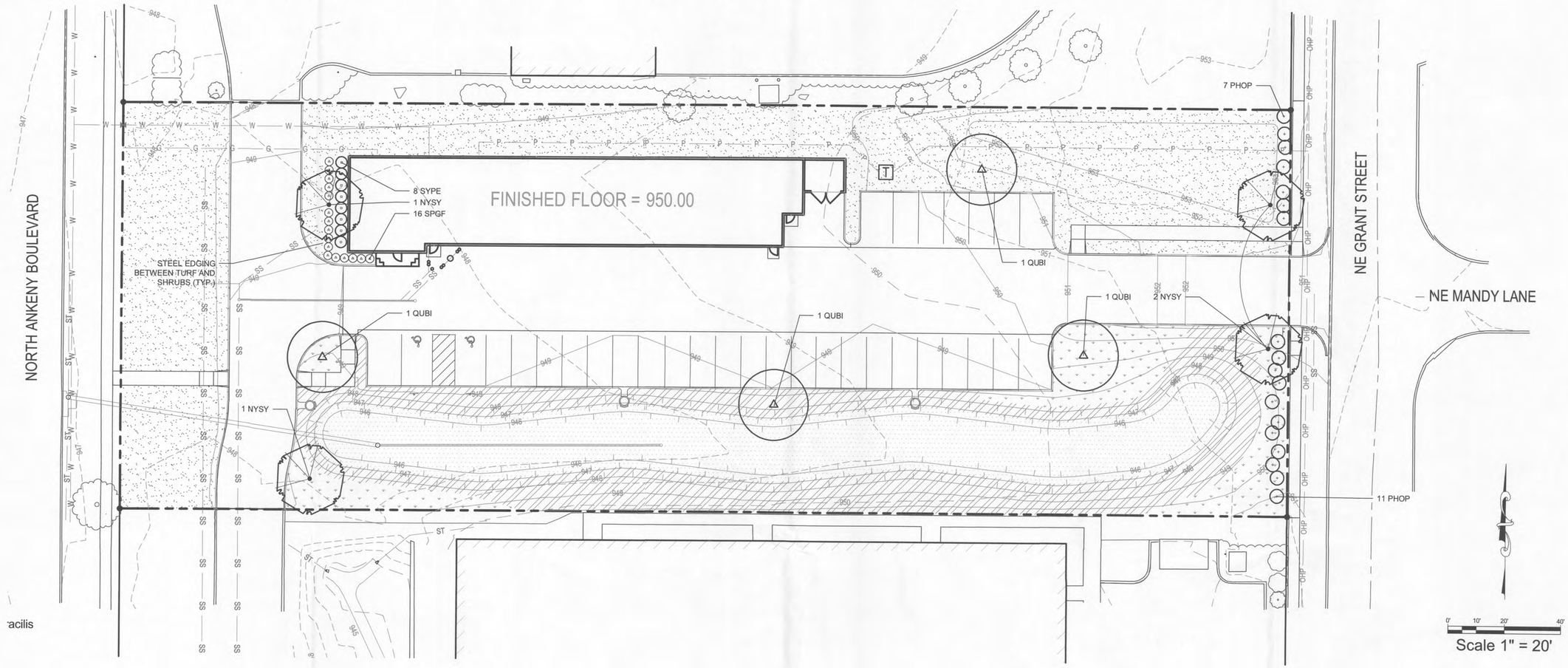

GENERAL PLANTING NOTES

1. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR REMOVING ALL EXISTING VEGETATION (EXCEPT WHERE NOTED TO REMAIN). BEFORE STARTING WORK, THE LANDSCAPE CONTRACTOR SHALL VERIFY THAT THE GRADE OF ALL LANDSCAPE AREAS ARE WITHIN +/-0.1' OF FINISH GRADE. THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY SHOULD ANY DISCREPANCIES EXIST. SEE SPECIFICATIONS FOR MORE DETAILED INSTRUCTION ON TURF AREA AND PLANTING BED PREPARATION.
2. CONSTRUCT AND MAINTAIN FINISH GRADES IN LANDSCAPE AREAS AS SHOWN ON GRADING PLANS, AND CONSTRUCT AND MAINTAIN SLOPES AS RECOMMENDED BY THE GEOTECHNICAL REPORT. ALL LANDSCAPE AREAS SHALL HAVE POSITIVE DRAINAGE AWAY FROM STRUCTURES AT THE MINIMUM SLOPE SPECIFIED IN THE REPORT, AND AREAS OF POTENTIAL PONDING SHALL BE REGRADED TO BLEND IN WITH THE SURROUNDING GRADES AND ELIMINATE PONDING POTENTIAL. SHOULD ANY CONFLICTS AND/OR DISCREPANCIES ARISE BETWEEN THE GRADING PLANS, GEOTECHNICAL REPORT, THESE NOTES, AND ACTUAL CONDITIONS, THE CONTRACTOR SHALL IMMEDIATELY BRING SUCH ITEMS TO THE ATTENTION OF THE LANDSCAPE ARCHITECT, GENERAL CONTRACTOR, AND OWNER.
3. ENSURE THAT THE GRADE IN SHRUB AREAS SHALL BE 2" BELOW FINISH GRADE AFTER INSTALLING SOIL AMENDMENTS, AND 1" BELOW FINISH GRADE IN SOD AREAS AFTER INSTALLING SOIL AMENDMENTS. MULCH COVER WITHIN 6" OF CONCRETE WALKS AND CURBS SHALL NOT PROTRUDE ABOVE THE FINISH SURFACE OF THE WALKS AND CURBS. MULCH COVER WITHIN 12" OF WALLS SHALL BE AT LEAST 3" LOWER THAN THE TOP OF WALL.
4. INSTALL MULCH TOPDRESSING, TYPE AND DEPTH PER MULCH NOTE, IN ALL PLANTING BEDS AND TREE RINGS. DO NOT INSTALL MULCH WITHIN 6" OF TREE ROOT FLARE.
5. INSTALL 14G, GREEN STEEL EDGING BETWEEN ALL PLANTING BEDS AND TURF AREAS, AND BETWEEN GROUNDCOVERS AND OTHER PLANTS (WHERE INDICATED ON THE PLAN).
6. HYDROMULCH ALL DISTURBED AREAS OUTSIDE OF PROPERTY LIMITS (UNLESS SHOWN AS SOD).
7. ALL PLANT LOCATIONS ARE DIAGRAMMATIC. ACTUAL LOCATIONS SHALL BE VERIFIED WITH THE LANDSCAPE ARCHITECT OR DESIGNER PRIOR TO PLANTING. THE LANDSCAPE CONTRACTOR SHALL ENSURE THAT ALL REQUIREMENTS OF THE PERMITTING AUTHORITY ARE MET (I.E., MINIMUM PLANT QUANTITIES, PLANTING METHODS, TREE PROTECTION METHODS, ETC.).
8. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR DETERMINING PLANT QUANTITIES; PLANT QUANTITIES SHOWN ON LEGENDS AND CALLOUTS ARE FOR GENERAL INFORMATION ONLY. IN THE EVENT OF A DISCREPANCY BETWEEN THE PLAN AND THE PLANT LEGEND, THE PLANT QUANTITY AS SHOWN ON THE PLAN (FOR INDIVIDUAL SYMBOLS) OR CALLOUT (FOR GROUNDCOVER PATTERNS) SHALL TAKE PRECEDENCE.
9. **NO SUBSTITUTIONS OF PLANT MATERIALS SHALL BE ALLOWED WITHOUT THE WRITTEN PERMISSION OF THE LANDSCAPE ARCHITECT.** IF SOME OF THE PLANTS ARE NOT AVAILABLE, THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT IN WRITING (VIA PROPER CHANNELS).
10. PLANTS MAY BE INSPECTED AND APPROVED OR REJECTED ON THE JOBSITE BY THE OWNER OR OWNER'S REPRESENTATIVE.
11. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL WORK SHOWN ON THESE PLANS FOR 90 DAYS BEYOND FINAL ACCEPTANCE OF ALL LANDSCAPE WORK BY THE OWNER. LANDSCAPE MAINTENANCE SHALL INCLUDE WEEKLY SITE VISITS FOR THE FOLLOWING ACTIONS (AS APPROPRIATE): PROPER PRUNING, RESTAKING OF TREES, RESETTING OF PLANTS THAT HAVE SETTLED, MOWING AND AERATION OF LAWNS, WEEDING, RESEEDING AREAS WHICH HAVE NOT GERMINATED WELL, TREATING FOR INSECTS AND DISEASES,REPLACEMENT OF MULCH, REMOVAL OF LITTER, REPAIRS TO THE IRRIGATION SYSTEM DUE TO FAULTY PARTS AND/OR WORKMANSHIP, AND THE APPROPRIATE WATERING OF ALL PLANTINGS. THE LANDSCAPE CONTRACTOR SHALL MAINTAIN THE IRRIGATION SYSTEM IN PROPER WORKING ORDER, WITH SCHEDULING ADJUSTMENTS BY SEASON TO MAXIMIZE WATER CONSERVATION.
12. SHOULD SEEDED AND/OR SODDED AREAS NOT BE COVERED BY AN AUTOMATIC IRRIGATION SYSTEM, THE LANDSCAPE CONTRACTOR SHAL BE RESPONSIBLE FOR WATERING THESE AREAS AND OBTAINING A FULL STAND OF GRASS AT NO ADDITIONAL COST TO THE OWNER.
13. TO ACHIEVE FINAL ACCEPTANCE AT THE END OF THE MAINTENANCE PERIOD, ALL OF THE FOLLOWING CONDITIONS MUST OCCUR:
    A. THE LANDSCAPE SHALL SHOW ACTIVE, HEALTHY GROWTH (WITH EXCEPTIONS MADE FOR SEASONAL DORMANCY). ALL PLANTS NOT MEETING THIS CONDITION SHALL BE REJECTED AND REPLACED BY HEALTHY PLANT MATERIAL PRIOR TO FINAL ACCEPTANCE.
    B. ALL HARDSCAPE SHALL BE CLEANED PRIOR TO FINAL ACCEPTANCE.
    C. SODDED AREAS MUST BE ACTIVELY GROWING AND MUST REACH A MINIMUM HEIGHT OF 1 1/2 INCHES BEFORE FIRST MOWING. HYDROMULCHED AREAS SHALL SHOW ACTIVE, HEALTHY GROWTH. BARE AREAS LARGER THAN TWELVE SQUARE INCHES MUST BE RESODDED OR RESEEDED (AS APPROPRIATE) PRIOR TO FINAL ACCEPTANCE. ALL SODDED TURF SHALL BE NEATLY MOWED.
14. SEE SPECIFICATIONS AND DETAILS FOR FURTHER REQUIREMENTS.

LANDSCAPE CALCULATIONS

TOTAL SITE AREA:	59,413 SF
MINIMUM OPEN SPACE AREA REQUIRED:	11,883 SF (20% OF SITE AREA)
OPEN SPACE AREA PROVIDED:	33,002 SF (55.5% OF SITE AREA)
OPEN SPACE PLANT UNITS:	4 UNITS (11,883 SF MIN. OPEN SPACE / 3,000 SF)
TREES REQUIRED:	8 TREES (4 UNITS X 2)
TREES PROVIDED:	8 TREES
SHRUBS REQUIRED:	24 SHRUBS (4 UNITS X 6)
SHRUBS PROVIDED:	24 SHRUBS
GROSS PAVED AREA:	19,543 SF
MIN. SHADED AREA:	3,909 SF (GROSS PAVED AREA X 20%)
SHADED AREA PROVIDED:	5,648 SF (8 TREES X 706 SF)

ROOT BARRIERS

THE CONTRACTOR SHALL INSTALL ROOT BARRIERS NEAR ALL NEWLY-PLANTED TREES THAT ARE LOCATED WITHIN FIVE (5) FEET OF PAVING OR CURBS. ROOT BARRIERS SHALL BE "CENTURY" OR "DEEP-ROOT" 24" DEEP PANELS (OR EQUAL). BARRIERS SHALL BE LOCATED IMMEDIATELY ADJACENT TO HARDSCAPE. INSTALL PANELS PER MANUFACTURER'S RECOMMENDATIONS. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR USE ROOT BARRIERS OF A TYPE THAT COMPLETELY ENCIRCLE THE ROOTBALL.

MULCHES

AFTER ALL PLANTING IS COMPLETE, CONTRACTOR SHALL INSTALL 3" THICK LAYER OF 1-1/2" SHREDDED WOOD MULCH IN ALL PLANTING AREAS. CONTRACTOR SHALL SUBMIT SAMPLES OF ALL MIULCHES TO LANDSCAPE ARCHITECT AND OWNER FOR APPROVAL PRIOR TO CONSTRUCTION. ABSOLUTELY NO EXPOSED GROUND SHALL BE LEFT SHOWING ANYWHERE ON THE PROJECT AFTER MULCH HAS BEEN INSTALLED.

PLANTING LEGEND

SYMBOL	BOTANIC NAME	COMMON NAME	SIZE	SPACING	QUANTITY	REMARKS
TREES						
NYSY	Nyssa sylvatica	Tupelo	2" cal., 8'-10' high	Per plan	4	
QUBI	Quercus bicolor	Swamp White Oak	2" cal., 8'-10' high	Per plan	4	
NOTE: ALL TREES SHALL BE B&B, ROOT BALL SIZE AS APPROPRIATE FOR THE CALIPER SPECIFIED. SEE SPECIFICATIONS FOR PROIPER ROOT QUALITY.						
SHRUBS						
PHOP	Physocarpus opulifolius 'Seward'	Summerwine Ninebark	#5 cont.	Per plan	18	
SPGF	Spiraea japonica 'Goldflame'	Goldflame Spiraea	#5 cont.	3' o.c.	16	
SYPE	Syringa 'Penda'	Bloomerang Lilac	#5 cont.	4' o.c.	8	
TURF AND BIORETENTION BASIN						
	Poa pratensis	Kentucky Bluegrass	Sod	- - -	- - -	
	Buchloe dactyloides and Bouteloa gracilis	Mow border seed mix	Drill seed	See below	- - -	Intended to be mowed once established
	Sporobolus heterolepis	Prairie Dropseed	Plugs	9" o.c.	- - -	
	- - -	IA DOT wetland seed mix	Drill seed	See below	- - -	

SEED MIXES

SEED MIXES SHALL CONTAIN THE FOLLOWING SPECIES:

MOW BORDER SEED MIX:

Buchloe dactyloides	1.0 LB PLS / 1,000 SF
Bouteloa gracilis	2.0 LB PLS / 1,000 SF

IA DOT WETLAND SEED MIX: 0.5 LB PLS / 1,000 SF

ALL SEED IS AVAILABLE THROUGH SHOOTING STAR NATIVE SEEDS, (888) 983-3670. DO NOT USE FERTILIZERS AT INSTALLATION, EXCEPT AS MAY BE RECOMMENDED BY A SOIL TESTING LABORATORY (SEE SPECIFICATIONS).

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PLANTING PLAN

Revisions		
No.	Date	Description

Proj No:	P2016.473.002
Date:	12/02/2016
Designed By:	Date
Drawn By:	
Scale:	As noted
Sheet:	LP-1 of

PLANTING SPECIFICATIONS

GENERAL

A. QUALIFICATIONS OF LANDSCAPE CONTRACTOR
1. ALL LANDSCAPE WORK SHOWN ON THESE PLANS SHALL BE PERFORMED BY A SINGLE FIRM SPECIALIZING IN LANDSCAPE PLANTING.
2. A LIST OF SUCCESSFULLY COMPLETED PROJECTS OF THIS TYPE, SIZE AND NATURE MAY BE REQUESTED BY THE OWNER FOR FURTHER QUALIFICATION MEASURES.
3. THE LANDSCAPE CONTRACTOR SHALL HOLD A VALID CONTRACTOR'S LICENSE ISSUED BY THE APPROPRIATE LOCAL JURISDICTION.

B. SCOPE OF WORK
1. WORK COVERED BY THESE SECTIONS INCLUDES THE FURNISHING AND PAYMENT OF ALL MATERIALS, LABOR, SERVICES, EQUIPMENT, LICENSES, TAXES AND ANY OTHER ITEMS THAT ARE NECESSARY FOR THE EXECUTION, INSTALLATION AND COMPLETION OF ALL WORK, SPECIFIED HEREIN AND / OR SHOWN ON THE LANDSCAPE PLANS, NOTES, AND DETAILS.
2. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE LAWS, CODES AND REGULATIONS REQUIRED BY AUTHORITIES HAVING JURISDICTION OVER SUCH WORK, INCLUDING ALL INSPECTIONS AND PERMITS REQUIRED BY FEDERAL, STATE AND LOCAL AUTHORITIES IN SUPPLY, TRANSPORTATION AND INSTALLATION OF MATERIALS.
3. THE LANDSCAPE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITY LINES (WATER, SEWER, ELECTRICAL, TELEPHONE, GAS, CABLE, TELEVISION, ETC.) PRIOR TO THE START OF ANY WORK.

PRODUCTS

A. ALL MANUFACTURED PRODUCTS SHALL BE NEW.
B. CONTAINER AND BALLED-AND-BURLAPPED PLANTS:
1. FURNISH NURSERY-GROWN PLANTS COMPLYING WITH ANSI Z60.1-2014. PROVIDE WELL-SHAPED, FULLY BRANCHED, HEALTHY, VIGOROUS STOCK FREE OF DISEASE, INSECTS, EGGS, LARVAE, AND DEFECTS SUCH AS KNOTS, SUN SCALD, INJURIES, ABRASIONS, AND DISFIGUREMENT. ALL PLANTS WITHIN A SPECIES SHALL HAVE SIMILAR SIZE, AND SHALL BE OF A FORM TYPICAL FOR THE SPECIES. ALL TREES SHALL BE OBTAINED FROM SOURCES WITHIN 200 MILES OF THE PROJECT SITE, AND WITH SIMILAR CLIMACTIC CONDITIONS.
2. ROOT SYSTEMS SHALL BE HEALTHY, DENSELY BRANCHED ROOT SYSTEMS, NON-POT-BOUND, FREE FROM ENCIRCLING AND/OR GIRDLING ROOTS, AND FREE FROM ANY OTHER ROOT DEFECTS (SUCH AS J-SHAPED ROOTS).
3. ANY PLANT DEEMED UNACCEPTABLE BY THE LANDSCAPE ARCHITECT OR OWNER SHALL BE IMMEDIATELY REMOVED FROM THE SITE AND SHALL BE REPLACED WITH AN ACCEPTBLE PLANT OF LIKE TYPE AND SIZE AT THE CONTRACTOR'S OWN EXPENSE. ANY PLANTS APPEARING TO BE UNHEALTHY, EVEN IF DETERMINED TO STILL BE ALIVE, SHALL NOT BE ACCEPTED. THE LANDSCAPE ARCHITECT AND OWNER SHALL BE THE SOLE JUDGES AS TO THE ACCEPTABILITY OF PLANT MATERIAL.
4. ALL TREES SHALL BE STANDARD IN FORM, UNLESS OTHERWISE SPECIFIED. TREES WITH CENTRAL LEADERS WILL NOT BE ACCEPTED IF LEADER IS DAMAGED OR REMOVED. PRUNE ALL DAMAGED TWIGS AFTER PLANTING.
5. CALIPER MEASUREMENTS FOR STANDARD (SINGLE TRUNK) TREES SHALL BE AS FOLLOWS: SIX INCHES ABOVE THE ROOT FLARE FOR TREES UP TO AND INCLUDING FOUR INCHES IN CALIPER, AND TWELVE INCHES ABOVE THE ROOT FLARE FOR TREES EXCEEDING FOUR INCHES IN CALIPER.
6. MULTI-TRUNK TREES SHALL BE MEASURED BY THEIR OVERALL HEIGHT, MEASURED FROM THE TOP OF THE ROOT BALL.
7. ANY TREE OR SHRUB SHOWN TO HAVE EXCESS SOIL PLACED ON TOP OF THE ROOT BALL, SO THAT THE ROOT FLARE HAS BEEN COMPLETELY COVERED, SHALL BE REJECTED.

C. SOD: PROVIDE WELL-ROOTED SOD OF THE VARIETY NOTED ON THE PLANS. SOD SHALL BE CUT FROM HEALTHY, MATURE TURF WITH SOIL THICKNESS OF 3/4" TO 1". EACH PALLET OF SOD SHALL BE ACCOMPANIED BY A CERTIFICATE FROM SUPPLIER STATING THE COMPOSITION OF THE SOD.

D. SEED: PROVIDE BLEND OF SPECIES AND VARIETIES AS NOTED ON THE PLANS, WITH MAXIMUM PERCENTAGES OF PURITY, GERMINATION, AND MINIMUM PERCENTAGE OF WEED SEED AS INDICATED ON PLANS. EACH BAG OF SEED SHALL BE ACCOMPANIED BY A TAG FROM THE SUPPLIER INDICATING THE COMPOSITION OF THE SEED.

E. TOPSOIL: SANDY TO CLAY LOAM TOPSOIL, FREE OF STONES LARGER THAN ½ INCH, FOREIGN MATTER, PLANTS, ROOTS, AND SEEDS.

F. COMPOST: WELL-COMPOSTED, STABLE, AND WEED-FREE ORGANIC MATTER, pH RANGE OF 5.5 TO 8; MOISTURE CONTENT 35 TO 55 PERCENT BY WEIGHT; 100 PERCENT PASSING THROUGH 3/4-INCH SIEVE; SOLUBLE SALT CONTENT OF 5 TO 10 DECISIEMENS/M; NOT EXCEEDING 0.5 PERCENT INERT CONTAMINANTS AND FREE OF SUBSTANCES TOXIC TO PLANTINGS. NO MANURE OR ANIMAL-BASED PRODUCTS SHALL BE USED.

G. FERTILIZER: GRANULAR FERTILIZER CONSISTING OF NITROGEN, PHOSPHORUS, POTASSIUM, AND OTHER NUTRIENTS IN PROPORTIONS, AMOUNTS, AND RELEASE RATES RECOMMENDED IN A SOIL REPORT FROM A QUALIFIED SOIL-TESTING AGENCY (SEE BELOW).

H. MULCH: SIZE AND TYPE AS INDICATED ON PLANS, FREE FROM DELETERIOUS MATERIALS AND SUITABLE AS A TOP DRESSING OF TREES AND SHRUBS.

I. WEED FABRIC: 5 OUNCE, WOVEN, NEEDLE-PUNCHED FABRIC, SUCH AS DEWITT PRO5 LANDSCAPE FABRIC (OR APPROVED EQUAL).

J. TREE STAKING AND GUYING
1. STAKES: 6' LONG GREEN METAL T-POSTS.
2. GUY AND TIE WIRE: ASTM A 641, CLASS 1, GALVANIZED-STEEL WIRE, 2-STRAND, TWISTED, 0.106 INCH DIAMETER.
3. STRAP CHAFING GUARD: REINFORCED NYLON OR CANVAS AT LEAST 1-1/2 INCH WIDE, WITH GROMMETS TO PROTECT TREE TRUNKS FROM DAMAGE.

K. STEEL EDGING: PROFESSIONAL STEEL EDGING, 14 GAUGE THICK X 4 INCHES WIDE, FACTORY PAINTED DARK GREEN. ACCEPTABLE MANUFACTURERS INCLUDE COL-MET OR APPROVED EQUAL.

L. PRE-EMERGENT HERBICIDES: ANY GRANULAR, NON-STAINING PRE-EMERGENT HERBICIDE THAT IS LABELED FOR THE SPECIFIC ORNAMENTALS OR TURF ON WHICH IT WILL BE UTILIZED. PRE-EMERGENT HERBICIDES SHALL BE APPLIED PER THE MANUFACTURER'S LABELED RATES.

METHODS

A. SOIL PREPARATION
1. BEFORE STARTING WORK, THE LANDSCAPE CONTRACTOR SHALL VERIFY THAT THE GRADE OF ALL LANDSCAPE AREAS ARE WITHIN +/-0.1' OF FINISH GRADE. THE CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY SHOULD ANY DISCREPANCIES EXIST.
2. SOIL TESTING:
   a. AFTER FINISH GRADES HAVE BEEN ESTABLISHED, CONTRACTOR SHALL HAVE SOIL SAMPLES TESTED BY AN ESTABLISHED SOIL TESTING LABORATORY FOR THE FOLLOWING: SOIL TEXTURAL CLASS, GENERAL SOIL FERTILITY, pH, ORGANIC MATTER CONTENT, SALT (CEC), LIME, SODIUM ADSORPTION RATIO (SAR) AND BORON CONTENT. EACH SAMPLE SUBMITTED SHALL CONTAIN NO LESS THAN ONE QUART OF SOIL.
   b. CONTRACTOR SHALL ALSO SUBMIT THE PROJECT'S PLANT LIST TO THE LABORATORY ALONG WITH THE SOIL SAMPLES.
   c. THE SOIL REPORT PRODUCED BY THE LABORATORY SHALL CONTAIN RECOMMENDATIONS FOR THE FOLLOWING (AS APPROPRIATE): GENERAL SOIL PREPARATION AND BACKFILL MIXES, PRE-PLANT FERTILIZER APPLICATIONS, AND ANY OTHER SOIL RELATED ISSUES. THE REPORT SHALL ALSO PROVIDE A FERTILIZER PROGRAM FOR THE ESTABLISHMENT PERIOD AND FOR LONG-TERM MAINTENANCE.
3. THE CONTRACTOR SHALL INSTALL SOIL AMENDMENTS AND FERTILIZERS PER THE SOILS REPORT RECOMMENDATIONS. ANY CHANGE IN COST DUE TO THE SOIL REPORT RECOMMENDATIONS, EITHER INCREASE OR DECREASE, SHALL BE SUBMITTED TO THE OWNER WITH THE REPORT.
4. FOR BIDDING PURPOSES ONLY, THE SOIL PREPARATION SHALL CONSIST OF THE FOLLOWING:
   a. TURF: INCORPORATE THE FOLLOWING AMENDMENTS INTO THE TOP 8" OF SOIL BY MEANS OF ROTOTILLING AFTER CROSS-RIPPING:
   i. NITROGEN STABILIZED ORGANIC AMENDMENT - 4 CU. YDS. PER 1,000 S.F.
   ii. AMMONIUM PHOSPHATE 16-20-0 - 15 LBS PER 1,000 S.F.
   iii. AGRICULTURAL GYPSUM - 100 LBS PER 1,000 S.F.
   b. TREES, SHRUBS, AND PERENNIALS: INCORPORATE THE FOLLOWING AMENDMENTS INTO THE TOP 8" OF SOIL BY MEANS OF ROTOTILLING AFTER CROSS-RIPPING:
   i. NITROGEN STABILIZED ORGANIC AMENDMENT - 4 CU. YDS. PER 1,000 S.F.
   ii. 12-12-12 FERTILIZER - 10 LBS. PER CU. YD.
   iii. AGRICULTURAL GYPSUM - 10 LBS. PER CU. YD.
   iv. IRON SULPHATE - 2 LBS. PER CU. YD.
5. CONTRACTOR SHALL ENSURE THAT THE GRADE IN SOD AREAS SHALL BE 1" BELOW FINISH GRADE BEFORE INSTALLING SOIL AMENDMENTS, AND 2" BELOW FINISH GRADE IN SHRUB AREAS BEFORE INSTALLING SOIL AMENDMENTS. MULCH COVER WITHIN 6" OF CONCRETE WALKS AND CURBS SHALL NOT PROTRUDE ABOVE THE FINISH SURFACE OF THE WALKS AND CURBS. MULCH COVER WITHIN 12" OF WALLS SHALL BE AT LEAST 3" LOWER THAN THE TOP OF WALL.
6. ONCE SOIL PREPARATION IS COMPLETE, THE LANDSCAPE CONTRACTOR SHALL ENSURE THAT THERE ARE NO DEBRIS, TRASH, OR STONES LARGER THAN 1" REMAINING IN THE TOP 6" OF SOIL.

B. GENERAL PLANTING
1. REMOVE ALL NURSERY TAGS AND STAKES FROM PLANTS.
2. EXCEPT IN AREAS TO BE PLANTED WITH ORNAMENTAL GRASSES, APPLY PRE-EMERGENT HERBICIDES AT THE MANUFACTURER'S RECOMMENDED RATE.
3. TRENCHING NEAR EXISTING TREES:
   a. CONTRACTOR SHALL NOT DISTURB ROOTS 1-1/2" AND LARGER IN DIAMETER WITHIN THE CRITICAL ROOT ZONE (CRZ) OF EXISTING TREES, AND SHALL EXERCISE ALL POSSIBLE CARE AND PRECAUTIONS TO AVOID INJURY TO TREE ROOTS, TRUNKS, AND BRANCHES. THE CRZ IS DEFINED AS A CIRCULAR AREA EXTENDING OUTWARD FROM THE TREE TRUNK, WITH A RADIUS EQUAL TO 1' FOR EVERY 1" OF TRUNK DIAMETER-AT-BREAST-HEIGHT (4.5' ABOVE THE AVERAGE GRADE AT THE TRUNK).
   b. ALL EXCAVATION WITHIN THE CRZ SHALL BE PERFORMED USING HAND TOOLS. NO MACHINE EXCAVATION OR TRENCHING OF ANY KIND SHALL BE ALLOWED WITHIN THE CRZ.
   c. ALTER ALIGNMENT OF PIPE TO AVOID TREE ROOTS 1-1/2" AND LARGER IN DIAMETER. WHERE TREE ROOTS 1-1/2" AND LARGER IN DIAMETER ARE ENCOUNTERED IN THE FIELD, TUNNEL UNDER SUCH ROOTS. WRAP EXPOSED ROOTS WITH SEVERAL LAYERS OF BURLAP AND KEEP MOIST. CLOSE ALL TRENCHES WITHIN THE CANOPY DRIP LINES WITHIN 24 HOURS.
   d. ALL SEVERED ROOTS SHALL BE HAND PRUNED WITH SHARP TOOLS AND ALLOWED TO AIR-DRY. DO NOT USE ANY SORT OF SEALERS OR WOUND PAINTS.

C. TREE PLANTING
1. TREE PLANTING HOLES SHALL BE EXCAVATED TO MINIMUM WIDTH OF TWO TIMES THE WIDTH OF THE ROOTBALL, AND TO A DEPTH EQUAL TO THE DEPTH OF THE ROOTBALL LESS TWO TO FOUR INCHES.
2. SCARIFY THE SIDES AND BOTTOM OF THE PLANTING HOLE PRIOR TO THE PLACEMENT OF THE TREE. REMOVE ANY GLAZING THAT MAY HAVE BEEN CAUSED DURING THE EXCAVATION OF THE HOLE.
3. FOR CONTAINER AND BOX TREES, TO REMOVE ANY POTENTIALLY GIRDLING ROOTS AND OTHER ROOT DEFECTS, THE CONTRACTOR SHALL SHAVE A 1" LAYER OFF OF THE SIDES AND BOTTOM OF THE ROOTBALL OF ALL TREES JUST BEFORE PLACING INTO THE PLANTING PIT. DO NOT "TEASE" ROOTS OUT FROM THE ROOTBALL.
4. INSTALL THE TREE ON UNDISTURBED SUBGRADE SO THAT THE TOP OF THE ROOTBALL IS TWO TO FOUR INCHES ABOVE THE SURROUNDING GRADE.
5. BACKFILL THE TREE HOLE UTILIZING THE EXISTING TOPSOIL FROM ON-SITE. ROCKS LARGER THAN 1" DIA. AND ALL OTHER DEBRIS SHALL BE REMOVED FROM THE SOIL PRIOR TO THE BACKFILL. SHOULD ADDITIONAL SOIL BE REQUIRED TO ACCOMPLISH THIS TASK, USE STORED TOPSOIL FROM ON-SITE OR IMPORT ADDITIONAL TOPSOIL FROM OFF-SITE AT NO ADDITIONAL COST TO THE OWNER. IMPORTED TOPSOIL SHALL BE OF SIMILAR TEXTURAL CLASS AND COMPOSITION IN THE ON-SITE SOIL.
6. THE TOTAL NUMBER OF TREE STAKES (BEYOND THE MINIMUMS LISTED BELOW) WILL BE LEFT TO THE LANDSCAPE CONTRACTOR'S DISCRETION. SHOULD ANY TREES FALL OR LEAN, THE LANDSCAPE CONTRACTOR SHALL STRAIGHTEN THE TREE, OR REPLACE IT SHOULD IT BECOME DAMAGED. TREE STAKING SHALL ADHERE TO THE FOLLOWING GUIDELINES:

a.	1"-2" TREES	TWO STAKES PER TREE
b.	2-1/2"-4" TREES	THREE STAKES PER TREE
c.	TREES OVER 4" CALIPER	GUY AS NEEDED
d.	MULTI-TRUNK TREES STABILIZE THE TREE	THREE STAKES PER TREE MINIMUM, QUANTITY AND POSITIONS AS NEEDED TO

7. UPON COMPLETION OF PLANTING, CONSTRUCT AN EARTH WATERING BASIN AROUND THE TREE. COVER THE INTERIOR OF THE TREE RING WITH MULCH (TYPE AND DEPTH PER PLANS).

D. SHRUB, PERENNIAL, AND GROUNDCOVER PLANTING
1. DIG THE PLANTING HOLES TWICE AS WIDE AND 2" LESS DEEP THAN EACH PLANT'S ROOTBALL. INSTALL THE PLANT IN THE HOLE. BACKFILL AROUND THE PLANT WITH SOIL AMENDED PER SOIL TEST RECOMMENDATIONS.
2. WHEN PLANTING IS COMPLETE, INSTALL MULCH (TYPE AND DEPTH PER PLANS) OVER ALL PLANTING BEDS, COVERING THE ENTIRE PLANTING AREA.

E. SODDING
1. SOD VARIETY TO BE AS SPECIFIED ON THE LANDSCAPE PLAN.
2. LAY SOD WITHIN 24 HOURS FROM THE TIME OF STRIPPING. DO NOT LAY IF THE GROUND IS FROZEN.
3. LAY THE SOD TO FORM A SOLID MASS WITH TIGHTLY FITTED JOINTS. BUTT ENDS AND SIDES OF SOD STRIPS - DO NOT OVERLAP. STAGGER STRIPS TO OFFSET JOINTS IN ADJACENT COURSES.
4. ROLL THE SOD TO ENSURE GOOD CONTACT OF THE SOD'S ROOT SYSTEM WITH THE SOIL UNDERNEATH.
5. WATER THE SOD THOROUGHLY WITH A FINE SPRAY IMMEDIATELY AFTER PLANTING TO OBTAIN AT LEAST SIX INCHES OF PENETRATION INTO THE SOIL BELOW THE SOD.

F. DRILL SEEDING
1. ALL SEED SHALL BE DRILL SEEDED AT THE RATES SHOWN ON THE PLANS, WITH A HYDROMULCH MIX APPLIED AFTER SEEDING.
2. THE AREA SHALL BE DRILLED FROM 2 DIRECTIONS WITH AT LEAST 45° DIFFERENCE IN ANGLE OF APPROACH. AFTER SEEDING ALL AREAS SHALL BE PRESSED FIRM UNTIL A MINIMUM OF 85% OF THE SEED IS COVERED.
3. THE HYDROMULCH MIX (PER 1,000 SF) SHALL BE AS FOLLOWS:
   50# CELLULOSE FIBER MULCH
   15# 15-15-15 WATER SOLUBLE FERTILIZER
   4# ORGANIC BINDER

G. CLEAN UP
1. DURING LANDSCAPE PREPARATION AND PLANTING, KEEP ALL PAVEMENT CLEAN AND ALL WORK AREAS IN A NEAT, ORDERLY CONDITION.
2. DISPOSED LEGALLY OF ALL EXCAVATED MATERIALS OFF THE PROJECT SITE.

H. INSPECTION AND ACCEPTANCE
1. UPON COMPLETION OF THE WORK, THE LANDSCAPE CONTRACTOR SHALL PROVIDE THE SITE CLEAN, FREE OF DEBRIS AND TRASH, AND SUITABLE FOR USE AS INTENDED. THE LANDSCAPE CONTRACTOR SHALL THEN REQUEST AN INSPECTION BY THE OWNER TO DETERMINE FINAL ACCEPTABILITY.
2. WHEN THE INSPECTED PLANTING WORK DOES NOT COMPLY WITH THE CONTRACT DOCUMENTS, THE LANDSCAPE CONTRACTOR SHALL REPLACE AND/OR REPAIR THE REJECTED WORK TO THE OWNER'S SATISFACTION WITHIN 24 HOURS.
3. THE LANDSCAPE MAINTENANCE PERIOD WILL NOT COMMENCE UNTIL THE LANDSCAPE WORK HAS BEEN RE-INSPECTED BY THE OWNER AND FOUND TO BE ACCEPTABLE. AT THAT TIME, A WRITTEN NOTICE OF FINAL ACCEPTANCE WILL BE ISSUED BY THE OWNER, AND THE MAINTENANCE AND GUARANTEE PERIODS WILL COMMENCE.

I. LANDSCAPE MAINTENANCE
1. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL WORK SHOWN ON THESE PLANS FOR 90 DAYS BEYOND FINAL ACCEPTANCE OF ALL LANDSCAPE WORK BY THE OWNER. LANDSCAPE MAINTENANCE SHALL INCLUDE WEEKLY SITE VISITS FOR THE FOLLOWING ACTIONS (AS APPROPRIATE): PROPER PRUNING, RESTAKING OF TREES, RESETTING OF PLANTS THAT HAVE SETTLED, MOWING AND AERATION OF LAWNS, WEEDING, RESEEDING AREAS WHICH HAVE NOT GERMINATED WELL, TREATING FOR INSECTS AND DISEASES, REPLACEMENT OF MULCH, REMOVAL OF LITTER, REPAIRS TO THE IRRIGATION SYSTEM DUE TO FAULTY PARTS AND/OR WORKMANSHIP, AND THE APPROPRIATE WATERING OF ALL PLANTINGS. THE LANDSCAPE CONTRACTOR SHALL MAINTAIN THE IRRIGATION SYSTEM IN PROPER WORKING ORDER, WITH SCHEDULING ADJUSTMENTS BY SEASON TO MAXIMIZE WATER CONSERVATION.
2. SHOULD SEEDED AND/OR SODDED AREAS NOT BE COVERED BY AN AUTOMATIC IRRIGATION SYSTEM, THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR WATERING THESE AREAS AND OBTAINING A FULL, HEALTHY STAND OF GRASS AT NO ADDITIONAL COST TO THE OWNER.
3. TO ACHIEVE FINAL ACCEPTANCE AT THE END OF THE MAINTENANCE PERIOD, ALL OF THE FOLLOWING CONDITIONS MUST OCCUR:
   a. THE LANDSCAPE SHALL SHOW ACTIVE, HEALTHY GROWTH (WITH EXCEPTIONS MADE FOR SEASONAL DORMANCY). ALL PLANTS NOT MEETING THIS CONDITION SHALL BE REJECTED AND REPLACED BY HEALTHY PLANT MATERIAL PRIOR TO FINAL ACCEPTANCE.
   b. ALL HARDSCAPE SHALL BE CLEANED PRIOR TO FINAL ACCEPTANCE.
   c. SODDED AREAS MUST BE ACTIVELY GROWING AND MUST REACH A MINIMUM HEIGHT OF 1 1/2 INCHES BEFORE FIRST MOWING. HYDROMULCHED AREAS SHALL SHOW ACTIVE, HEALTHY GROWTH. BARE AREAS LARGER THAN TWELVE SQUARE INCHES MUST BE RESODDED OR RESEEDED (AS APPROPRIATE) PRIOR TO FINAL ACCEPTANCE. ALL SODDED TURF SHALL BE NEATLY MOWED.

J. WARRANTY PERIOD, PLANT GUARANTEE AND REPLACEMENTS
1. THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL TREES, SHRUBS, PERENNIALS, SOID, SEEDED/HYDROMULCHED AREAS, AND IRRIGATION SYSTEMS FOR A PERIOD OF ONE YEAR FROM THE DATE OF THE OWNER'S FINAL ACCEPTANCE (90 DAYS FOR ANNUAL PLANTS). THE CONTRACTOR SHALL REPLACE, AT HIS OWN EXPENSE AND TO THE SATISFACTION OF THE OWNER, ANY PLANTS WHICH DIE IN THAT TIME, OR REPAIR ANY PORTIONS OF THE IRRIGATION SYSTEM WHICH OPERATE IMPROPERLY.
2. AFTER THE INITIAL MAINTENANCE PERIOD AND DURING THE GUARANTEE PERIOD, THE LANDSCAPE CONTRACTOR SHALL ONLY BE RESPONSIBLE FOR REPLACEMENT OF PLANTS WHEN PLANT DEATH CANNOT BE ATTRIBUTED DIRECTLY TO OVERWATERING OR OTHER DAMAGE BY HUMAN ACTIONS.

K. PROVIDE A MINIMUM OF (2) COPIES OF RECORD DRAWINGS TO THE OWNER UPON COMPLETION OF WORK. A RECORD DRAWING IS A RECORD OF ALL CHANGES THAT OCCURRED IN THE FIELD AND THAT ARE DOCUMENTED THROUGH CHANGE ORDERS, ADDENDA, OR CONTRACTOR/CONSULTANT DRAWING MARKUPS.

SWPPP SEED ESTABLISHMENT NOTES

1. THE LANDSCAPE CONTRACTOR SHALL SEED ALL PONDS AND OUTLOTS (AS APPLICABLE) AS SOON AS POSSIBLE AFTER COMPLETION OF GRADING OPERATIONS. SOIL PREPARATION MEASURES IN AREAS TO BE SEEDED SHALL BE COMPLETED PRIOR TO SEEDING.

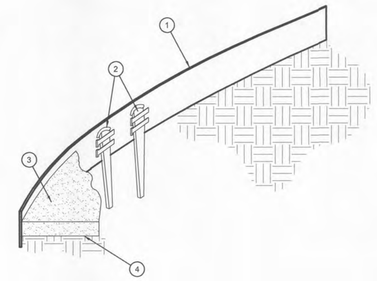
2. FOR PROPER ESTABLISHMENT, SEED SHALL BE INSTALLED WHEN AT LEAST THREE MONTHS REMAIN IN THE GROWING SEASON. IF LESS THAN THREE MONTHS REMAIN IN THE GROWING SEASON AT THE TIME OF SEEDING, THE LANDSCAPE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE LANDSCAPE ARCHITECT AND OWNER.

3. THE IRRIGATION SYSTEM FOR SEEDED AREAS SHALL BE FULLY OPERATIONAL AT THE TIME OF SEEDING. IN ORDER TO ENSURE PROPER WORKING OF THE IRRIGATION SYSTEM AND PRESERVE PRODUCT WARRANTY PERIODS, NO SUBSTITUTIONS OF IRRIGATION EQUIPMENT ARE PERMITTED WITHOUT THE EXPRESS WRITTEN PERMISSION OF THE LANDSCAPE ARCHITECT.

4. AFTER SEEDING OPERATIONS ARE COMPLETE, THE LANDSCAPE CONTRACTOR SHALL INSTALL EROSION CONTROL MATS PER MANUFACTURER'S INSTRUCTIONS OVER ALL SEEDED AREAS.

5. AFTER SEEDING IS COMPLETED, THE LANDSCAPE CONTRACTOR SHALL SET THE IRRIGATION CONTROLLER SCHEDULE SUCH THAT SEED MAY BE PROPERLY GERMINATED AND HEALTHY SEEDLING GROWTH SUSTAINED. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR ADJUSTING THE IRRIGATION SCHEDULE AS NEEDED THROUGH THE END OF THE LANDSCAPE MAINTENANCE PERIOD TO ENSURE SEEDLING SURVIVAL.

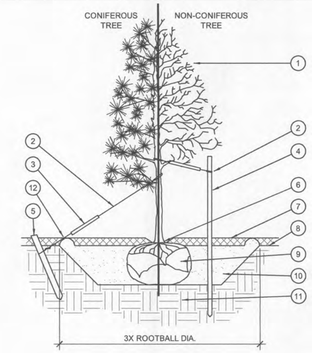
6. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR ADEQUATE SEEDLING COVERAGE AND GROWTH ("FINAL STABILIZATION") AT THE TIME OF SWPPP CLOSEOUT, AS DEFINED BY THE STATE AGENCY OVEERSEEING SWPPP PERMITS. IF FINAL STABILIZATION IS NOT ACHIEVED TO THE SATISFACTION OF THE STATE AGENCY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADDITIONAL CORRECTIVE MEASURES, AT HIS OWN COST, TO SATISFY SWPPP REQUIREMENTS AND ENSURE TIMELY SWPPP CLOSEOUT. THESE MEASURES MAY INCLUDE, AT THE OWNER'S OPTION, RESEEDING OF SPARESELY GERMINATED AREAS AND/OR INSTALLATION OF SOD IN ALL SEEDED AREAS.



1. ROLLED-TOP STEEL EDGING PER PLANS.
2. TAPERED STEEL STAKES.
3. MULCH, TYPE AND DEPTH PER PLANS.
4. FINISH GRADE.

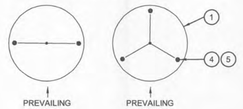
NOTES:
1) INSTALL EDGING SO THAT STAKES WILL BE ON INSIDE OF PLANTING BED.
2) BOTTOM OF EDGING SHALL BE BURIED A MINIMUM OF 1" BELOW FINISH GRADE.
3) TOP OF MULCH SHALL BE 1" LOWER THAN TOP OF EDGING.

D STEEL EDGING
SCALE: NOT TO SCALE



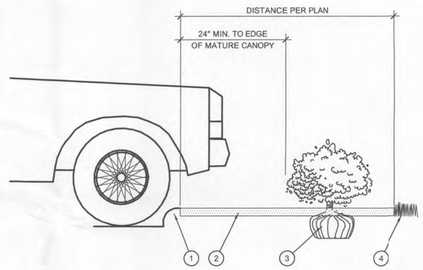
1. TREE CANOPY.
2. CINCH-TIES (24" BOX TREES AND SMALLER) OR 12 GAUGE GALVANIZED WIRE WITH NYLON TREE STRAPS AT TREE AND STAKE (36" BOX TREES AND LARGER). SECURE TIES OR STRAPS TO TRUNK JUST ABOVE LOWEST MAJOR BRANCHES.
3. 2/4" X 3/4" P.V.C. MARKERS OVER WIRES.
4. GREEN STEEL T-POSTS. EXTEND POSTS 12" MIN. INTO UNDISTURBED SOIL.
5. PRESSURE-TREATED WOOD DEADMAN, TWO PER TREE (MIN.). BURY OUTSIDE OF PLANTING PIT AND 18" MIN. INTO UNDISTURBED SOIL.
6. TRUNK FLARE.
7. MULCH, TYPE AND DEPTH PER PLANS. DO NOT PLACE MULCH WITHIN 6" OF TRUNK.
8. FINISH GRADE.
9. ROOT BALL.
10. BACKFILL. AMEND AND FERTILIZE ONLY AS RECOMMENDED IN SOIL FERTILITY ANALYSIS.
11. UNDISTURBED NATIVE SOIL.
12. 4" HIGH EARTHEN WATERING BASIN.

STAKING EXAMPLES (PLAN VIEW)



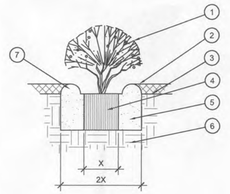
NOTES:
1. SCARIFY SIDES OF PLANTING PIT PRIOR TO SETTING TREE.
2. REMOVE EXCESS SOIL APPLIED ON TOP OF THE ROOTBALL THAT COVERS THE ROOT FLARE. THE PLANTING HOLE DEPTH SHALL BE SUCH THAT THE ROOTBALL RESTS ON UNDISTURBED SOIL, AND THE ROOT FLARE IS 3"-5" ABOVE FINISH GRADE.
3. FOR B&B TREES, CUT OFF BOTTOM 1/3 OF WIRE BASKET BEFORE PLACING TREE IN HOLE, CUT OFF AND REMOVE REMAINDER OF BASKET AFTER TREE IS SET IN HOLE. REMOVE ALL NYLON TIES, TWINE, ROPE, AND OTHER PACKING MATERIAL. REMOVE AS MUCH BURLAP FROM AROUND ROOTBALL AS IS PRACTICAL.
4. REMOVE ALL NURSERY STAKES AFTER PLANTING.
5. FOR TREES OVER 3" CALIPER AND TREES 36" BOX AND LARGER, USE THREE STAKES OR DEADMEN (AS APPROPRIATE), SPACED EVENLY AROUND TREE.
6. STAKING SHALL BE TIGHT ENOUGH TO PREVENT TRUNK FROM BENDING, BUT LOOSE ENOUGH TO ALLOW SOME TRUNK MOVEMENT IN WIND.

A TREE PLANTING
SCALE: NOT TO SCALE



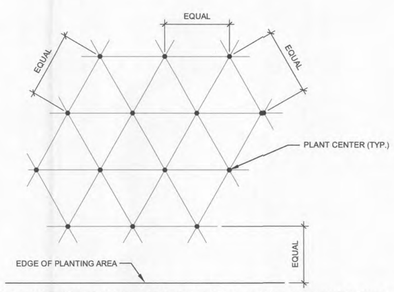
1. CURB.
2. MULCH LAYER.
3. PLANT.
4. TURF (WHERE SHOWN ON PLAN).

E HEDGE PLANTING AT PARKING AREA
SCALE: NOT TO SCALE



1. SHRUB, PERENNIAL, OR ORNAMENTAL GRASS.
2. MULCH, TYPE AND DEPTH PER PLANS. PLACE NO MORE THAN 1" OF MULCH WITHIN 6" OF PLANT CENTER..
3. FINISH GRADE.
4. ROOT BALL.
5. BACKFILL. AMEND AND FERTILIZE ONLY AS RECOMMENDED IN SOIL FERTILITY ANALYSIS.
6. UNDISTURBED NATIVE SOIL.
7. 3" HIGH EARTHEN WATERING BASIN.

B SHRUB AND PERENNIAL PLANTING
SCALE: NTS



NOTE: ALL PLANTS SHALL BE PLANTED AT EQUAL TRIANGULAR SPACING (EXCEPT WHERE SHOWN ON PLANS AS INFORMAL GROUPINGS). REFER TO PLANT LEGEND FOR SPACING DISTANCE BETWEEN PLANTS.

1) STEP 1: DETERMINE TOTAL PLANTS FOR THE AREA WITH THE FOLLOWING FORMULA:
TOTAL AREA / AREA DIVIDER = TOTAL PLANTS

PLANT SPACING	AREA DIVIDER	PLANT SPACING	AREA DIVIDER
6"	0.22	18"	1.95
8"	0.39	24"	3.46
10"	0.60	30"	5.41
12"	0.87	36"	7.79
15"	1.35		

2) STEP 2: SUBTRACT THE ROW (S) OF PLANTS THAT WOULD OCCUR AT THE EDGE OF THE PLANTED AREA WITH THE FOLLOWING FORMULA: TOTAL PERIMETER LENGTH / PLANT SPACING = TOTAL PLANT SUBTRACTION

EXAMPLE: PLANTS AT 18" O.C. IN 100 SF PLANTING AREA, 40 LF PERIMETER
STEP 1: 100 SF/1.95 = 51 PLANTS
STEP 2: 51 PLANTS - (40 LF / 1.95 = 21 PLANTS) = 30 PLANTS TOTAL

C PLANT SPACING
SCALE: NTS

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PLANTING SPECIFICATIONS AND DETAILS

Revisions		
No.	Date	Description
	Date	

Proj No:	P2016.473.002
Date:	12/02/2016
Designed By:	
Drawn By:	
Scale:	As noted
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