State of Utah

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Department of Administrative Services
KIMBERLY K. HOOD
Executive Director

Division of Facilities Construction and Management
GREGG BUXTON
Director

ADDENDUM #4

Date: May 27, 2009

To: Contractors

From: S'ean Crawford, Project Manager, DFCM

Reference: Entrance Replacement and Landscaping Improvements
Department of Workforce Services – Provo, Utah
DFCM Project No. 08071920

Subject: **Addendum No. 4**

Addendum	1	page
Revised Schedule	1	page
Architects Addendum #4	35	pages
Total	**37**	**pages**

Note: This Addendum shall be included as part of the Contract Documents. Items in this Addendum apply to all drawings and specification sections whether referenced or not involving the portion of the work added, deleted, modified, or otherwise addressed in the Addendum. Acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification.

4.1 SCHEDULE CHANGES – The Revised Schedule is attached, the only change in schedule per this addendum is the Addendum Issue date is moved from Tuesday, May 26, 2009 at 2:00 pm to Wednesday, May 27, 2009 at 2:00 pm.

The Bid Date remains the same as issued in addendum #2.

4.2 Attached are the contractor's questions with response, additional specifications and additional details.

End of Addendum #4

STATE OF UTAH - DEPARTMENT OF ADMINISTRATIVE SERVICES

Division of Facilities Construction and Management

DFCM

MULTI-STEP PROJECT SCHEDULE
REVISED PER ADDENDUM #4 – May 27, 2009

PROJECT NAME: **Department of Workforce Services – Provo Entrance Replacement and Landscaping Improvements**

DFCM PROJECT NO. : **08071920**

Event	Day	Date	Time	Place
Request for Proposal Available - NOT including Plans and Specifications	*Wednesday*	April 15, 2009	10:00 AM	DFCM 4110 State Office Building SLC, UT and DFCM web site*
Mandatory Pre-Submittal Meeting, Plans and Specifications will be posted on the DFCM web site and made available at the Mandatory Meeting.	*Wednesday*	April 29, 2009	2:00 PM	Department of Workforce Services – North Provo Office 1550 N Freedom Blvd. Provo, Utah 84604
Last Day to Submit Questions on Shortlisting (In Writing)	*Tuesday*	May 5, 2009	4:00 PM	*S'ean Crawford* DFCM Project Manager E-mail: scrawford@utah.gov Fax: 801-538-3267
Addendum on Shortlisting	*Thursday*	May 7, 2009	2:00 PM	DFCM web site*
List of References, Statement of Qualifications, Project Management Plan, and Termination/Debarment Certification Due	*Tuesday*	May 12, 2009	12:00 NOON	DFCM 4110 State Office Building SLC, UT
Short-List Announced	*Thursday*	May 20 2009	4:00 PM	DFCM web site*
Notice: Only Short-Listed Firms Will Be Allowed To Bid On This Project				
Last Day to Submit Questions (In Writing)	*Thursday*	May 22, 2009	4:00 PM	*S'ean Crawford* DFCM Project Manager E-mail: scrawford@utah.gov Fax: 801-538-3267
Final Addendum (exception for bid delays)	***Wednesday***	**May 27, 2009**	**2:00 PM**	**DFCM web site***
Prime Contractors Turn in Bid and Bid Bond/Bid Opening in DFCM Conference Room	*Tuesday*	June 2, 2009	2:30 PM	DFCM 4110 State Office Building SLC, UT
Subcontractors List Due	*Wednesday*	June 3, 2009	2:30 PM	DFCM 4110 State Office Building SLC, UT Fax (801)-538-3677
Project Completion Date	*Monday*	*September 14, 2009*	*5:00 PM*	

*** DFCM's web site address is http://dfcm.utah.gov**

HFS*ARCHITECTS*
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Salt Lake City, Utah 84115
801-596-0691 • Fax: 596-0693 • www.hfsa.com

Addendum No. 4

Project:	Entrance Replacement & Landscaping Improvements	Date:	26 May 2009
Address:	1550 North Freedom Boulevard	Project No.:	DFCM 08071920 / HFSA 0821.01
City, State:	Provo, Utah	Agency:	Department of Workforce Services

To all Bidders of Record:

This addendum forms a part of the contract documents and modifies the original specifications and drawings as noted below. Items of general information are included without reference to the plans and specifications. Revisions to the specifications are referenced by page number and paragraph heading on that page. Revisions to the drawings are reference by the drawing number. Unless otherwise stated, any changes herein offset only the specific drawings, words, or paragraphs mentioned, and the balance of the drawings and specifications remain in full force. Acknowledge receipt of this addendum in the space provided on the Bid form. Failure to do so will subject the Bidder to disqualification.

Item No.	Section or Sheet No.	Description
GENERAL ITEMS		
4 -1	Question	Could you verify that the new planter wall placed on existing concrete as detailed on B3/SE502, or the existing planter wall on the existing ramp east side, remains as constructed except for the removal of existing railing? ***Answer: Yes.***
4 -2	Question	Do we place new planter wall on this exiting concrete wall using the existing slope, or do we cut it to a certain elevation prior to placing block material? ***Answer: You can do it either way, which ever is most cost efficient.***
4 -3	Question	Is there a sheet on the plans that we can use to measure the soffit areas or will we need to field measure? ***Answer: The soffit are is shown on Sheet AS101, but not all of the soffit needs to be repaired which is why we are looking for a unit (SF) cost for the work.***
4 -4	Question	Is there a specification for soffit repair/painting etc? ***Answer: There is a exterior painting specification 09911. The unit price should include as SF cost to reattach loose soffit boards, sand and repaint.***
4 -5	Question	I assume that there is new 4" concrete sidewalk south of the new ramp between the building, ramp and curb and gutter where we have removed planting. The same goes for the other side where the existing flagpole is now located. ***Answer: Delete the note on Sheet AS102 in these areas 'EXIST. LANDSCAPE TO BE DEMOLISHED'. Existing landscaping in these areas is to remain, protect from damage. See attached Enlarged Plan.***
4 -6	Question	Will this work require a building permit from Provo City? ***Answer: No.***

Item No.	Section or Sheet No.	Description
4 -7	Question	Can we modify the fire riser in the wall during construction, then place it back thru walls and planters via a sleeve upon completion of the walls? ***Answer: Yes.***
4 -8	Question	I assume it must be in working order at all times? ***Answer: Yes.***
4 -9	Question	Could we install foam in the largest sections possible thus reducing cost and reducing joints? ***Answer: Yes.***
4 -10	Question	Can we step the foam surface with a minimum of twelve inches gravel cap? ***Answer: Minimum of 6", maximum of 12".***
4 -11	Question	Also, is the foam specifications intent to reduce weight of ramps and planter areas over subsurface conditions? If not, is the foam necessary, or could the same treatment be completed with sand backfill? ***Answer: The intent is to reduce weight and the any additional load of the existing concrete moat walls.***
SPECIFICATION ITEMS		
4 -12	01230-2	3.1. Schedule of Alternates: Add the following: ***E. Alternate NO. 5: Provide new landscape gravel in parking lot island, six (6) in front of the building and two (2) behind the building – eight (8) total.*** See Sheets AS101 and AS104 for more information.
4 -13	01270	Clarification: Provide unit (SF) cost to reattach, sand, prep and repaint areas of soffit loosed by vines (already removed).
4 -14	02741	Add the attached specification section 02741 Hot-Mix Asphalt Paving.
4 -15	328400	Add the attached specification section 328400 Lawn Sprinkler Piping.
4 -16	329300	Add the attached specification section 329300 Landscaping.
DRAWING ITEMS		
4 -17	AS103	Add the following: Completely demolish the existing landscaping on the north side of the building between the moat and the sidewalk, the northeast corner between the building and sidewalk, and the southeast corner between the building and sidewalk.
4 -18	AS103	Clarification: Completely remove all plants, trees and stumps in building moats.
4 -19	AS104	Add the attached Enlarged Plan.
4 -20	AS104	Clarification: Provide new concrete wheel stops and handicapped signs for each of

Item No.	Section or Sheet No.	Description
		the new handicapped stalls indicated.
4 -21	AS104	Clarification: Provide new pavement striping for entire center isle parking as shown on Sheet AS104. Provide new pavement striping for first three (3) stalls on south side of north parking isle.
4 -22	AS105	Add the following: Provide new landscape gravel to match the existing on the north side of the building between the moat and the sidewalk, the northeast corner between the building and sidewalk, and the southeast corner between the building and sidewalk.
4 -23	AS105	Add the attached Planting & Irrigation Plans & Landscape Details drawing.
4 -24	AS105	Clarification: New landscape gravel in the building moats to be evenly sloped to a 12" deep swale running along the center line of the new river rock.
4 -25	AS501	Add the attached four (4) ADA details.
4 -26	AS501	Add the attached Guardrail Elevation.
4 -27	AS501	Clarification: Provide drip on both sides of precast concrete caps.
PRIOR APPROVALS		
4 -28		None this addendum.
ATTACHMENTS		
4 -29	9 pages	Specification section 02741 Hot-Mix Asphalt Paving.
4 -30	8 pages	Specification section 328400 Lawn Sprinkler Piping.
4 -31	8 pages	Specification section 329300 Landscaping.
4 -32	1 page	Enlarged Plan.
4 -33	1 page	Planting & Irrigation Plans & Landscape Details.
4 -34	4 pages	ADA Details.
4 -35	1 page	Guardrail Elevation.

SECTION 02741 - HOT-MIX ASPHALT PAVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Hot-mix asphalt paving.
2. Pavement-marking paint.

B. Related Sections include the following:

1. Division 2 Section "Earthwork" for aggregate subbase and base courses and for aggregate pavement shoulders.

1.3 DEFINITIONS

A. Hot-Mix Asphalt Paving Terminology: Refer to ASTM D 8 for definitions of terms.

B. DOT: Department of Transportation.

1.4 SYSTEM DESCRIPTION

A. Provide hot-mix asphalt paving according to materials, workmanship, and other applicable requirements of standard specifications of state or local DOT.

1. Standard Specification: State of Utah “Standard Specifications for Road and Bridge Construction” most current edition.
2. Measurement and payment provisions and safety program submittals included in standard specifications do not apply to this Section.

1.5 SUBMITTALS

A. Product Data: For each type of product indicated. Include technical data and tested physical and performance properties.

B. Job-Mix Designs: Certification, by authorities having jurisdiction, of approval of each job mix proposed for the Work.

C. Job-Mix Designs: For each job mix proposed for the Work.

D. Shop Drawings: Indicate pavement markings, lane separations, and defined parking spaces. Indicate, with international graphics symbol, spaces dedicated to people with disabilities.

E. Qualification Data: For manufacturer.

F. Material Test Reports: For each paving material.

G. Material Certificates: For each paving material, signed by manufacturers.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer.

1. Manufacturer shall be a paving-mix manufacturer registered with and approved by authorities having jurisdiction or the DOT of the state in which Project is located.

B. Testing Agency Qualifications: Qualified according to ASTM D 3666 for testing indicated, as documented according to ASTM E 548.

C. Regulatory Requirements: Comply with of Utah Department of Transportation for asphalt paving work.

D. Asphalt-Paving Publication: Comply with AI MS-22, "Construction of Hot Mix Asphalt Pavements," unless more stringent requirements are indicated.

E. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination." Review methods and procedures related to hot-mix asphalt paving including, but not limited to, the following:

1. Review proposed sources of paving materials, including capabilities and location of plant that will manufacture hot-mix asphalt.
2. Review condition of subgrade and preparatory work.
3. Review requirements for protecting paving work, including restriction of traffic during installation period and for remainder of construction period.
4. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver pavement-marking materials to Project site in original packages with seals unbroken and bearing manufacturer's labels containing brand name and type of material, date of manufacture, and directions for storage.

B. Store pavement-marking materials in a clean, dry, protected location within temperature range required by manufacturer. Protect stored materials from direct sunlight.

1.8 PROJECT CONDITIONS

A. Environmental Limitations: Do not apply asphalt materials if subgrade is wet or excessively damp or if the following conditions are not met:

1. Prime and Tack Coats: Minimum surface temperature of 60 deg F.
2. Slurry Coat: Comply with weather limitations of ASTM D 3910.
3. Asphalt Base Course: Minimum surface temperature of 40 deg F and rising at time of placement.
4. Asphalt Surface Course: Minimum surface temperature of 60 deg F at time of placement.

B. Pavement-Marking Paint: Proceed with pavement marking only on clean, dry surfaces and at a minimum ambient or surface temperature of 40 deg F for oil-based materials, 50 deg F for water-based materials, and not exceeding 95 deg F.

PART 2 - PRODUCTS

2.1 AGGREGATES

A. General: Use materials and gradations that have performed satisfactorily in previous installations.

B. Coarse Aggregate: ASTM D 692, sound; angular crushed stone, crushed gravel, or properly cured, crushed blast-furnace slag.

C. Fine Aggregate: ASTM D 1073, sharp-edged natural sand or sand prepared from stone, gravel, properly cured blast-furnace slag, or combinations thereof.

1. For hot-mix asphalt, limit natural sand to a maximum of 20 percent by weight of the total aggregate mass.

D. Mineral Filler: ASTM D 242, rock or slag dust, hydraulic cement, or other inert material.

2.2 ASPHALT MATERIALS

A. Asphalt Cement: UDOT Standard Specification Section 704.

B. Prime Coat: Asphalt emulsion prime complying with UDOT requirements.

C. Tack Coat: UDOT Standard Specification 404.

D. Water: Potable.

2.3 AUXILIARY MATERIALS

A. Herbicide: Commercial chemical for weed control, registered by the EPA. Provide in granular, liquid, or wettable powder form.

B. Sand: ASTM D 1073, Grade Nos. 2 or 3.

C. Pavement-Marking Paint: Alkyd-resin type, lead and chromate free, ready mixed, complying with FS TT-P-115, Type I or AASHTO M 248, Type N.

1. Color: Match existing color.

D. Wheel Stops: Precast, air-entrained concrete, 2500-psi minimum compressive strength, 4-1/2 inches high by 9 inches wide by 72 inches long. Provide chamfered corners, drainage slots on underside, and holes for anchoring to substrate.

1. Dowels: Galvanized steel, 3/4-inch diameter, 10-inch minimum length.

2.4 MIXES

A. Hot-Mix Asphalt: Dense, hot-laid, hot-mix asphalt plant mixes designed according to procedures in UDOT Standard Specification Section 402 and complying with the following requirements:

1. Provide mixes with a history of satisfactory performance in geographical area where Project is located.
2. Base Course: comply with UDOT standard specification
3. Surface Course: comply with UDOT standard specification

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that subgrade is dry and in suitable condition to support paving and imposed loads.

B. Proof-roll subbase using heavy, pneumatic-tired rollers to locate areas that are unstable or that require further compaction.

C. Proceed with paving only after unsatisfactory conditions have been corrected.

3.2 SURFACE PREPARATION

A. General: Immediately before placing asphalt materials, remove loose and deleterious material from substrate surfaces. Ensure that prepared subgrade is ready to receive paving.

1. Sweep loose granular particles from surface of unbound-aggregate base course. Do not dislodge or disturb aggregate embedded in compacted surface of base course.

B. Herbicide Treatment: Apply herbicide according to manufacturer's recommended rates and written application instructions. Apply to dry, prepared subgrade or surface of compacted-aggregate base before applying paving materials.

1. Mix herbicide with prime coat if formulated by manufacturer for that purpose.

C. Prime Coat: Apply uniformly over surface of compacted unbound-aggregate base course at a rate of 0.15 to 0.50 gal./sq. yd. Apply enough material to penetrate and seal but not flood surface. Allow prime coat to cure for 72 hours minimum.

1. If prime coat is not entirely absorbed within 24 hours after application, spread sand over surface to blot excess asphalt. Use enough sand to prevent pickup under traffic. Remove loose sand by sweeping before pavement is placed and after volatiles have evaporated.
2. Protect primed substrate from damage until ready to receive paving.

3.3 HOT-MIX ASPHALT PLACING

A. Machine place hot-mix asphalt on prepared surface, spread uniformly, and strike off. Place asphalt mix by hand to areas inaccessible to equipment in a manner that prevents segregation of mix. Place each course to required grade, cross section, and thickness when compacted.

1. Place hot-mix asphalt base course in number of lifts and thicknesses indicated.
2. Spread mix at minimum temperature of 250 deg F.
3. Begin applying mix along centerline of crown for crowned sections and on high side of one-way slopes, unless otherwise indicated.
4. Regulate paver machine speed to obtain smooth, continuous surface free of pulls and tears in asphalt-paving mat.

B. Place paving in consecutive strips not less than 10 feet wide unless infill edge strips of a lesser width are required.

1. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips. Complete a section of asphalt base course before placing asphalt surface course.

C. Promptly correct surface irregularities in paving course behind paver. Use suitable hand tools to remove excess material forming high spots. Fill depressions with hot-mix asphalt to prevent segregation of mix; use suitable hand tools to smooth surface.

3.4 JOINTS

A. Construct joints to ensure a continuous bond between adjoining paving sections. Construct joints free of depressions with same texture and smoothness as other sections of hot-mix asphalt course.

1. Clean contact surfaces and apply tack coat to joints.
2. Offset longitudinal joints, in successive courses, a minimum of 6 inches.
3. Offset transverse joints, in successive courses, a minimum of 24 inches.
4. Construct transverse joints as described in AI MS-22, "Construction of Hot Mix Asphalt Pavements."
5. Compact joints as soon as hot-mix asphalt will bear roller weight without excessive displacement.
6. Compact asphalt at joints to a density within 2 percent of specified course density.

3.5 COMPACTION

A. General: Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement. Compact hot-mix paving with hot, hand tampers or vibratory-plate compactors in areas inaccessible to rollers.

1. Complete compaction before mix temperature cools to 185 deg F.

B. Breakdown Rolling: Complete breakdown or initial rolling immediately after rolling joints and outside edge. Examine surface immediately after breakdown rolling for indicated crown, grade, and smoothness. Correct laydown and rolling operations to comply with requirements.

C. Intermediate Rolling: Begin intermediate rolling immediately after breakdown rolling while hot-mix asphalt is still hot enough to achieve specified density. Continue rolling until hot-mix asphalt course has been uniformly compacted to the following density:

1. Average Density: 96 percent of reference laboratory density according to AASHTO T 245, but not less than 94 percent nor greater than 100 percent.
2. Average Density: 92 percent of reference maximum theoretical density according to ASTM D 2041, but not less than 90 percent nor greater than 96 percent.

D. Finish Rolling: Finish roll paved surfaces to remove roller marks while hot-mix asphalt is still warm.

E. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while asphalt is still hot; compact thoroughly.

F. Repairs: Remove paved areas that are defective or contaminated with foreign materials and replace with fresh, hot-mix asphalt. Compact by rolling to specified density and surface smoothness.

G. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.

H. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

3.6 INSTALLATION TOLERANCES

A. Thickness: Compact each course to produce the thickness indicated within the following tolerances:

1. Base Course: 8 inches, plus or minus ½ inch.
2. Surface Course: 3 inches, plus 1/4 inch, no minus.

B. Surface Smoothness: Compact each course to produce a surface smoothness within the following tolerances as determined by using a 10-foot straightedge applied transversely or longitudinally to paved areas:

1. Base Course: Plus or minus ½ inch.
2. Surface Course: Plus 1/4 inch, no minus.
3. Crowned Surfaces: Test with crowned template centered and at right angle to crown. Maximum allowable variance from template is 1/4 inch.

3.7 ASPHALT RAMPS

A. Construct hot-mix asphalt ramps over compacted pavement surfaces. Apply a light tack coat unless pavement surface is still tacky and free from dust. Spread mix at minimum temperature of 250 deg F.

1. Asphalt Mix: Same as pavement surface-course mix.

B. Place hot-mix asphalt to cross section indicated or, if not indicated, to local standard shapes, by machine or by hand. Tamp hand-placed materials and screed to smooth finish. PAVEMENT MARKING

C. Do not apply pavement-marking paint until layout, colors, and placement have been verified with Architect.

D. Allow paving to age for 30 days before starting pavement marking.

E. Sweep and clean surface to eliminate loose material and dust.

F. Apply paint with mechanical equipment to produce pavement markings, of dimensions indicated, with uniform, straight edges. Apply at manufacturer's recommended rates to provide a minimum wet film thickness of 15 mils.

3.8 PAVEMENT MARKING

A. Do not apply pavement-marking paint until layout, colors, and placement have been verified with Architect.

B. Allow paving to age for [30] [90] <Insert number> days before starting pavement marking.

C. Sweep and clean surface to eliminate loose material and dust.

D. Apply paint with mechanical equipment to produce pavement markings, of dimensions indicated, with uniform, straight edges. Apply at manufacturer's recommended rates to provide a minimum wet film thickness of 15 mils.

1. Broadcast glass beads uniformly into wet pavement markings at a rate of 6 lb/gal..

3.9 WHEEL STOPS

A. Install wheel stops in bed of adhesive as recommended by manufacturer.

B. Securely attach wheel stops to pavement with not less than two galvanized-steel dowels embedded at one-quarter to one-third points. Securely install dowels into pavement and bond to wheel stop. Recess head of dowel beneath top of wheel stop.

3.10 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to perform field tests and inspections and to prepare test reports.

1. Testing agency will conduct and interpret tests and state in each report whether tested Work complies with or deviates from specified requirements.

B. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

C. Thickness: In-place compacted thickness of hot-mix asphalt courses will be determined according to ASTM D 3549.

D. Surface Smoothness: Finished surface of each hot-mix asphalt course will be tested for compliance with smoothness tolerances.

E. In-Place Density: Testing agency will take samples of uncompacted paving mixtures and compacted pavement according to ASTM D 979.

1. Reference maximum theoretical density will be determined by averaging results from four samples of hot-mix asphalt-paving mixture delivered daily to site, prepared according to ASTM D 2041, and compacted according to job-mix specifications.
2. In-place density of compacted pavement will be determined by testing core samples according to ASTM D 1188 or ASTM D 2726.

a. One core sample will be taken for every 1000 sq. yd. or less of installed pavement, with no fewer than 3 cores taken.

b. Field density of in-place compacted pavement may also be determined by nuclear method according to ASTM D 2950 and correlated with ASTM D 1188 or ASTM D 2726.

F. Remove and replace or install additional hot-mix asphalt where test results or measurements indicate that it does not comply with specified requirements.

END OF SECTION 02741

SECTION 328400 - LAWN SPRINKLER PIPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. The Irrigation Plan is diagrammatic. All lines, heads and equipment are shown in approximate locations for purposes of graphic display and shall not be considered as exact locations. The drawings shall not be measured. If any discrepancies shall arise in the layout or installation of the irrigation system, the contractor shall consult with the Landscape Architect. Failure to consult with the Landscape Architect prior to the installation of the system may result in the removal, re-installation or changes to the system at the contractors expense.

B. The contractor shall verify the existing water pressure at the point of connection. If the existing water pressure is less than 60 psi or greater than 90 psi, the contractor shall immediately notify the Landscape Architect before proceeding. If the existing water pressure is within the acceptable 60 - 90 psi, the contractor shall proceed with the installation of the system and a report of the existing water pressure shall be forwarded to the Landscape Architect.

C. This Section includes verification of the existing water pressure at the point of connection, piping, valves, point source irrigation system, and electrical control wiring.

D. In all instances the new trenches through the existing lawn areas are to receive NEW sod. Layout the piping configurations prior to the beginning of trenching operations. Use a sod cutting machine to remove the existing lawn and provide a smooth edge to receive the NEW sod pieces. All interfaces between the existing lawn and new sod pieces must be smooth and uniform in grade.

E. Insure that all trenches have been thoroughly settled with water before installing NEW sod.

F. All new pipes are to installed with a minimum of 12 inch separation between pipes, either horizontally or vertically.

G. The NEW irrigation system is being installed in conjunction with an EXISTING Irrigation System.

H. The existing irrigation system must **NOT** be disconnected until the new connections are ready to be made in order to preserve the integrity of the existing lawn, plants and trees.

1.3 DEFINITIONS

A. Circuit Piping: Downstream from control valves to sprinklers, specialties, and drain valves. Piping is under pressure during flow.

B. Pressure Piping: Downstream from point of connection to water distribution piping to and including control valves. Piping is under water distribution system pressure.

C. The following are industry abbreviations for plastic materials:

1. PVC: Polyvinyl chloride plastic.

1.4 SYSTEM PERFORMANCE REQUIREMENTS

A. Minimum Water Coverage: 100 percent of planting areas.

B. Minimum Working Pressures: The following are minimum pressure requirements for piping, valves, and specialties, unless otherwise indicated:

1. Pressure Piping: 100 psi

2. Circuit Piping: 100 psi

1.5 SUBMITTALS

A. Product Data: Include pressure rating, rated capacity, settings, and electrical data of selected models for the following:

1. Wire Splice Fittings
2. Plastic Valve boxes.
3. PVC Pipe.
4. PVC Fittings.
5. Primer & Glue.
6. Ball Valves
7. Automatic Electric Control Valves. (Plastic)
8. Point source fittings and nozzles.

1.6 QUALITY ASSURANCE

A. Product Options: Drawings indicate size, profiles, and dimensional requirements of lawn sprinkler piping components and are based on specific types and models indicated.

B. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction.

C. Comply with NFPA 70, "National Electrical Code," for electrical connections between wiring and electrically operated devices.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Preparation for Transport: Prepare valves according to the following:

1. Ensure that valves are dry and internally protected against rust and corrosion.
2. Protect valves against damage to threaded ends and flange faces.
3. Set valves in best position for handling. Set valves closed to prevent rattling.

B. During Storage: Use precautions for valves according to the following:

1. Do not remove end protectors unless necessary for inspection; then, reinstall for storage.
2. Protect from weather. Store indoors and maintain temperature higher than ambient dew-point temperature. Support off ground or pavement in watertight enclosures when outdoor storage is necessary.

C. Deliver piping with factory-applied end caps. Maintain end caps through shipping, storage, and handling to prevent pipe-end damage and to prevent entrance of dirt, debris, and moisture.

D. Protect stored piping from moisture and dirt. Elevate above grade. Do not exceed structural capacity of floor when storing inside.

E. Protect flanges, fittings, and specialties from moisture and dirt.

F. Store plastic piping protected from direct sunlight. Support to prevent sagging and bending.

1.8 PROJECT CONDITIONS

A. Research public utility records, and verify existing utility locations.

B. Investigate and determine available water supply water pressure and flow characteristics.

C. Site Information: Reports on subsurface condition investigations made during design of Project are available for informational purposes only; data in reports are not intended as warranties of accuracy or continuity of conditions (between soil borings). Owner assumes no responsibility for interpretations or conclusions drawn from this information.

1.9 SEQUENCING AND SCHEDULING

A. Maintain uninterrupted water service to building during normal working hours. Arrange for temporary water shutoff with Owner.

B. Arrange for water shut-off with Owner.

C. Coordinate lawn sprinkler piping with utility work.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Bronze Ball Valves:
   a. Apollo Ball Valves; Conbraco Industries, Inc.
   b. Grinnell Corp.; Mueller Co.; Water Products Div.

2. Plastic, Automatic Control Valves:
   a. Rain Bird Sprinkler Mfg. Corp.
   b. Toro Co., Irrigation Div.

3. Control-Valve Boxes:
   a. AMETEK; Plymouth Products Div.
   b. Carson-Brooks Plastics, Inc.

4. GATE VALVES

a. American Flow Control

2.2 PIPES, TUBES AND CONDUITS

A. 3" diameter and less PVC Pipe: ASTM D 1785, PVC 1120 compound, Schedule 40 -solvent weld joints.

B. Flex swing risers shall be THICK-WALLED POLY PIPE as manufactured by Rainbird. This pipe is to be used only on 15 to 25 foot diameter spray heads between heads and lateral lines and shall not exceed a distance of 5 feet.

2.3 PIPE FITTINGS

A. PVC Socket Fittings for Circuit Piping, Schedule 40: ASTM D 2466.

B. PVC Socket Fittings for Pressure Piping, Schedule 80: ASTM D 2467. PVC Threaded Fittings: ASTM D 2464..

2.4 VALVES AND VALVE SPECIALTIES

A. Electric remote control valves:

All electric remote control valves shall be of the size and type as specified on the Irrigation Legend.

B. Bronze Ball Valves: MSS SP-110, Class 150, 600-psi cold working pressure. Include bronze, two-piece construction body with regular port; chrome-plated brass ball; blowout-proof stem; PTFE seats and seals; threaded-end connections; and lever handle.

C. Control-Valve Boxes: PE, ABS, fiberglass, polymer concrete, or precast concrete box and cover, with open bottom, openings for piping, and designed for installing flush with grade. Include size as required for valves and service.

1. Drainage Backfill: Cleaned gravel or crushed stone, graded from 1 inch to 3/4 inch minimum.

PART 3 - EXECUTION

3.1 PREPARATION

A. Set stakes to identify proposed sprinkler locations. Obtain Architect's approval before excavation.

3.2 TRENCHING AND BACKFILLING

A. For excavating, trenching, and backfilling of trenches; All pipes shall be separated by 12 inches in either the vertical or horizontal direction. All trenches shall be dug a minimum of 14 inches deep and as wide as necessary to accommodate a 12 separation between all pipes. Material within 2 inches of any pipe shall be 1/4 inch minus, either existing material or imported as required

B. Drain Pockets: Excavate to sizes indicated. Backfill with cleaned gravel or crushed stone, graded from 1inch to 3/4 inch minimum, to 12 inches below grade. Cover gravel or crushed stone with sheet of asphalt-saturated felt and backfill remainder with excavated material.

C. Provide 2 inch minimum cover over top of underground piping.

3.3 TRENCHING AND BACKFILLING - POINT SOURCE IRRIGATION CIRCUIT

A. For excavating, trenching, and backfilling of trenches; Refer to details on drawings.

B. Install piping with manufacturer recommended stakes.

3.4 PIPING APPLICATIONS

A. Install components having pressure rating equal to or greater than system operating pressure.

B. Piping in control-valve boxes and aboveground may be joined with flanges instead of joints indicated.

C. Underground, Pressure Piping: Use the following:

1. 3-Inch and Smaller: Schedule 40 PVC pipe with solvent-cemented joints.

D. Circuit Piping: Use the following:

1. 2-Inch and Smaller: Schedule 40 PVC pipe, Schedule 40 PVC socket fittings, and solvent-cemented joints.

E. Underground Branches and Offsets at Sprinklers and Devices: flexible swing joints.

F. CONTROL WIRES (24 volt AC, nominal):

1. Wires connecting the remote control valves to the irrigation controller are single conductors, type **PE**. Its construction incorporates a solid copper conductor and polyethylene (PE) insulation with a minimum thickness of 0.045 inches. The wires shall be UL listed for direct burial in irrigation systems and be rated at a minimum of 30 VAC. Wire sizes and colors are defined in the irrigation plans and other specifications.

2. All control wires shall be taped together in a single bundle and installed directly beneath the mainline throughout the entire length of the control wire run from the farthest valve box to the controller.

3.5 VALVE APPLICATION

1. Underground, Shutoff-Duty Valves: Use the following:

2. 2-Inch and Smaller: Curb stop, with tee head, cast-iron curb-stop service box, and shutoff rod.

3. Control Valves: Refer to Irrigation Legend on Drawings.

3.6 JOINT CONSTRUCTION

A. The type of joints for pressure piping is dependent on the pipe sizes as herein specified. All joints must be allowed to set for a minimum of 24 hours prior to pressure testing.

B. Fittings on flex swing risers shall be barbed insert ells made of THICK-WALLED POLY PIPE as manufactured by Rainbird

3.7 PIPPING INSTALLATION

A. Locations and Arrangements: Provide Coordination Drawings.

B. Install piping at uniform slope of 0.5 percent minimum, down toward drain valves.

C. Install piping free of sags and bends.

D. Install groups of pipes parallel to each other with a 12 inch min. separation.

E. Install fittings for changes in direction and branch connections.

F. Install unions adjacent to valves and as per the detail on the drawings.

G. Lay piping on solid subbase, uniformly sloped without humps or depressions.

H. Install PVC piping in dry weather when temperature is above 40 deg F. Allow joints to cure at least 24 hours at temperature above 40 deg F before testing, unless otherwise recommended by manufacturer.

3.8 VALVE INSTALLATION

A. Underground Gate Valves: Install in valve box.

B. Underground Stop and Waste Valves: Install in cast iron curb box.

C. Electric Remote Control Valves: Install a maximum of 2 valves in valve box

D. Drain Valves: Install in 2" PVC sleeve with locking lid. Top of lid to be flush with finish grade.

3.9 FIELD QUALITY CONTROL

A. Testing: Hydrostatically test piping and valves before backfilling trenches. Piping may be tested in sections.
   1. Cap and test piping with static water pressure of 150 psi.

   2. Repair leaks and defects with new materials and retest system or portion thereof until satisfactory results are obtained.

3.10 CLEANING AND ADJUSTING

A. Flush dirt and debris from piping before installing sprinklers and other devices.

B. Adjust automatic control valves to provide flow rate of rated operating pressure required for each sprinkler circuit.

C. Carefully adjust lawn sprinklers so they will be not more than ½ inch below finish grade.

D. Adjust settings of controllers and automatic control valves.

3.11 COMMISSIONING

A. Starting Procedures: Follow manufacturer's written procedures. If no procedures are prescribed by manufacturers, proceed as follows:

1. Verify that specialty valves and their accessories are installed and operate correctly.

2. Verify that specified tests of piping are complete.

3. Verify that sprinklers and devices are correct type.

4. Verify that damaged sprinklers and devices are replaced with new materials.

5. Verify that potable-water supply connections have backflow preventers.

6. Energize circuits to electrical equipment and devices.

7. Adjust operating controls.

3.12 DEMONSTRATION

A. Demonstrate to Landscape Architect and the Owner's maintenance personnel operation of equipment, sprinklers, specialties, and accessories. Review maintenance information.

B. Provide seven days' advance written notice of demonstration.

3.13 WINTERIZATION OF THE SYSTEM

A. The entire irrigation system is designed to be winterized by attaching an air compressor to the quick coupler and "blow out" the pipes, valves and heads by the use of compressed air. **DO NOT** install automatic drains on the mainlines.

B. If the system is installed during the fall season and the Certificate of Substantial Completion is not issued, the Contractor shall winterize the entire system and all other water lines that have been charged during the installation or testing period of the system. The system must then be charged in the springtime of the next year and inspected for any deficiencies. All repairs must be made by the contractor at no expense to the owner.

3.14 CLOSEOUT

A. RECORD DRAWINGS -

1. As installation occurs, prepare accurate record drawing to be submitted before final inspection, including -

    a. Detail and dimension changes made during construction.

    b. Significant details and dimensions not shown in original Contract Documents.

    c. Field dimensioned locations of valve boxes, manual drains, quick-coupler valves, control wire runs not in mainline ditch, and both ends of sleeves.

    d. Take dimensions from permanent constructed surfaces or edges located at or above finish grade.

    e. Take and record dimensions at time of installation.

    f. Reduce copy of record drawing to half-size, color key circuits, and laminate both sides with 5 mil thick or heavier plastic. Install inside the controller cabinet.

B. OPERATIONS AND MAINTENANCE MANUAL DATA

    a. Provide INSTRUCTION MANUAL which lists complete instructions for system operation and maintenance, including winterizing.

END OF SECTION 328400

SECTION 329300 - LANDSCAPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Shrubs
2. Topsoil
3. Soil amendments
4. Fertilizers
5. Bark Mulch
6. Weed Barrier
7. Gravel Mulch

B. RELATED WORK: The following requirements pertain to the protection of existing trees.

1. All existing trees remaining on site during the construction period shall be treated as follows:

2. Do not damage the branches or trunk in any way.

3. Do not prune the tree, unless permission is obtained from the Landscape Architect.

4. Each existing tree has in inherent value of $5000.00. At the conclusion of the project, all existing trees will be inspected for damage and vitality. Any tree that is compromised in any way at this time will be analyzed and a fine will be determined or a replacement cost for the full amount will be assessed against the General Contractor.

5. Recommend protecting against soil compaction, contamination and grade change.

C. EXISTING LAWN CONDITIONS

1. The existing lawn on the site shall be maintained by installing a new irrigation system as called for on the drawings.

2. The existing lawn on the site shall be maintained by cutting and capping the existing irrigation system and installing a new irrigation system as called for on the drawings.

3. The cutting and capping of the existing irrigation system shall be completed at the beginning of the new construction.

4. The new irrigation system shall be installed at the BEGINNING OF THE WORK in order to provide water for the preservation of the lawn during the construction period.

5. The new irrigation valves shall be operated manually until the location for the existing

controller can be secured and installed OR the contractor may elect to install a temporary controller in a secure location. This temporary controller must be battery or solar operated; there will not be electricity available for some time on site.

6. This system shall be installed at the BEGINNING OF THE WORK in order to provide water for the preservation of the lawn during the construction period.

1.3 SUBMITTALS

A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections.

B. Product certificates signed by manufacturers certifying that their products comply with specified requirements.

1. Manufacturer's certified analysis for standard products.
2. Analysis for other materials by a recognized laboratory made according to methods established by the Association of Official Analytical Chemists, where applicable.
3. Label data substantiating that plants, trees, shrubs, and planting materials comply with specified requirements.
4. Certification of identifying source, including name and telephone number of supplier.

C. Qualification data for firms and persons specified in the "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses.

D. Material test reports from qualified independent testing agency indicating and interpreting test results relative to compliance of the following materials with requirements indicated.

1. Analysis of imported topsoil.

E. Maintenance instructions recommending procedures to be established by Owner for maintenance of landscaping during an entire year. Submit before expiration of required maintenance periods.

F. Landscape Rocks

1. Gravel Mulch - Provide a 10 pound sample of each specified gravel mujlch to Landscape Architect for approval. Color shall be ascalled for on the drawings and approved by Landscape Architect.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: Engage an experienced Installer who has completed landscaping work similar in material, design, and extent to that indicated for this Project and with a record of successful landscape establishment.

1. Installer's Field Supervision: Installer to maintain an experienced full-time supervisor on the Project site during times that landscaping is in progress.

B. Provide quality, size, genus, species, and variety of trees and shrubs indicated, complying with applicable requirements of ANSI Z60.1 "American Standard for Nursery Stock."

C. Topsoil Analysis: All topsoil is to be imported. Furnish a soil analysis for all sources of topsoil on the site, including any topsoils that are to be imported onto the site. This test is to be performed by a qualified independent soil-testing agency licenced in the State of Utah. This test must state

the percentages of organic matter, inorganic matter (silt, clay, and sand), deleterious material, pH, and mineral and plant-nutrient content of all sources of topsoil sampled.

SOIL NAME	pH	Soluble Salts mmhos/cm	SAR (sodium absorb. ratio)	% Organic Matter	% Sand	% Silt	% Clay	Texture Class
SOIL AMEND-MENTS	≤8.0	≤4.0	NA	NA	NA	NA	NA	NA
TOPSOIL	5.5 To 8.0	≤2.0	≤3.0	≥3.0	≤70	-	≤30	Sandy Loam; Loam; Sandy clay loam; Silt loam.

1. Report suitability of topsoil for growth of applicable planting material. State recommended quantities of nitrogen, phosphorus, and potash nutrients and any limestone, aluminum sulfate, or other soil amendments to be added to produce a satisfactory topsoil.

1.5 DELIVERY, STORAGE, AND HANDLING

A. PACKAGED MATERIALS: Deliver packaged materials in containers showing weight, analysis, and name of manufacturer. Protect materials from deterioration during delivery and while stored at site.

B. SOD: Deliver on site only the amount that can be laid within 24 hours..

C. SHRUBS: Deliver freshly dug shrubs.

1. Do not prune before delivery, except as approved by Architect.
2. Protect bark, branches, and root systems from sun scald, drying, sweating, whipping, and other handling and tying damage.
3. Do not bend or bind-tie shrubs in such a manner as to destroy natural shape. Provide protective covering during delivery.
4. Do not drop shrubs during delivery.

D. DELIVER shrubs after preparations for planting have been completed and install immediately. If planting is delayed more than 24 hours after delivery, all unplanted plants will be rejected, removed from the site and replaced with new stock. There will be no storage of plant material on site. NO EXCEPTIONS.

E. GRO-POWER STORAGE

1 Mycorrhizal inoculum is living material and must be protected from extreme temperature. Avoid storage temperatures above 90° F or below 32° F. Keep it in a cool dry, well aerated location. Avoid exposure to direct sunlight for more than 2 hours.
2. SHELF LIFE: For maximum effectiveness, use the contents of product within 12 month from date of purchase.

1.6 PROJECT CONDITIONS

A. Utilities: Determine location of above grade and underground utilities and perform work in a manner which will avoid damage. Hand excavate, as required. Maintain grade stakes until removal is

mutually agreed upon by parties concerned.

B. Excavation: When conditions detrimental to plant growth are encountered, such as rubble fill, adverse drainage conditions, or obstructions, notify Architect before planting.

1.7 COORDINATION AND SCHEDULING

A. Coordinate installation of planting materials during normal planting seasons for each type of plant material required.

1.8 WARRANTY

A. General Warranty: The special warranty specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.

B. Special Warranty: Warrant the following living planting materials for a period of one year after date of Substantial Completion, against defects including death and unsatisfactory growth, except for defects resulting from lack of adequate maintenance, neglect, or abuse by Owner, abnormal weather conditions unusual for warranty period, or incidents that are beyond Contractor's control.

1. Shrubs

C. Remove and replace dead planting materials immediately unless required to plant in the succeeding planting season.

D. Replace planting materials that are more than 25 percent dead or in an unhealthy condition at end of warranty period.

E. A limit of one replacement of each plant material will be required, except for losses or replacements due to failure to comply with requirements.

1.9 SHRUB MAINTENANCE

A. Maintain shrubs by pruning, cultivating, watering, weeding, fertilizing, restoring planting saucers, tightening and repairing stakes and guy supports, and resetting to proper grades or vertical position, as required to establish healthy, viable plantings. Spray as required to keep trees and shrubs free of insects and disease. Maintain shrubs for the following period:

1. Maintenance Period: 12 months following Substantial Completion.

PART 2 - PRODUCTS

2.1 SHRUB MATERIAL

A. General: Furnish nursery-grown shrubs as herein specified, conforming to ANSI Z60.1, with healthy root systems developed by transplanting or root pruning. 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.

B. Grade: Provide shrubs of sizes and grades as herein specified, conforming to ANSI Z60.1 for type

of trees and shrubs required. Shrubs of a larger size may be used if acceptable to Architect, with a proportionate increase in size of roots or balls.

C. FERTILIZER

1. Commercial fertilizer shall be a mixed commercial fertilizer, O-F-241C, type 1, grade 16-16-8, level B with guaranteed chemical analysis of contents marked on the containers. Apply at a rate of 6 pounds per 1000 square feet.

2.2 DECIDUOUS SHRUBS

A. Form and Size: Deciduous shrubs with not less than the minimum number of canes required by and measured according to ANSI Z60.1 for type, shape, and height of shrub.

2.3 TOPSOIL

A. Topsoil: Prepare the existing soil material by roto-tilling twice in opposite directions with specified soil amendment at the rates specified herein.

1. Lawn areas to receive 4 inch layer of topsoil.

2. Shrub and Ground cover areas to receive a 12 inch layer of topsoil, plus a 3 inch layer of bark mulch.

2.4 SOIL AMENDMENTS

A. GRO-POWER 5-3-1:

1. Organic materials consisting of higher plant life, composted beyond the fibrous stage, to humus (minimum 65%). Also shall have humic acids (minimum 25%) and beneficial soil bacteria strains. It shall NOT contain poultry, animal or human waste (i.e., sewage sludge), pathogenic viruses, fly larvae, insecticides, herbicides, fungicide or poisonous chemicals that would inhibit plant growth.

2. PHYSICAL PROPERTIES: A uniform "Beaded" homogenous mixture - 100.00% passing through a #4 mesh screen - a water soluble bio-degradable binder is used to insure fast breakdown.

3. CHEMICAL ANALYSIS: 5-3-1, Nitrogen (available) 5.00%, Phosphate 3.00%, Potash 1.00%,
4. GUARANTEED ANALYSIS:

Total Nitrogen (N)	5.00%
1.00% Ammoniacal Nitrogen	4.00% Urea Nitrogen
Humus	70.00%,
Humic Acids	15.00%.
Gro-Power bacterial "stimulator"	Included.
Available Phosphoric Acid (P2O5)	3.00%
Soluble Potash (K2O)	1.00%
Iron (Fe)	1.00%
Manganese(Mn)	0.05%
Zinc (Zn)	0.05%

Derived from ammonium phosphate, urea, sulphate of potash, compost and sulfides and

oxides of iron, manganese and zinc.

5. ALSO CONTAINS NON-PLANT FOOD INGREDIENT:

Humic Acids (derived from compost)	15.00%
Bacteria (aerobic, anaerobic) Yeast & Mold (Min)	60,000 per 100 gram

2.5 MULCHES

A. Organic Mulch: Organic mulch, free from deleterious materials and suitable as a top dressing of trees and shrubs, consisting of the following:
   1. Type: Wood bark chips (medium coarse)

2.6 GRAVEL MULCH

A. Refer to drawings for size of gravel mulch to be furnished.
   1. Provide Landscape Architect with a 10 pound sample of gravel mulch to be used, prior to delivery on site.
   2. Gravel mulch shall be natural smooth stones, NOT crushed or broken.
   3. Color considerations must be approved by Landscape Architect.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas to receive landscaping for compliance with requirements and for conditions affecting performance of work of this Section. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Lay out individual tree and shrub locations and areas for multiple plantings. Stake locations, outline areas, and secure Architect's acceptance before the start of planting work. Make minor adjustments as may be required.

3.3 PLANTING SOIL PREPARATION

A. Clean existing soil material of roots, plants, sods, stones and other extraneous materials harmful to plant growth prior to roto-tilling.

   1. Apply Gro-Power at the rate of 175 lbs. per 1000 sq. ft of area.

   2. Thoroughly roto-till amendments into existing soil material to a minimum depth of 6 inches. Roto-till two directions.

   3. Landscape Architect must approve roto-tilling of existing soil material prior to fine grading.

B. PREPARATION OF FINISH GRADE

   1. Inspect finish grade for any deleterious material larger than 1/2" in diameter. Bring to the

attention of the Landscape Architect any deficiencies in the subgrade including low spots, unevenness, and poor drainage areas due to improper grading or leveling. Finish grade shall be 1-1/2" below any hard surface. NO EXCEPTIONS.

2. After landscape areas have been prepared, take no heavy objects over them except lawn rollers. Immediately before planting lawn and with top soil in semi-dry condition, roll lawn planting areas in two directions at approximately right angles with water ballast roller weighing 100 to 300 lbs according to soil type. Rake or scarify and cut or fill irregularities that develop as required until area is true and uniform, free from lumps, depressions, and irregularities.

3.4 EXCAVATION FOR SHRUBS

1. Container-Grown Shrubs: Refer to detail on drawings.

B. Dispose of subsoil removed from landscape excavations. Do not mix with planting soil or use as backfill.

C. Obstructions: Notify Architect if unexpected rock or obstructions detrimental to trees or shrubs are encountered in excavations.

D. Fill excavations with water and allow to percolate out, before placing setting layer and positioning trees and shrubs.

3.5 PLANTING SHRUBS

A. Set container-grown stock plumb and in center of pit or trench with top of ball raised above adjacent finish grades as indicated.

1. Carefully remove containers so as not to damage root balls.
2. Place stock on setting layer of compacted planting soil.
3. Place backfill around ball in layers, tamping to settle backfill and eliminate voids and air pockets. When pit is approximately 1/2 backfilled, water thoroughly before placing remainder of backfill. Repeat watering until no more is absorbed. Water again after placing and tamping final layer of backfill.

B. Dish and tamp top of backfill to form a 3-inch- (75-mm-) high mound around the rim of the pit. Do not cover top of root ball with backfill.

3.6 SHRUB PRUNING

A. Prune, thin, and shape trees and shrubs as directed by Architect.

3.7 SHRUB PRUNING

A. Prune, thin, and shape trees and shrubs as directed by Architect.

3.8 GRAVEL MULCH

A. Insure that subgrade is graded smooth, compacted and free of any deleterious materials before installing gravel mulch.

B. Spread gravel mulch uniformly over the subgrade to a depth of 3 inches.

3.9 MULCHING

A. Mulch backfilled surfaces of pits, trenches, planted areas, and other areas with a 3" layer of mulch.

3.10 CLEANUP AND PROTECTION

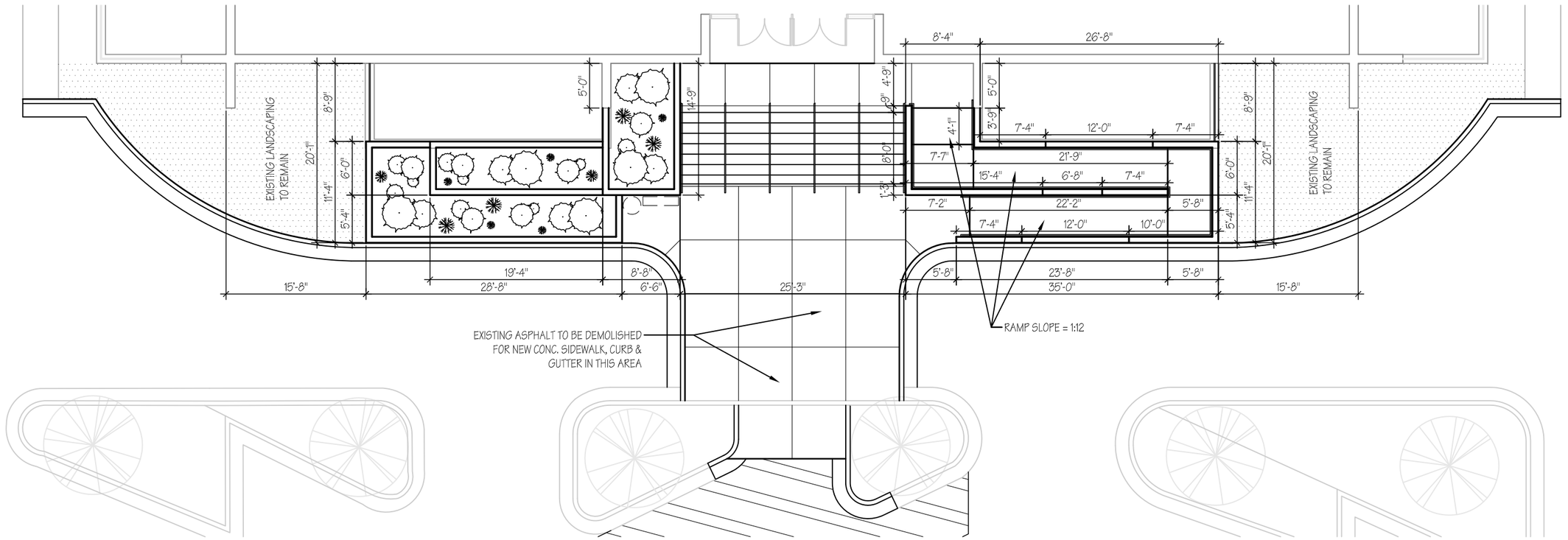
A. During landscaping, keep pavements clean and work area in an orderly condition.

B. Protect landscaping from damage due to landscape operations, operations by other contractors and trades, and trespassers. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged landscape work as directed.

3.11 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Disposal: Remove surplus soil and waste material, including excess subsoil, unsuitable soil, trash, and debris, and legally dispose of it off the Owner's property.

END OF SECTION 02900



A1 ENLARGED PLAN

SCALE: N.T.S.

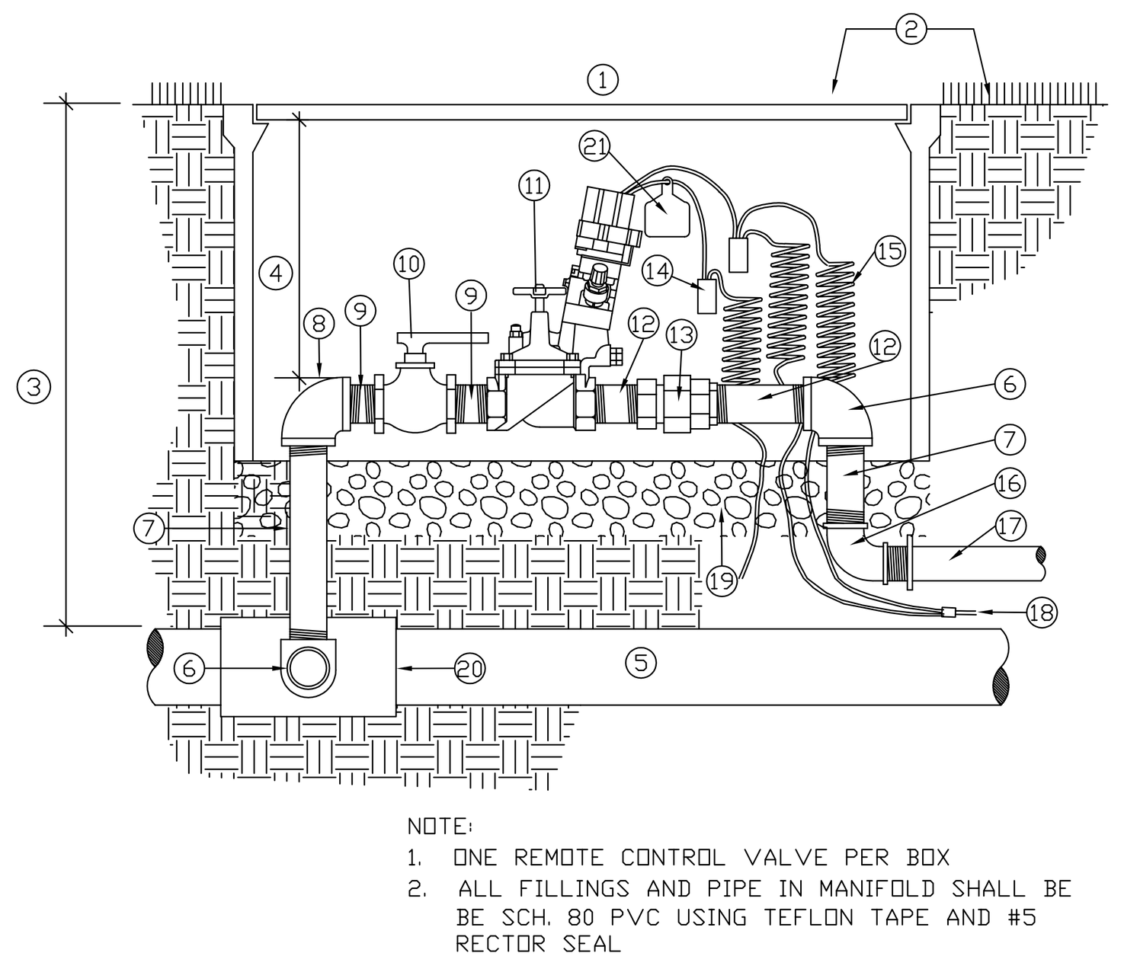
1484 South State Street Salt Lake City, Utah 84115 Tel: 801.596.0691 Fax: 801.596.0693 www.hfsa.com

HFSArchitects
ARCHITECTURE
INTERIORS
PLANNING

ADDENDUM 4 ENLARGED PLAN

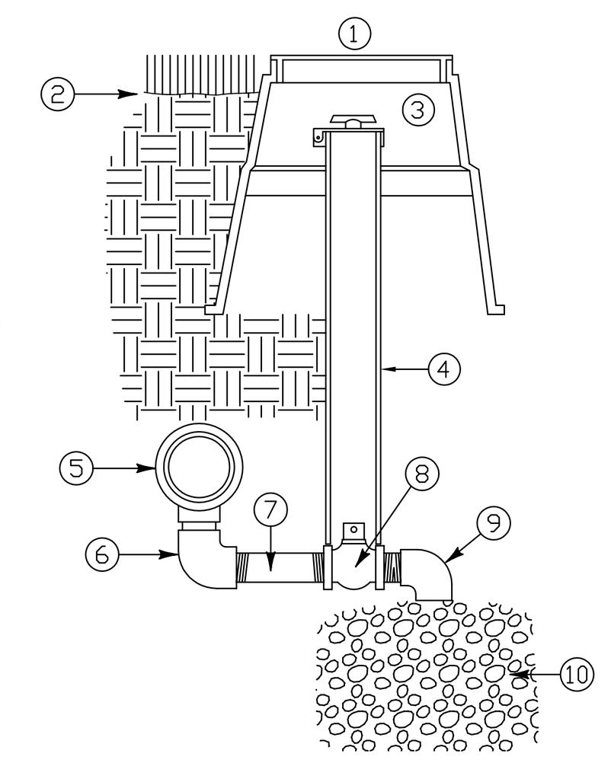
DWS-PROVO ENTRANCE REPLACEMENT & LANDSCAPE IMPROVEMENTS

DATE: MAY 26, 2009
CLIENT PROJ No 08071920
HFSA PROJ No 0821.01



1. CARSON-BROOKS 1419-12 STANDARD OR 1220-12 JUMBO VALVE BOX WITH STAINLESS STEEL BOLTS.
2. INSTALL AT GRADE
3. 18" MAX. DEPTH
4. 10"-14"
5. MAIN WATER SUPPLY LINE
6. PVC SCH. 80 ELBOW
7. PVC SCH. 80 NIPPLE; LENGTH AS REQUIRED (TYP.)
8. PVC SCH. 80 ELL SAME SIZE AS VALVE
9. SCH. 80 NIPPLE ON EITHER SIDE OF GATE VALVE
10. BRASS BALL VALVE. SAME SIZE AS PIPE ONE PER MANIFOLD.
11. ELECTRIC CONTROL VALVE - SEE IRRIGATION LEGEND
12. SCH. 80 NIPPLE ON EITHER SIDE OF UNION
13. PVC SCH. 80 UNION
14. WATER TIGHT CONNECTORS (3M DBY ONLY)
15. PROVIDE 24" EXPANSION LOOP AT EACH WIRE CONNECTOR IN BOX.
16. SCH. 80 ELBOW WITH SCH. 80 NIPPLE INTO S X T BUSHING TO LATERAL
17. LATERAL LINE
18. CONTROL WIRES
19. 6" MIN. DEPTH CLEAN PEA GRAVEL
20. PVC SCH. 80 TEE SXSXS WITH SCH. 80 SXT BUSHING OR DOUBLE STRAP SADDLE.
21. ID TAG: RAINBIRD VID SERIES

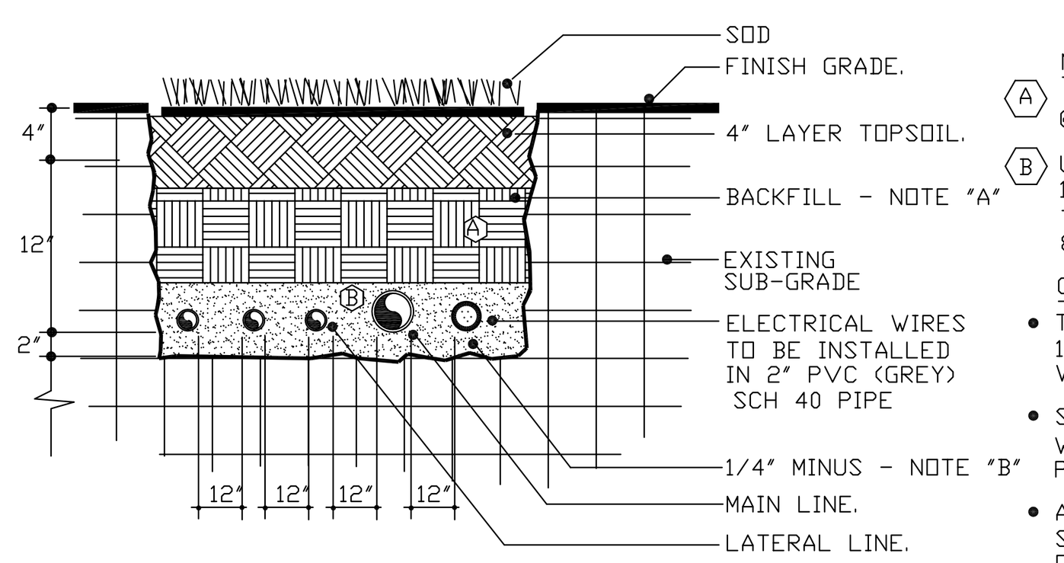
CONTROL VALVE ASSEMBLY 1/L1.1
Not to Scale



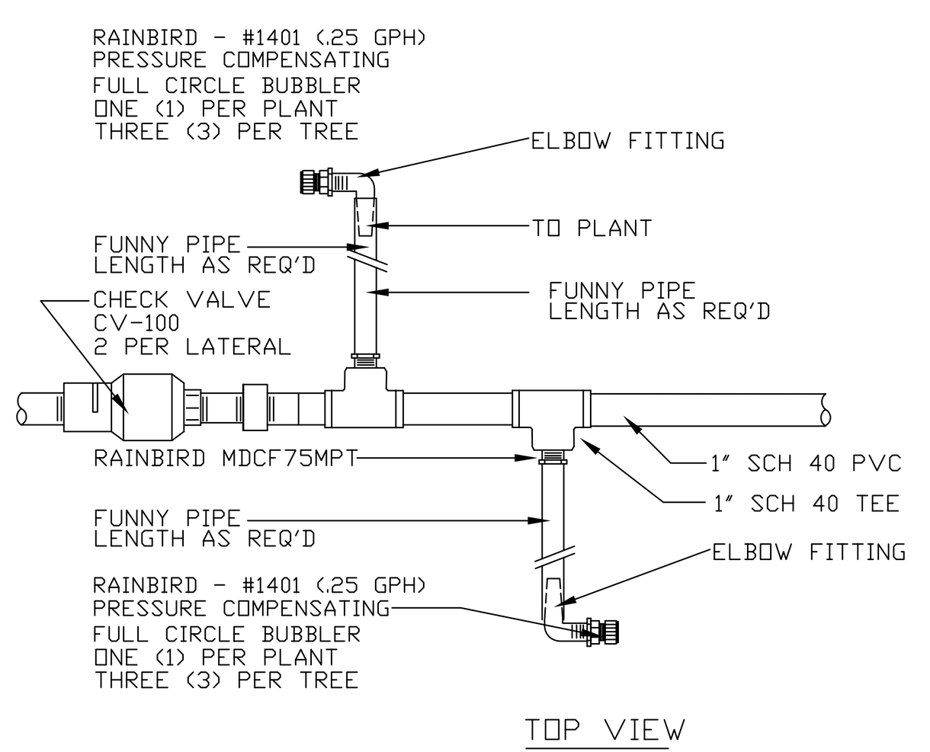
1. 10" ROUND VALVE BOX W/ LOCK BOLT, CARSON-BROOKS 910
2. FINISH GRADE
3. 906L WEATHERMATIC LOCKING VALVE CAP PERMANENTLY ATTACHED TO SLEEVE. TOP OF MARKER 4" - 6" BELOW GRADE
4. 2" PVC SCH. 40 SLEEVE NOTCHED OVER VALVE
5. PVC SCH. 80 TEE & MAIN LINE
6. 3/4" PVC SCH. 80 ELBOW
7. 3/4" PVC SCH. 80 NIPPLE (LENGTH AS REQUIRE
8. 3/4" FORD B11333 BALL VALVE
9. 3/4" MARLEX STREET ELBOW
10. GRAVEL SUMP - 18" x 18" x 12" MIN. SIZE

NOTE:
1) ALL PVC NIPPLES TO BE SCH. 80
2) PROVIDE VALVE KEY TO OWNER

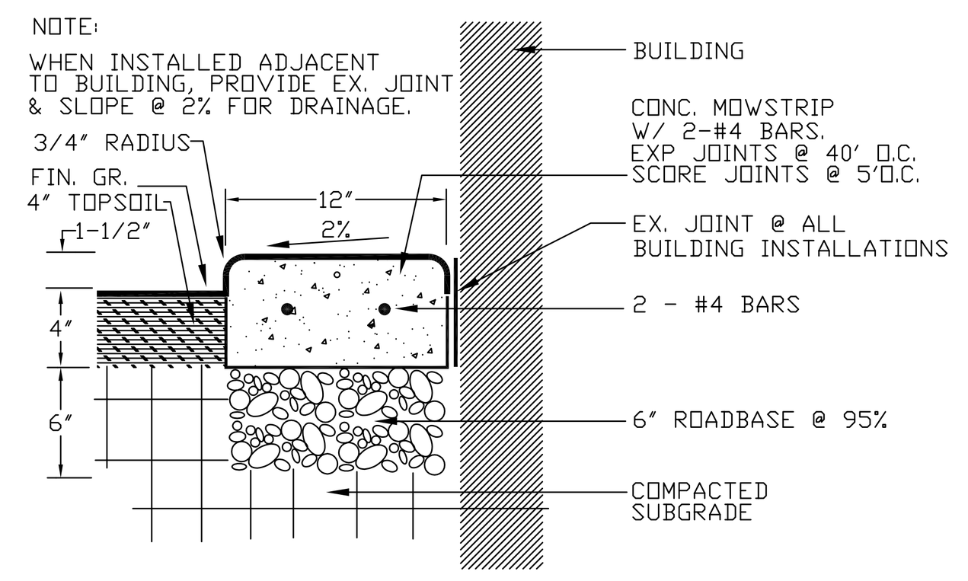
MANUAL DRAIN VALVE ASSEMBLY 2/L1.1
Not to Scale



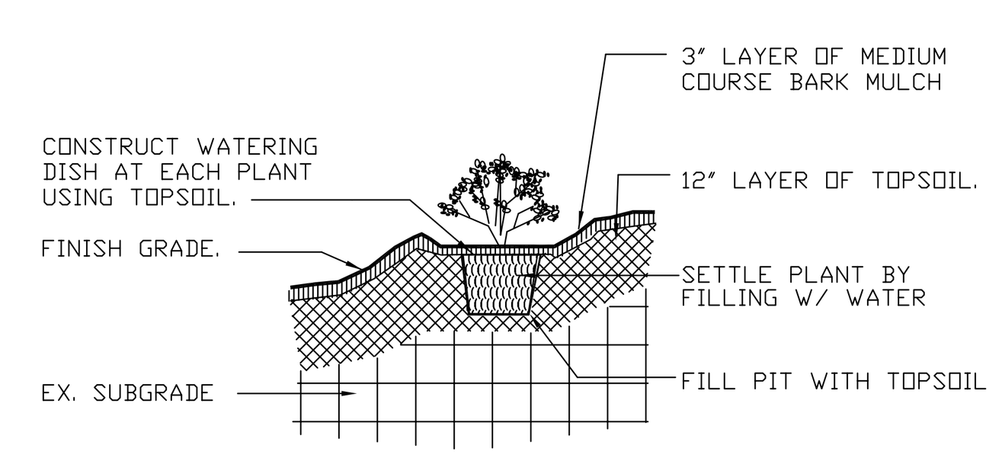
TRENCHING DETAIL 3/L1.1
Not to Scale



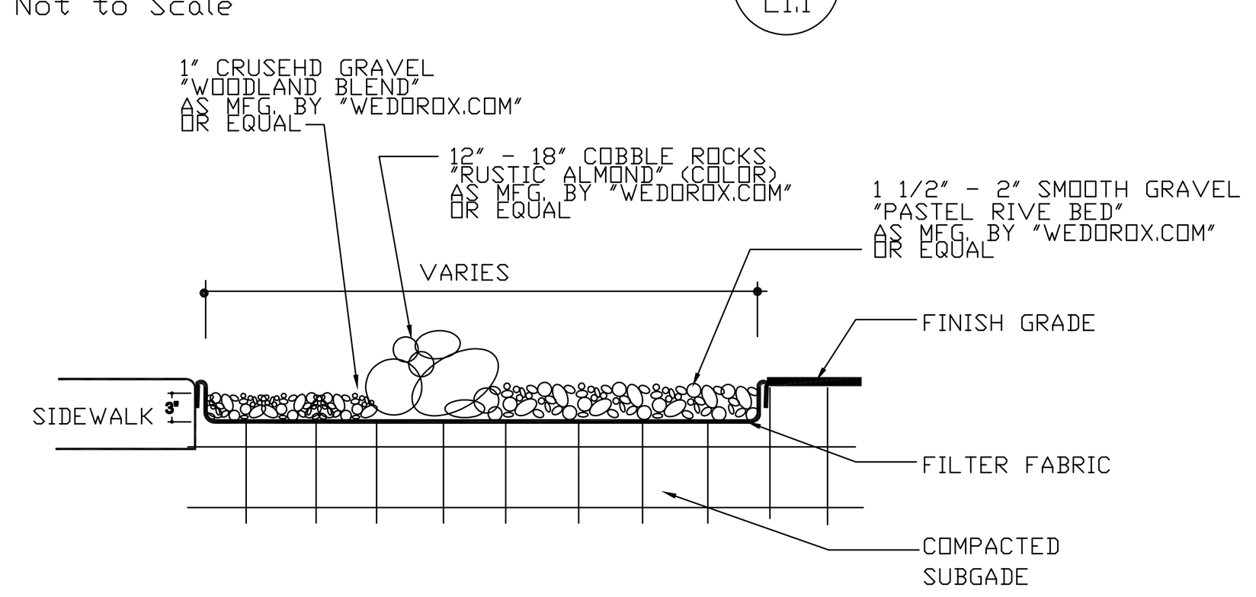
DRIP LINE - LATERAL 4/L1.1
SCALE: NOT TO SCALE



MOWSTRIP 5/L1.1
Not to Scale



SHRUB PLANTING DETAIL 6/L1.1
Not to Scale



GRAVEL MULCH 7/L1.1
SCALE: NO TO SCALE

LEGEND of SYMBOLS

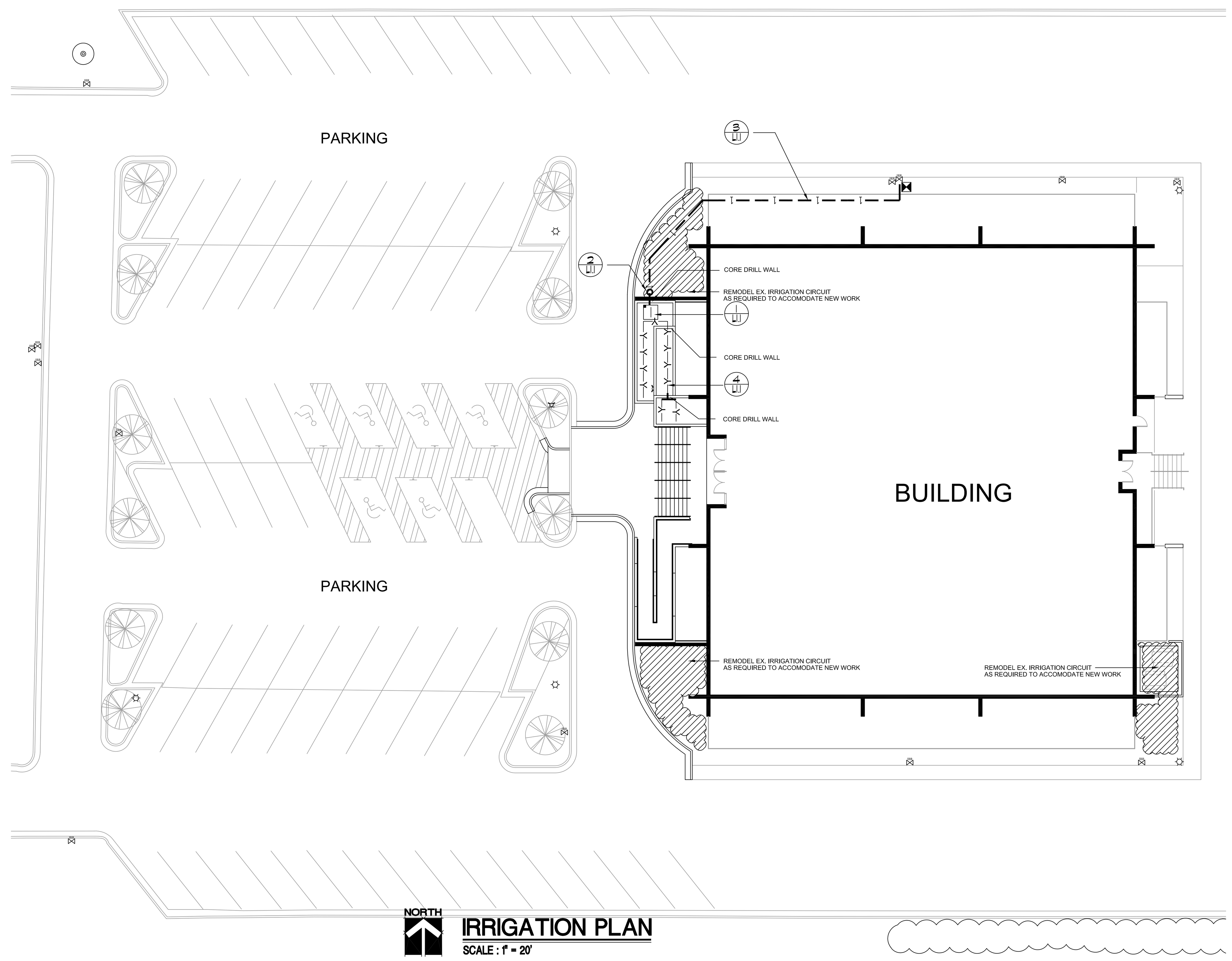
SYM	DESCRIPTION
	1" CRUSEHD GRAVEL "WOODLAND BLEND" (COLOR) AS MFG. BY "WEDOROX.COM" OR EQUAL
	12" - 18" COBBLE ROCKS "RUSTIC ALMOND" (COLOR) AS MFG. BY "WEDOROX.COM" OR EQUAL
	1 1/2" - 2" SMOOTH GRAVEL "PASTEL RIVE BED" (COLOR) AS MFG. BY "WEDOROX.COM" OR EQUAL
	EXISTING IRRIGATON VALVE TO REMAIN
	EXISTING LIGHT TO REMAIN
	EXISTING TREE TO REMAIN
	EXISTING TREE LINE TO REMAIN

IRRIGATION LEGEND

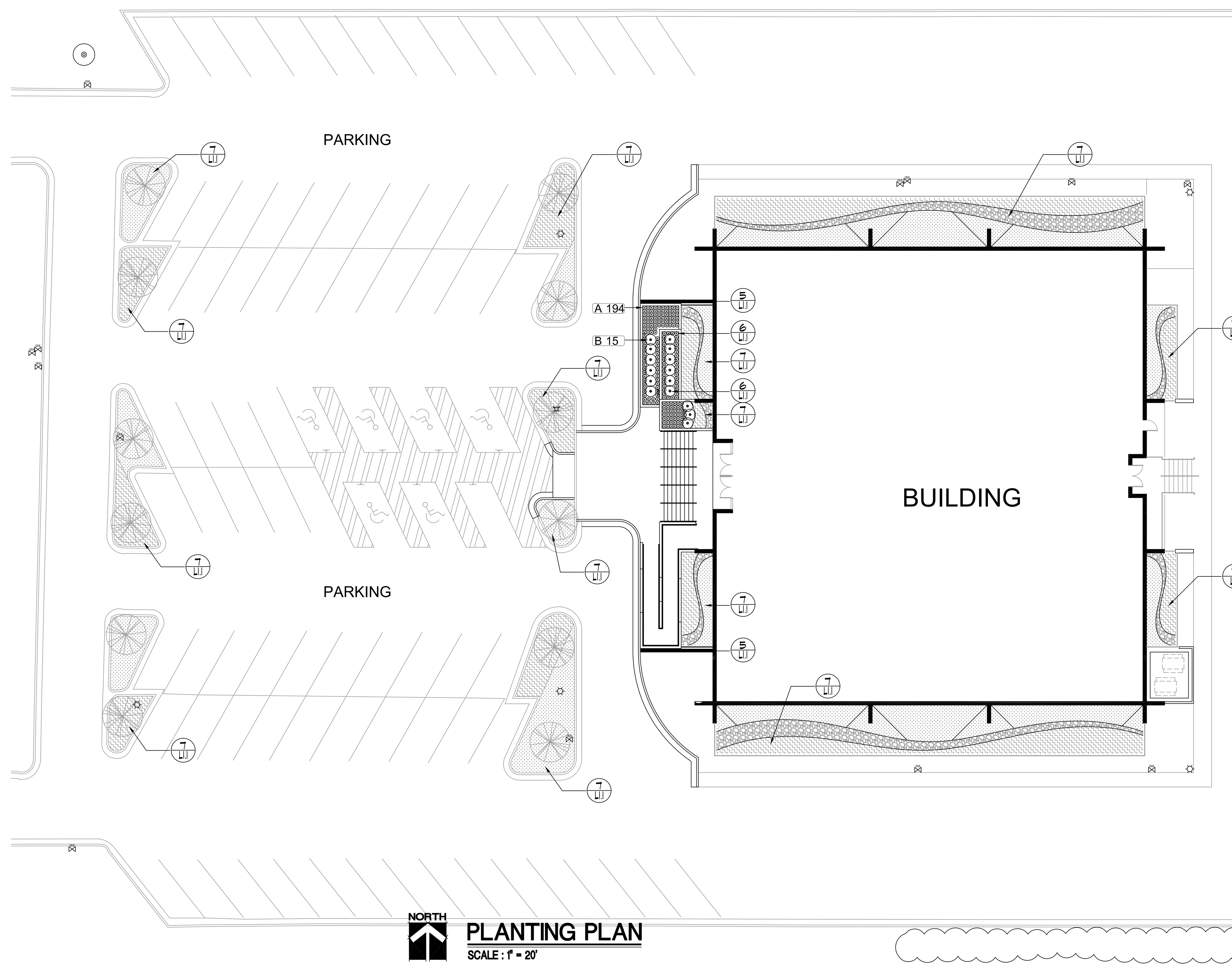
SYM	DESCRIPTION
	DRIP LATERAL LINE
	1" PVC SCH 40 MAINLINE
	HUNTER ICV-101-FS SERIES ELEC. REMOTE CONTROL VALVE (1")
	POINT OF CONNECTION @ EXISTING VALVE MANIFOLD
	14 GUAGE CONTROL WIRE + 14 GUAGE GROUND WIRE EXTEND TO EX. CONTROLLER
NOTE:	THIS SPRINKLER IRRIGATION PLAN IS DRAWN FOR GRAPHIC CLARITY. WHERE PIPING AND VALVES ARE SHOWN IN CONCRETE AREAS, EXCEPT WHERE CROSSING, THE INTENT IS FOR THE PIPING AND VALVES TO BE PLACED IN THE ADJACENT PLANTING AREAS.

PLANTING SCHEDULE

SYM	BOTANICAL NAME	COMMON NAME	SIZE	COND.	REMARKS
A	Festuca ovina glauca	Blue Fescue	1 GAL	CAN	AS SHOWN
B	Rosa x. 'Pink Floribunda'	Nearly Wild Rose	5 GAL	CAN	AS SHOWN



IRRIGATION PLAN
SCALE: 1" = 20'



PLANTING PLAN
SCALE: 1" = 20'

..\Xref Photos & Images\HFS B&W.jpg

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CONSULTANT

BRENT D. MORRIS LANDSCAPE ARCHITECT UTAH 105710-5301
bma
brent morris associates ■ landscape architects

DWS - PROVO ENTRANCE REPLACEMENT & LAND-SCAPING IMPROVEMENTS

Department of Workforce Services
1550 North Freedom Boulevard
Provo, Utah

MARK	DATE	DESCRIPTION

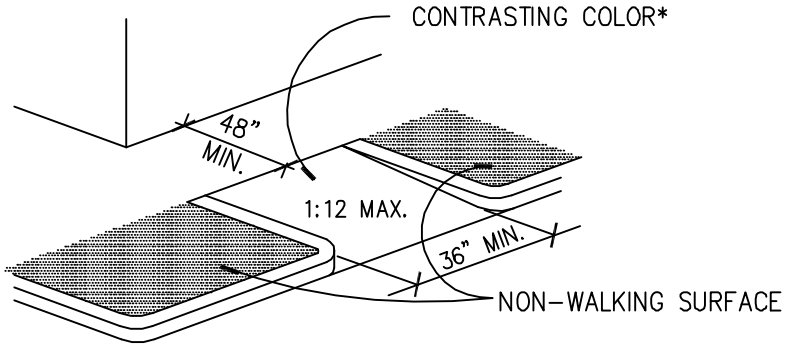
DATE:	25 MAY 09
DFCM PROJECT NO:	08071920
HFSA PROJECT NO:	0821.01
CAD DWG FILE NO:	
DRAWN BY:	BRENT
CHECKED BY:	BRENT
DESIGNED BY:	BRENT
DWG TYPE:	ARCHITECTURAL
ARCHITECTURAL PHASE:	CONSTRUCTION BID DOCUMENTS

SHEET TITLE

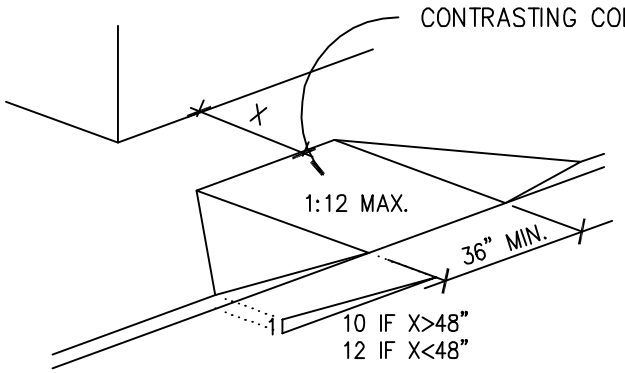
PLANTING & IRRIGATION PLANS & LANDSCAPE DETAILS

SHEET OF 11

1484 S. State Street Salt Lake City, UT 84115 Tel: 801-596-0691 Fax: 596-0693 www.hfsa.com



RETURNED CURB



FLARED SIDES

* COLOR AND TEXTURE OF RAMP TO COMPLY WITH 4.29.2 OR 1/8" DEEP GROOVES 1/4"-3/4" WIDE AND 3/4"-2" ON CENTER, ARRANGED SO WATER WILL NOT ACCUMULATE

CURB RAMPS

Scale: 1/8"=1'-0"

ADJOINING SLOPES SHALL NOT EXCEED MAX. 1:20 SLOPE MAX. 1:50 CROSS SLOPE

* PROVIDE TRUNCATED DOME DETECTABLE WARNINGS TO EXTEND FULL WIDTH AND DEPTH OF CURB RAMP. PROVIDE FROM ADA SOLUTIONS INC. OR EQUAL

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ADDENDUM 4 ADA CURB RAMPS

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SCALE:
DATE: May 26, 2009
CLIENT PROJ No 08071920
HFSA PROJ No 0821.01

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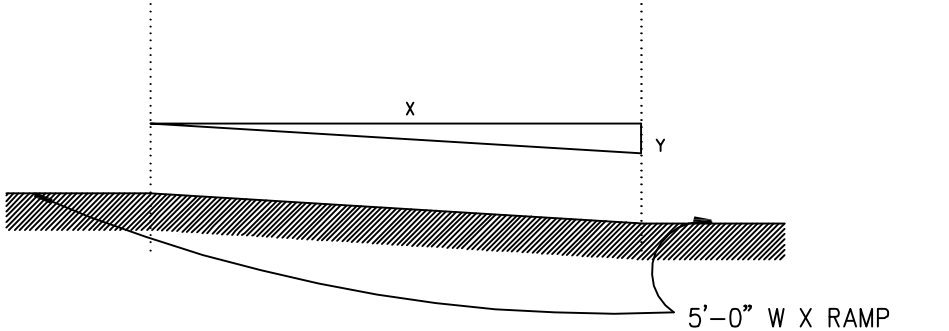
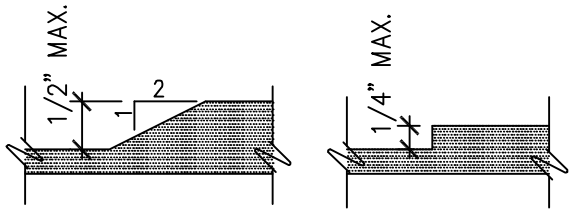


SLOPE	Y	X
1:12 TO <1:16	30"	30'
1:16 TO <1:20	30"	40'

RAMP SLOPES & LANDINGS

Scale: NONE



LEVEL CHANGES

Scale: FULL SCALE

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ADDENDUM 4 ADA SLOPES & LANDINGS

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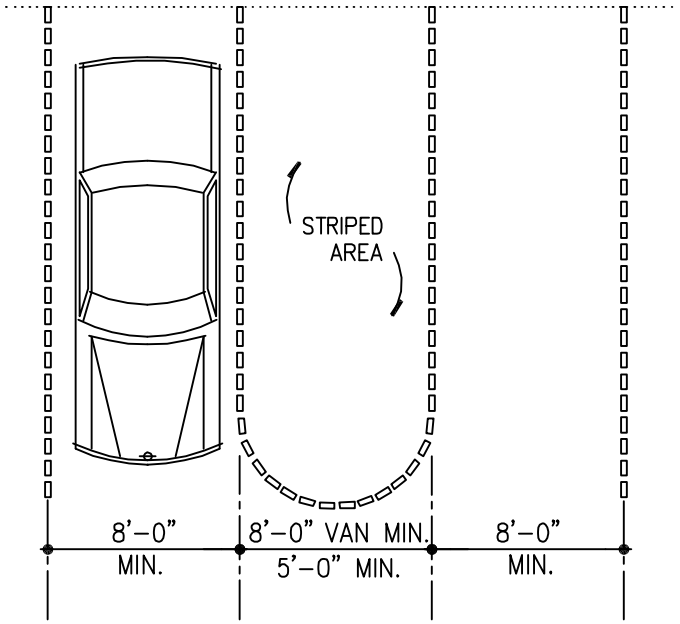
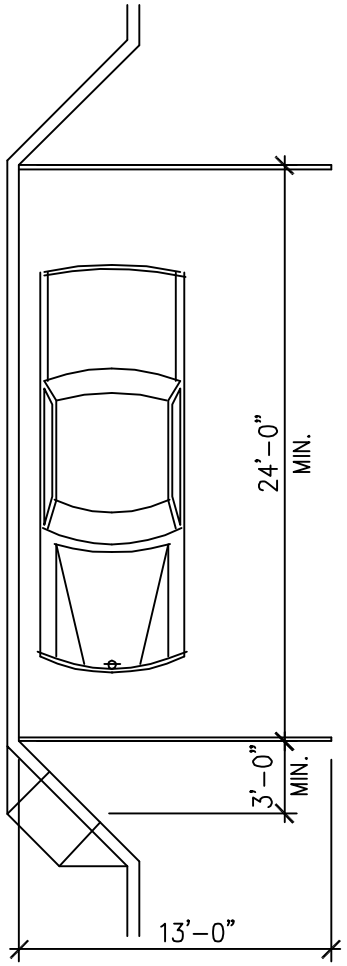


THE SPACE AND ACCESS AISLE SHALL HAVE A MAXIMUM SLOPE OF 1:50 IN ANY DIRECTION



PARKING SPACE DIMENSIONS

Scale: 1/8"=1'-0"

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ADDENDUM 4 ADA PARKING SPACE DIMENSIONS

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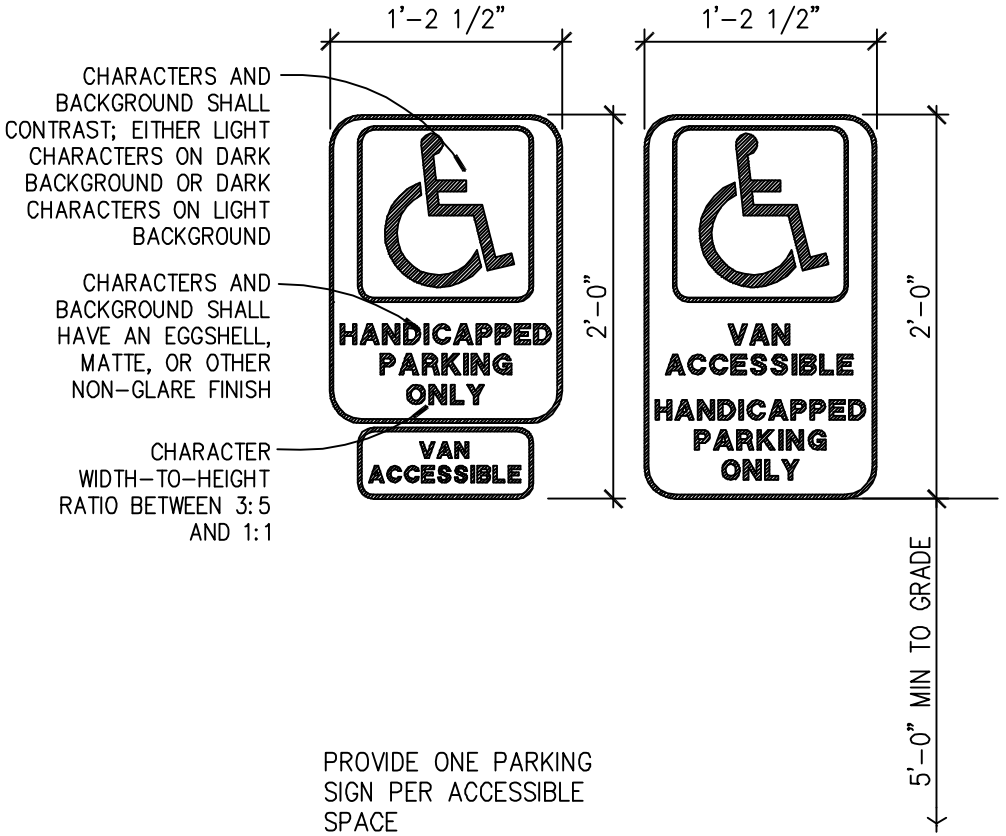

PROVIDE ONE PARKING SIGN PER ACCESSIBLE SPACE

PARKING SIGNAGE

Scale: 1"=1'-0"

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ADDENDUM 4 ADA PARKING SIGNAGE

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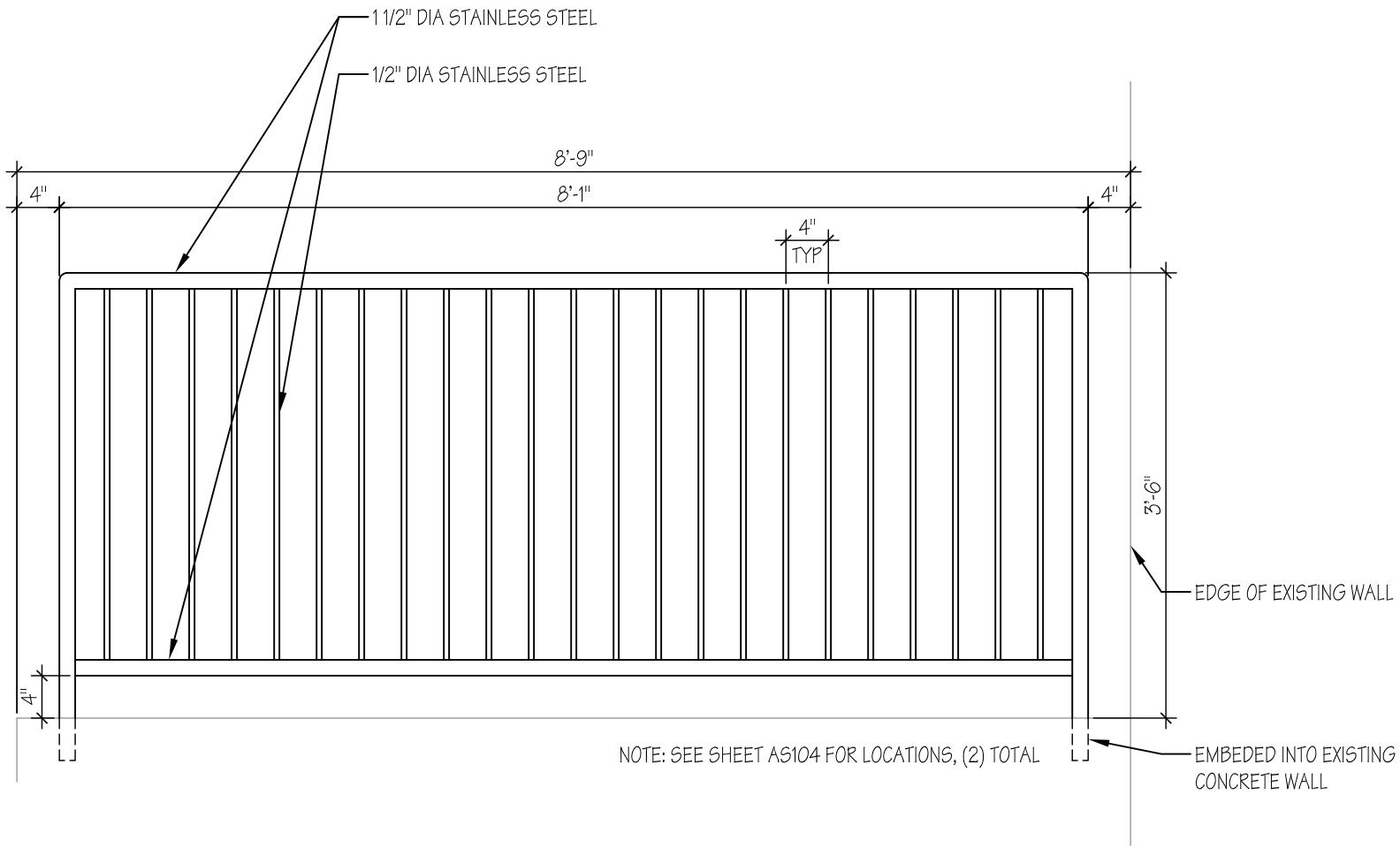

A1 GUARDRAIL ELEVATION

3/4" = 1'-0"

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ADDENDUM 4 GUARDRAIL ELEVATION

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