

GROWTH MANAGEMENT DEPARTMENT STAFF REPORT PONTE VEDRA OVERLAY DISTRICT

May 1, 2024 Special Public Meeting ARC 2024-04 Golf Club Patio Renovation (Ponte Vedra Inn & Club)

To: Architectural Review Committee

Staff: Amanda Rose, Senior Planner | Brandon Tirado, Planner

Date: April 22, 2024

Applicant: Mark Klone

ELM

mklone@elmplan.com

Location: 35 Pablo Road

FLUM: Residential B (RES-B)

Zoning: PUD, within the Ponte Vedra Resort PUD Ordinance 2023-50

Applicable Standards: Ordinance 2023-50 & Ponte Vedra Zoning District Regulations (PVZDR)

Summary of Request: Applicant is requesting design approval to remove an existing wooden pergola and renovate the exterior of the Golf Club Patio. Proposed changes include 1,200 square feet of concrete pavers and other impervious surfaces, construction of an outdoor fireplace, renovations to the existing wood deck, and installation of new landscaping, irrigation, and one (1) new exterior door, located at 35 Pablo Dr. within the Ponte Vedra Inn and Club. Lighting updates are also proposed. The applicant is also requesting approval for a potential canopy fabric replacement (e.g. "add alternate"). The applicant has confirmed they will be providing physical color/material samples for the Board to review at the hearing.

Project Location: The subject site is located within the Ponte Vedra Inn and Club property, on the south side of Pablo Road, approximately 0.16 miles west of the intersection of Pablo Road and Ponte Vedra Blvd. The proposed Golf Club Patio renovations will occupy an existing outdoor space that currently contains landscaping and a wooden deck with pergola.



Figure 1: General Location of the proposed renovations, as provided by the applicant.

Staff Review—Planning Division: Please refer to the submitted Site Plan, Existing Conditions Photographs, Materials, Landscape Plan, and Photometric Plan, provided below within Figures 2, 3A-B, 4A-C, 5A-B, 6A-B, 7A-B, and 8, along with corresponding staff comments.

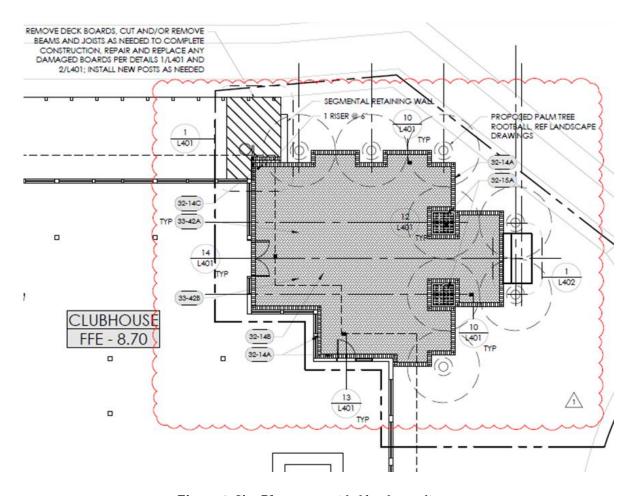
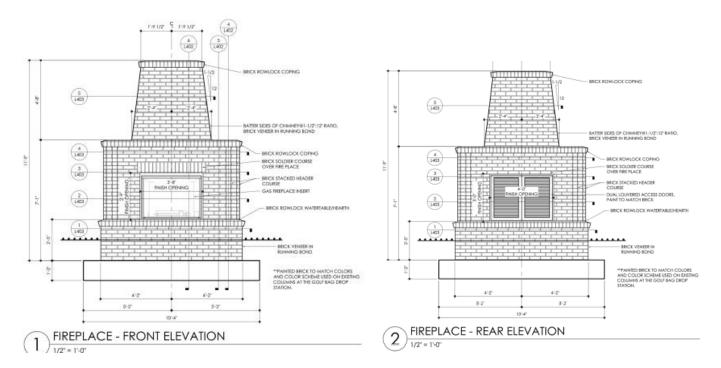


Figure 2: Site Plan, as provided by the applicant.



Figures 3A-B: Existing Conditions—Staff Photographs of Existing Conditions, taken April 11, 2024.

*Fireplace (See Figures 4A-C)—The applicant proposes to paint the outdoor fireplace white to match the existing columns at the golf drop-off (see Figure 4C), and it is also noted that all paint colors used for the building, doors, and modifications to the wood deck will match the existing colors. The colors and materials of the proposed fireplace appear to be consistent with Section VIII.Q.5(d) Architectural Design Standards and Section VIII.Q.5(e). Design Elements and Materials of the PVZDR. The proposed design and color appear subdued and compatible with the existing Golf Club elements as well as with the overall expectations of the Ponte Vedra Overlay District.





FIREPLACE PAINT TO MATCH EXISTING PAINT COLOR SCHEME FOR GOLF BAG DROP COLUMNS. CURRENTLY WHITE OR OFF-WHITE. COLOR TO BE MATCHED BY CONTRACTOR AT TIME OF PAINTING.

Figures 4A-C: Fireplace Elevations and Materials, as provided by the applicant.

*Patio Pavers (see Figures 5A-B)—The colors and material of the proposed paver area appear to be consistent with PVZDR Section VIII.Q.5(e). Design Elements and Materials of the PVZDR. The proposed design and color appear subdued and in harmony with other locations within the Ponte Vedra Overlay District. The applicant notes that the proposed paver pattern and style matches that used at the Ocean Golf Course near the first tee.



Figures 5A-B: Patio Paver Design, as provided by the applicant.

*Landscape Plan (see Figures 6A-B)—The proposed Landscape Plan appears to be consistent with PVZDR Section VIII.Q.5(e). Design Elements and Materials of the PVZDR. Per PVZDR Section VIII.Q.5.e(8), the ARC may require utilization of particular landscape and plant species where a pattern of vegetation has been established or where such species are determined to be desired.

SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	NATIVE	SHADE	CANOPY	REMARKS
TREES								
\oplus	5F5	0	SABAL PALMETTO	SABAL PALM	YES	HO CH	17	To CT, HEGHT, ALL TRUNKS TO BE STRAIGHT, MATCHED HEADS.
YMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	NATIVE	SHADE	CANOPY	REMARKS
SHRUBS								
₹P	CPR	2	CORDRINE HURICOSA	1 FLANT	YES		42° o.c.	35" HEIGHT, 16" - 34" SPREAD, 7 GAL, 42" OC
*	UUR	ô	LOHANDRA LONOPOLIA WOHA 13	PLATHUM BEAUTY VARIEGATED HAT RUSH	NO		36° e.c.	18" - 21" HEIGHE AND SPEEAU, 3 GAL, 36" OC
0	138	4	DODGARON SINEASE JOHGHANS.	SUNDHINE CHINESE PRIVET	NO		36"0.0.	18" - 34" HEIGHT AND SPREAD, 3 GAL, 36" OC
0	PMA.	23	PODOCARRIS MACROPHILLIS	JAPANESE PODOCABPUS	AS.		36° o.c.	30" - 36" HEIGHT, SICSPREAD MIN, P.GAL, 36" OX
0	1000	24	BHODODBHDBOH X WORLDE	AUTUMN STARBURST ENCORE AZAURA	YES		30° o.c.	18" X 18" HEIGHT AND SPREAD, 3 GAL, 30" OC., DIAMP YMBET! OF RESCOUNING ADMEA, MATURE SIZES" - 4" HEIGHT AND SPREAD
SROUND COV	ERS							
		22	DIANELLA TASMANICA "VARIEGATA"	FLAX LIST	NO		15° a.c.	14" - 19" HEIGHE, FULL PLANE, 1 GAL, 15" OC
	EGB	28	EVOLYULIS GLOMERATUS BLUE DATE	MAJELAN DINARY MORNING GLORY	ND		5° 0.C.	4" - 6" HEIGHT AND SPECAD, UNIER, F" DC
URF GRASS								
	500A	274 SF	STEHOFAPHRUM SECUNDATUM "FLOREFAH"	PLORITAN ST. AUGUSTINE SOD	0			900 - SEE SPECS

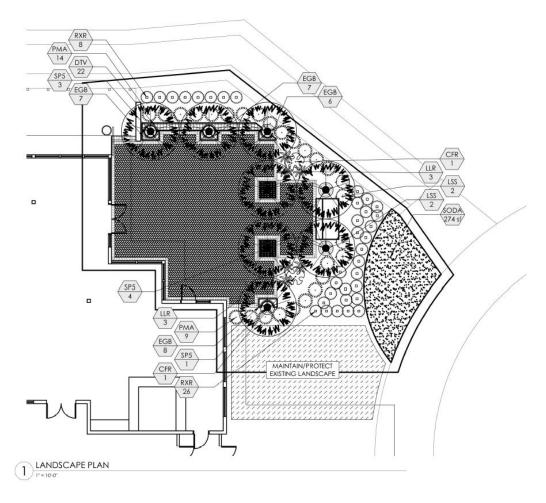


Figure 6A-B: Landscape Plan + Plant Schedule, as provided by the applicant.

*Photometric Plan (see Figures 7A-B)—Per PVZDR Section VIII.Q.5.e(9), architectural lighting shall be recessed under roof overhangs or generated from a concealed light source or low-level light fixtures. Site lighting shall be of low intensity, shall be white light which does not distort colors and shall not spill over into adjoining properties, roadways, or in any way interfere with the vision of oncoming traffic.

The applicant notes that the proposed fixtures are designed to focus light onto the patio and to reduce glare from neighboring properties. The applicant states that the photometric plan shows lighting levels as high as 10 foot-candles but that the fixture selected allows for either a manual adjustment to lower output or to utilize a dimmer switch. Please also note that the applicant has indicated to Staff that festoon lighting has been removed from the proposal.

PUREFORM POST-TOP MOUNT WITH COMFORT
OPTICS BY GARDOO

ALTERNATE FIXTURE
MATCH EXISTING ACORN-STYLE FIXTURE

Staff has concerns about the Photometric Plan, as it does not demonstrate fully how the proposed lighting affects the adjacent right-of-way, specifically at the roadway. Staff has asked that the applicant provide additional information on the photometric levels near the property lines, as well as information about the light color/s.

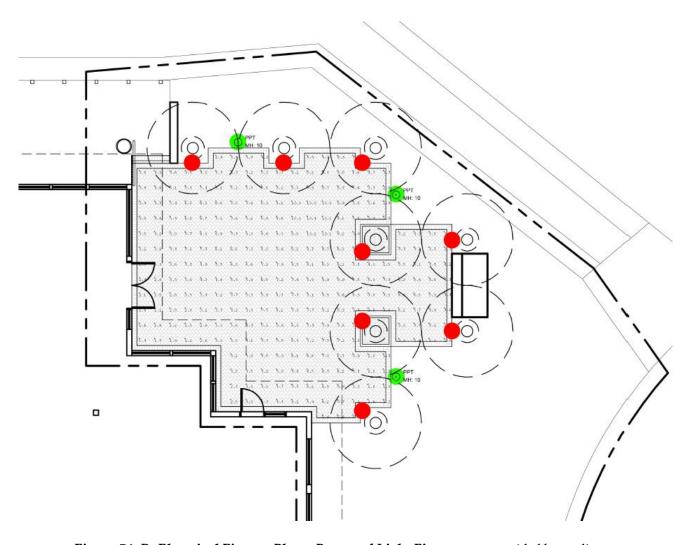


Figure 7A-B: Electrical Fixture Plan + Proposed Light Fixtures, as provided by applicant.



Canopy Fabric Replacement (see Figure 8)—The colors and material of the add alternate canopy fabric replacement appear to be consistent with PVZDR Section VIII.Q.5(e). Design Elements and Materials of the PVZDR, as the tones are subdued and the material is compatible with existing site conditions.

Figure 8: Canopy Fabric Replacement (Add Alternate), as proposed by the applicant.

Applicable Standards:

PVZDR Section Q.5.a. Development Standards.

- (1) Flat roof lines, or the appearance of flat roof lines are not permitted.
- (2) Work areas or storage doors and open bays shall not open toward, face or otherwise be visible from an Overlay District Delineated Roadway.
- (3) Building Heights shall be limited to two (2) Stories and thirty-five (35) feet, except that the maximum Building Height shall be twenty-five (25) feet where a Building is located less than one hundred and fifty (150) feet from a residentially zoned property, and no greater than one Story when located less than fifty (50) feet from residentially zoned property. A mechanical room and/or a non-habitable storage room shall be allowed in the Attic. A mezzanine or loft shall be considered a Story.
- (4) Heating, ventilation and air conditioning equipment, duct work, air compressors, and other fixed operating machinery shall be either screened from view with Fencing or vegetation, or located so that such items are not visible from any Overlay District Delineated Roadway, adjacent residential properties or intersecting Streets. Trash receptacles, dumpsters, utility meters, above-ground tanks, satellite dishes, Antennae, and other such Structures shall be similarly treated.
- (5) Satellite dishes shall be subject to Section VIII.J of these Regulations.
- (6) No temporary Structures shall be permitted, except for those used in conjunction with construction projects and special community events, and for which, applicable permits have been obtained. Office type mobile units when used as such temporary facilities shall be equipped with rigid skirting on all sides. Any towing gear shall be removed, and if not removable, shall be screened with landscaping.
- (7) Chain link, barbed wire and similar Fencing shall not be permitted in any required Front Yard, and where such Fencing can be viewed from any roadway. Landscaping and/or berm shall be provided to prohibit visibility from any Overlay District Delineated Roadway.
- (8) Exterior lighting for safety and security shall be kept to a minimum consistent with reasonable safety requirements of the particular business or Structure. Safety and security lights, other than low-wattage lights or ground-area lights, shall not be visible from adjacent residential properties.
- (9) The maximum amount of impervious surface coverage of any site proposed for development, excluding any jurisdictional wetlands and pervious parking areas, shall not exceed sixty-five (65) percent.
- (10) Commercial uses shall have a maximum Gross Floor Area (GFA) of ten thousand (10,000) square feet per acre, excluding any jurisdictional wetlands.
- (11) The maximum length of Buildings parallel, or within 45 degrees of parallel to any Overlay District Delineated Roadway shall be one hundred twenty (120) feet.

PVZDR Section Q.5.d Architectural Design Standards

The pleasing and compatible relationship of architecture along Roads in the Overlay District is of important public concern. The architectural design of Structures and their materials and colors must be visually harmonious with the overall appearance, history and cultural heritage of Ponte Vedra, and also with natural Land forms and existing vegetation. Compatibility with existing adjacent Structures and other approved development plans must also be considered.

The intent of these standards is not to restrain diversity or innovative architecture, but to reduce incompatible and adverse impacts, and to insure an aesthetically pleasing environment. To accomplish this, the following standards shall apply to the review of proposed Buildings, renovations and related site improvements.

(1) Proposed development shall be located and configured in a visually complementary manner with the existing terrain and vegetation of the parcel and surrounding parcels. Structures shall obstruct as little as reasonably practical scenic views from the main Road or from existing Structures and the natural environment. Structures shall not dominate, in an incompatible manner, any general development or adjacent Building which is substantially in compliance with this Ordinance. This may be accomplished by the use of architectural features and/or siting of proposed Structures to reduce the appearance of excessive and inappropriate height or mass of proposed Structures.

- (2) The proposed Building or Structure shall be of such design that is contributes to the image of the Ponte Vedra Coastal Corridor as a place of beauty, spaciousness and high quality.
- (3) The proposed Building or Structure shall not, in its exterior design and appearance, be of inferior quality such as to cause the nature of the local environment to materially depreciate in appearance or value.
- (4) Where a single Building, or group of related Buildings contains more than one (1) store or business front, all Wall Signs shall be of similar style and shall be compatible and uniform in terms of size, color and any lighting. Any backlighting or appearance of lighting shall be white in color.
- (5) The color and materials of Signs shall be compatible with the architectural style, color and materials of the related commercial or multi-Family Building.
- (6) New Ground Signs and alterations to existing Ground Signs requiring an ARC review shall be externally illuminated

PVZDR Section Q.5.e Design Elements and Materials

The following specific design criteria shall apply to development regulated under the conditions of the Overlay District.

- (1) Flat roofs, or the appearance of flat roofs, shall not be permitted. Pitched roofs, or the appearance of pitched roofs are required.
- (2) Long monotonous façade designs including, but not limited to, those characterized by unrelieved repetition of shape or form or design elements, or by unbroken extension of line shall be avoided.
- (3) Architectural grade shingles, metal standing seam, tile or other non-reflective roof materials with similar nature-blending texture and appearance shall be considered appropriate.
- (4) Stucco, tabby, wood siding or wood shingle siding, brick or other materials with similar texture and appearance shall be considered appropriate.
- (5) Exterior colors of paints and stains shall be Earth Tones with no more than three colors per Building, excluding roof color. Semi-transparent stains are recommended for application on natural wood finishes. All exterior color hues shall be subdued, consistent and compatible with those on existing adjacent properties as well as those throughout the Ponte Vedra Coastal Corridor.
- (6) Roof and exterior Wall surfaces, with the exception of glass doors and windows shall be non-reflective. Any glass coating shall not reflect outward and shall be limited in color to gray or green. No more than forty (40) percent of the façade facing an Overlay District Delineated Roadway shall be glass or reflective material.
- (7) The location and dimensions of Wall Signs shall maintain compatibility with architectural materials, finishes and features of the Building. Wall signs shall be directly mounted on the surface of the building and shall not be mounted on raceways or other such protrusions from the surface of the building.
- (8) The Architectural Review Committee may require utilization of particular landscape and plant species where a pattern of vegetation has been established or where such species are determined to be desirable.
- (9) Architectural lighting shall be recessed under roof overhangs or generated from a concealed light source or low-level light fixtures. Site lighting shall be of low intensity, shall be of white light which does not distort colors and shall not spill over into adjoining properties, roadways or in any way interfere with the vision of oncoming motorists.

Staff review shows there are no open comments on this application at the time of writing this staff report. A Preapplication Meeting was not held with the Planning Division.

Attached for consideration are:

Application

Owners Authorization

Site Plan

Applicant Presentation with Renderings/Colors, Lighting, Landscaping, and Materials Details

CORRESPONDENCE

Staff has not received any phone calls or letters regarding the proposal as of the writing of this Staff Report.

SUGGESTED ACTION TO APPROVE

The Architectural Review Committee may consider a motion to approve **ARC 2024-04 Golf Club Patio Renovation** (**Ponte Vedra Inn & Club**), as described within the application, provided:

1. The request complies with the Ponte Vedra Zoning District Regulations relating to design standards and is consistent with the intent and purpose of the Ponte Vedra Zoning and Overlay Regulations.

SUGGESTED ACTION TO DENY

The Architectural Review Committee may consider a motion to deny **ARC 2024-04 Golf Club Patio Renovation (Ponte Vedra Inn & Club)**, provided:

1. The request does not comply with the Ponte Vedra Zoning District Regulations of the Ponte Vedra Zoning and Overlay Regulations.



Application for Overlay District Review Growth Management Department Planning and Zoning Division 4040 Lewis Speedway, St. Augustine, FL 32084

Phone: (904) 209-0675; Fax: (904) 209-0576 Date 02.28.2024 Overlay District | Ponte Vedra Overlay District Property ID No (Strap) 0509100000 Applicant Ponte Vedra Corp / Ponte Vedra Inn Phone Number 904.273.7798 Address 200 Ponte Vedra Blvd Fax Number City Ponte Vedra Beach State Zip Code 32082 E-mail mgordon@pvresorts.com Project Name Ponte Vedra Inn and Club, Golf Club Patio Renovation Project Address & Location #35 Pablo Road, Ponte Vedra Beach, FL, Section 15, Township 3 South, Range 29 East Type of Review Commercial Use Multi-family Use Other: Check all that apply Private Golf Club The Project Involves Check all that apply ✓ Other: Outdoor fireplace and hardscape renovations Describe Project and work proposed to be done (Provide additional information by attachment as needed) Removal of existing outdoor, concrete patio (approx. 660 sf) and pergola structure with associated columns. Removal of a portion of existing wood deck (approx. 80 sf). Removal of existing landscape and irrigation. Installation of approx. 1200 sf of concrete pavers and other impervious surfaces (approx. 540 sf new impervious surface).
 Construction of outdoor fireplace. Structure is approx 4.5' deep x 8.5' wide x 10.5' height constructed of CMU and painted brick.
 Repair and/or renovations to existing wood deck where the existing deck is removed or damaged due to construction activity. Landscape and irrigation installation. Install 1 new exterior door to clubhouse, exiting to renovated patio. I HEREBY CERTIFY THAT ALL INFORMATION IS CORRECT: Signature of owner or person authorized to represent this application: Signed By Printed or typed name(s) | Mark Klone, PLA, ASLA Contact Information of person to receive all correspondence if different than applicant: Phone Number 904.296.8066 Fax Number ☑E-mail | mklone@elmplan.com Postal Address 1301 Riverplace Blvd, Suite 1818 ELM - Mark Klone, PLA, ASLA FL City Jacksonville State Zip Code | 32207 Please notify the Planning and Zoning Division at (904) 209-0675 if you need any special assistance or accommodations to attend

Revised January 3, 2013

the name of the PUD/PRD:

the meeting or if you have any questions concerning this application.

Ponte Vedra Resort PUD - PUD2023000002

Please list any applications currently under review or recently approved which may assist in the review of this application including



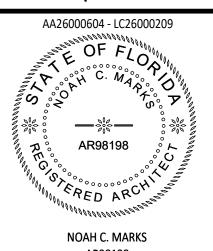
Owner's Authorization Form

ELM - Mark Klone, PLA, ASLA	is hereby authorized TO ACT ON BEHALF OF
Ponte Vedra Corp / Ponte Vedra Inn	the owners(s) of those lands described within
may be required, in applying to St. Johns Count	e attached deed or other such proof of ownership as y, Florida, for an application related to a development
Permit or other action pursuant to a: application f	Ponte Vedra Inn and Club, Golf Club Patio Renovation
By signing, I affirm that all legal owners(s), as listed on the	Recorded Warranty Deed on file with the St. Johns County Clerk of Cour
or otherwise stated (), have been	n notified of the
(Identify what document)	
I further understand incomplete or false information providevelopment actifity.	vided on this form may lead to revocation of permits, termination of
Signature of Owner and	1Alm
Print Name Michael	Gordon UP
Signature of Owner	
Print Name	
Telephone Number 404-285	- 1111
TATE OF FLORIDA ST. Johns	
he foregoing instrument was acknowledged before r	me by means of physical presence or online notarization, the
P. General Marages for Ponte	Veden Copf Pente Veden Van
CANTULE CONTROL Co.	thia & Com
Notary Public - State of Florida Notary	Public State of Florida
My Comm. Expires Oct 14, 2027 Name: Bonded through National Notary Assn. My Co	CYNTHUA S. COTU.
My Co	mmission Expires: mmission Number is:
Personally Known X_OR Produced Identification	
ype of Identification Produced	
Revised August 30, 2011	8-11

GOLF CLUB PATIO RENOVATION

PONTE VEDRA BEACH, FL CONSTRUCTION DOCUMENTS







ARCHITECTS, LANDSCAPE **ARCHITECTS**

PROJECT TEAM

ERVIN LOVETT & MILLER **1035 KINGS AVENUE** JACKSONVILLE, FLORIDA 32207 904.296.8066

STRUCTURAL ENGINEERING

KIESTER WEBB STRUCTURAL ENGINEERS LLC 6501 ARLINGTON EXPRESSWAY BLDG B, SUITE 156 JACKSONVILLE, FLORIDA 32211 904.619.2333

ELECTRICAL, PLUMBING

ENGINEERING POWELL & HINKLE ENG. 1409 KINGSLEY AVE # 12A, ORANGE PARK, FL 32073 904.264.5570

OWNER

PONTE VEDRA LODGE, INC. 9540 SAN JOSE BLVD. JACKSONVILLE, FL 32257 904-737-7220

CODE INFO., ABBREV., SYMBOLS, NOTES GENERAL NOTES & SPECIFICATIONS SITE, LAYOUT, & GRADING PLANS HARDSCAPE DETAILS HARDSCAPE DETAILS LANDSCAPE PLANS, PLANT SCHEDULE, & NOTES LANDSCAPE SPECIFICATIONS LANDSCAPE SPECIFICATIONS LANDSCAPE SPECIFICATIONS LANDSCAPE SPECIFICATIONS DEMO & NEW PLAN LEGEND, SCHEDULE & MISC. DETAILS PART SITE PLAN - ELECTRICAL LEGEND & NOTES POWER RISER PANEL SCH. SPECIFICATIONS AND DETAILS

DRAWING INDEX

HE CONTRACTOR SHALL VISIT THE SITE, COMPARE THE DRAWINGS AND SPECIFICATIONS AND INFORM THEMSELVES OF ALL CONDITIONS
N ORDER TO COMPLETE THE PROJECT IN ACCORDANCE WITH THE INTENT OF THE CONTRACT DOCUMENTS.
HE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS. THE CONTRACTOR SHALL NOTIFY THE PROJECT
COORDINATOR OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION AND FABRICATION. CONTRACTOR TO VERIFY ALL SIZES TYPES AND
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GENERAL NOTES

8. ALL DIMENSIONS SHOWN ARE SUBJECT TO VERIFICATION IN THE FIELD BY THE CONTRACTOR, AND THEY SHALL MAKE ALL CORRECTIONS AND ADJUSTMENTS AS REQUIRED PRIOR TO ORDERING, FABRICATION AND OR INSTALLATION.

CONTRACTOR SHALL COMPARE ALL CONTRACT DOCUMENTS WITH EACH OTHER AND REPORT IN WRITING TO THE PROJECT COORDINATOR ALL INCONSISTENCIES AND OMISSIONS. IN CASE OF CONFLICTS BETWEEN THE QUANTITY OF MATERIAL SCHEDULED ON THE

3. CONTRACTOR SHALL REPAIR, PATCH, SMOOTH, AND FINISH TO MATCH ADJACENT SURFACES DAMAGED FROM REMOVAL OR DEMOLITION WORK. AREAS, SUCH AS WALLS FOR PLUMBING AND ELECTRICAL WORK, THAT ARE REQUIRED TO BE REMOVED AND/OR

14. IF ANY MATERIALS EXISTING TO REMAIN WITHIN THE SCOPE OF WORK ARE DAMAGED DURING DEMOLITION OR DURING CONSTRUCTION, THE CONTRACTOR SHALL REPLACE THE TRIM, FINISHES OR SUBSTRATES WITH NEW TO MATCH EXISTING. 5. THE GENERAL CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH THE OWNER AND PROJECT COORDINATOR FOR DISCONNECTION,

BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. 7. PAINT FINISH ALL EXPOSED EXISTING MATERIAL AFFECTED BY THE WORK AND ALL NEW WORK. CONTRACTOR SHALL SEAL ALL PENETRATIONS AROUND NEW AND EXISTING CONDUITS, ALL PENETRATIONS AND CUT OPENINGS THROUGH WALLS PRIOR TO PAINTING

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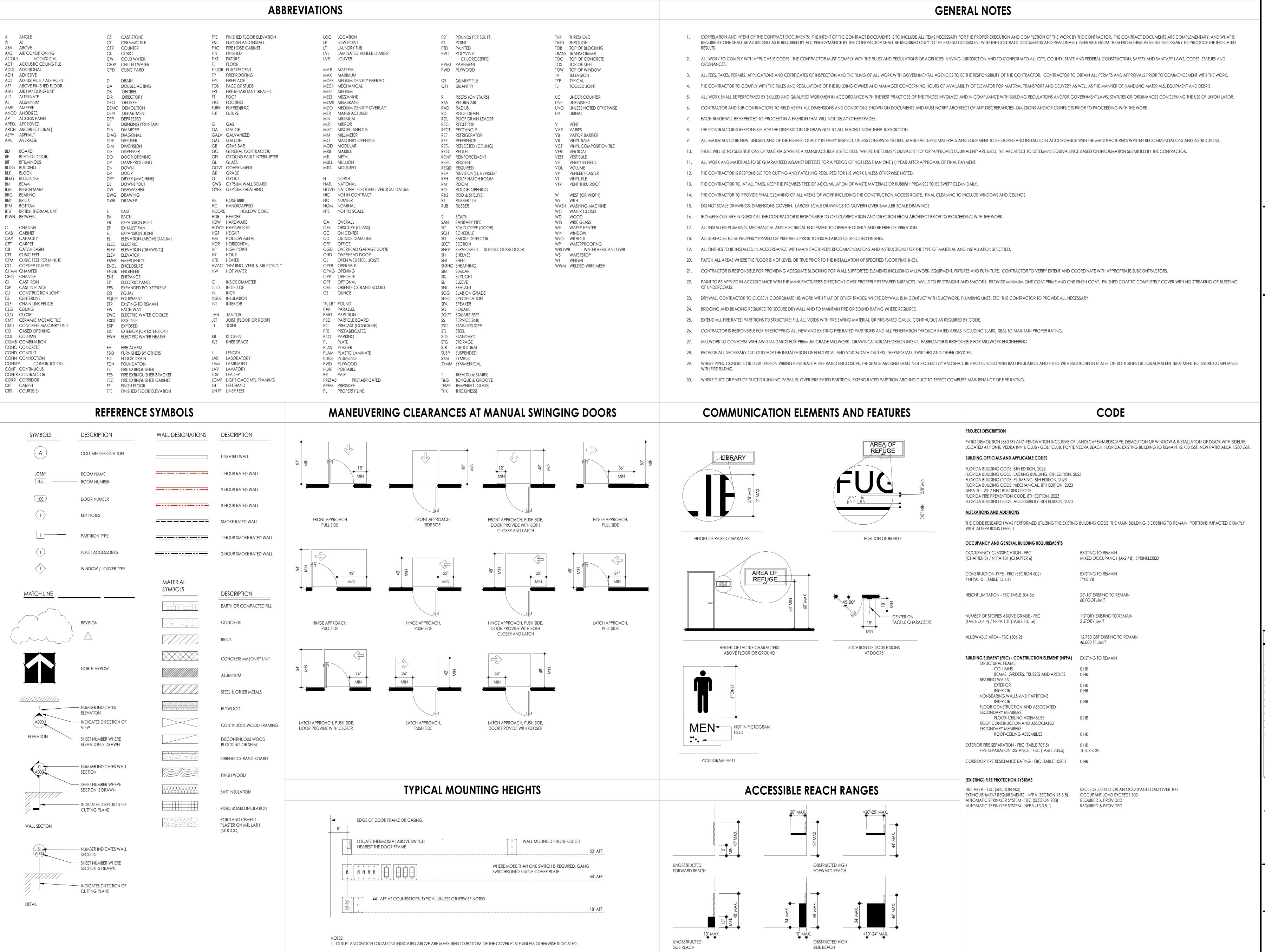
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Jacksonville
ELM Studio
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Suite 1818
Jacksonville, FL 32207
t 904.296.8066

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PROJ. #: 22-44

 PROJ. #:
 22-44

 DATE:
 12.22.2023

 DRAWN BY:
 AJW

 CHECKED BY:
 AS NOTED

CODE INFO., ABBREV., SYMBOLS, NOTES

SHEET NUMBER

G100

	OC	CCUPANCY SCHEDULE	Ē		LIFE SAFETY P	LAN LEGE	IND
OCCUPANCY TYPE	AREA	OCCUPANCY LOAD FACTOR	OCCUPANCY LOAD	32"			
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ASSEMBLY	924 SF	15	62 OCC			·	
ASSEMBLY	243 SF	15	16 OCC.			FDAB	
BUSINESS	171 SF	150	1 OCC.		REQUIRED ACCESSIBLE PUBLIC ENTRANCE		FIRE DEPT. BUILDING ACCESS BOX
BUSINESS	164 SF	150	1 OCC.				
BUSINESS	198 SF	150	2 OCC.	FE	FIDE EVILLOUIGUED	4	EMEDOENCY FYIT LICHT
ELEC	20 SF	300	0 OCC.	REQUIRED EGRESS AND EXIT REQUIRED ACCESSIBLE PUBL FE FIRE EXTINGUISHER FIRE EXTINGUISHER CABINET EXIT SIGN EXIT SIGN W/ DIRECTION EXIT SIGN W/ EMERGENCY LI	FIRE EXTINGUISHER		EMERGENCY EXILLIGHT
JAN	27 SF	300	1 OCC.	FEC		_	
KITCHEN	596 SF	200	3 OCC.		FIRE EYTINGLIISHER CARINET		STARTING LOCATION
LOCKER RM.	223 SF	50	5 OCC.	REQUIRED ACCESSIBLE PUBLIC ENTRANCE FDAB FIRE DEPT. BL OCC. OCC. OCC. OCC. OCC. OCC. OCC. OCC	STAKTING LOCATION		
LOCKER RM.	865 SF	50	17 OCC.				
LOUNGE	299 SF	15	20 OCC.		EXIT SICNI		MAX. TRAVEL DISTANCE
MECH	53 SF	300	1 OCC.		EATI SION		MAX. IKAYEE DISTANCE
MECH	66 SF	300	1 OCC.				
MECH	86 SF	300	1 OCC.		EYIT SIGN W/ DIPECTION		COMMON TRAVEL DISTANCE
MERCANTILE	1667 SF	60	28 OCC.		EATT SIGN WY DIRECTION		COMMON TRAVEL DISTANCE
PATIO	600 SF	15	40 OCC.				
RESTROOM	270 SF		N/A		EYIT SICNI W/ EMEDCENICY LIGHTS		FIRE EXTINGUISHER TRAVEL DISTANCE
RESTROOM	182 SF		N/A		EATI SIGN W/ EMERGENCT EIGHTS		TIKE EXTINGUISHER TRAVEL DISTANCE
RR	37 SF		N/A				
SHOWER	78 SF		N/A		LIFE SAFETY GE	INFRAI N <i>(</i>	OTES
SHOWERS	104 SF		N/A			114 PIV_P 14/	
STORAGE/UTILITY	203 SF	300	1 OCC.	1. ALL DOO	OR HARDWARE N.I.S. EXISTING TO REMAIN. NEW DOOR H	TARDWARE INCLLIDING O	TOSED HANDLES BILLS LATCHES LOCKS
STORAGE/UTILITY	364 SF	300	1 OCC.		LDS TO BE ADA COMPLIANT.	INDIVINE INCLUDING C	LOSEN, HANDLES, I ULES, LATOHES, LOCKS,
INTERIOR OCCUPANT LO	DAD		354		PORTABLE FIRE EXTINGUISHERS ARE EXISTING TO REMAIN	N.	

EXTERIOR OCCUPANT LOAD

TOTAL OCCUPANT LOAD

3. PROVIDE TACTILE EXIT SIGNAGE EXISTING TO REMAIN. PROVIDE EMERGENCY LIGHTING EXISTING TO REMAIN.

EXIT DISCHARE AT 3'-0" DOOR IS RECOGNIZED AS 34" CLEAR W/ 1/2" MIN. THRESHOLD.

EXIT DISCHARE AT 6'-0" DOOR IS RECOGNIZED AS 68" CLEAR W/ 1/2" MIN. THRESHOLD.

MAIN EXIT DOORS AT FRONT EXIT TO DEDICATED PATH OF TRAVEL/ACCESSIBLE ROUTE TO PUBLIC TRANSPORTATION STOPS, ACCESSIBLE PARKING, AND PASSENGER LOADING ZONES. EXISTING TO REMAIN.

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planning

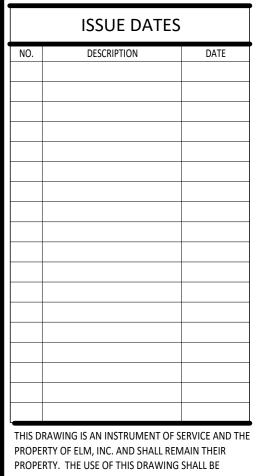
architecture

landscape architecture

urban design

visual communication

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<u>22-44</u> 12.22.2023 DATE: DRAWN BY: CHECKED BY: SCALE: ____AS NOTED

LIFE SAFETY PLAN

SHEET NUMBER

LIFE SAFETY PLAN - EXISTING GOLF CLUB

1/8" = 1'-0"





architecture
landscape architecture
urban design
visual communication

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1301 Riverplace Boulevard
Suite 1818
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PROJ. #: 22-44

DATE: 12.22.2023

DRAWN BY: MCK

CHECKED BY: MCK

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GENERAL NOTES &

SPECIFICATIONS

SCALE:

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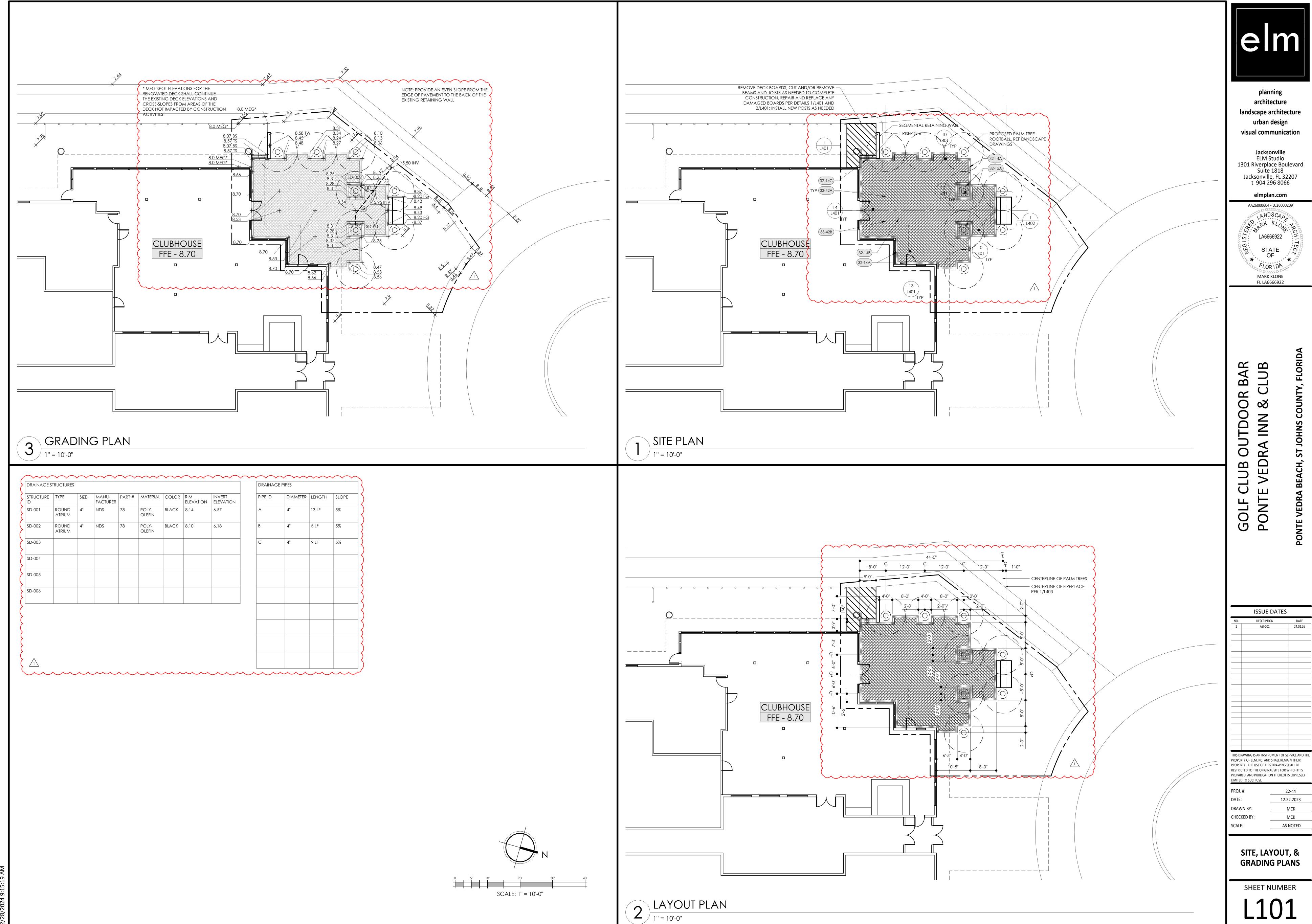
or refusal of finished work.

4. Contractor to verify and confirm all quantities.

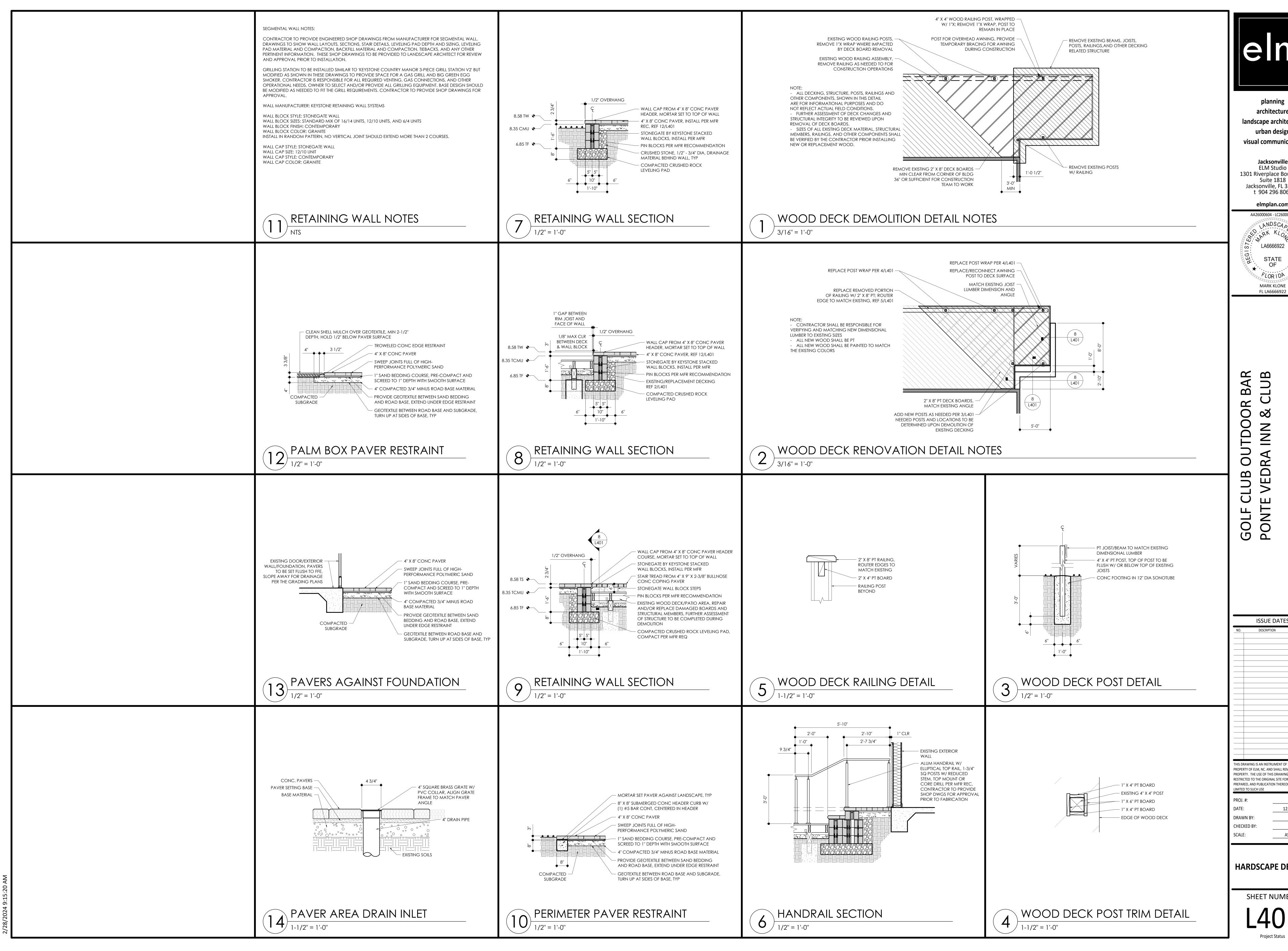
and/or Owner. The sample panel shall be the basis of acceptance or refusal of finished work. No portion of the sample panel shall be included in the finished work. Alternatively, at the Owner's discretion, samples of the payers may be submitted for review and

acceptance, and a previously installed section of pavers, from the existing park phase, may be used as the basis of acceptance

3. Contact information for vendors is provided to demonstrate the desired specification. General Contractor may submit product alternatives, of an equal or greater quality, to the Landscape Architect and/or Owner for approval via shop drawings and



22-44 12.22.2023



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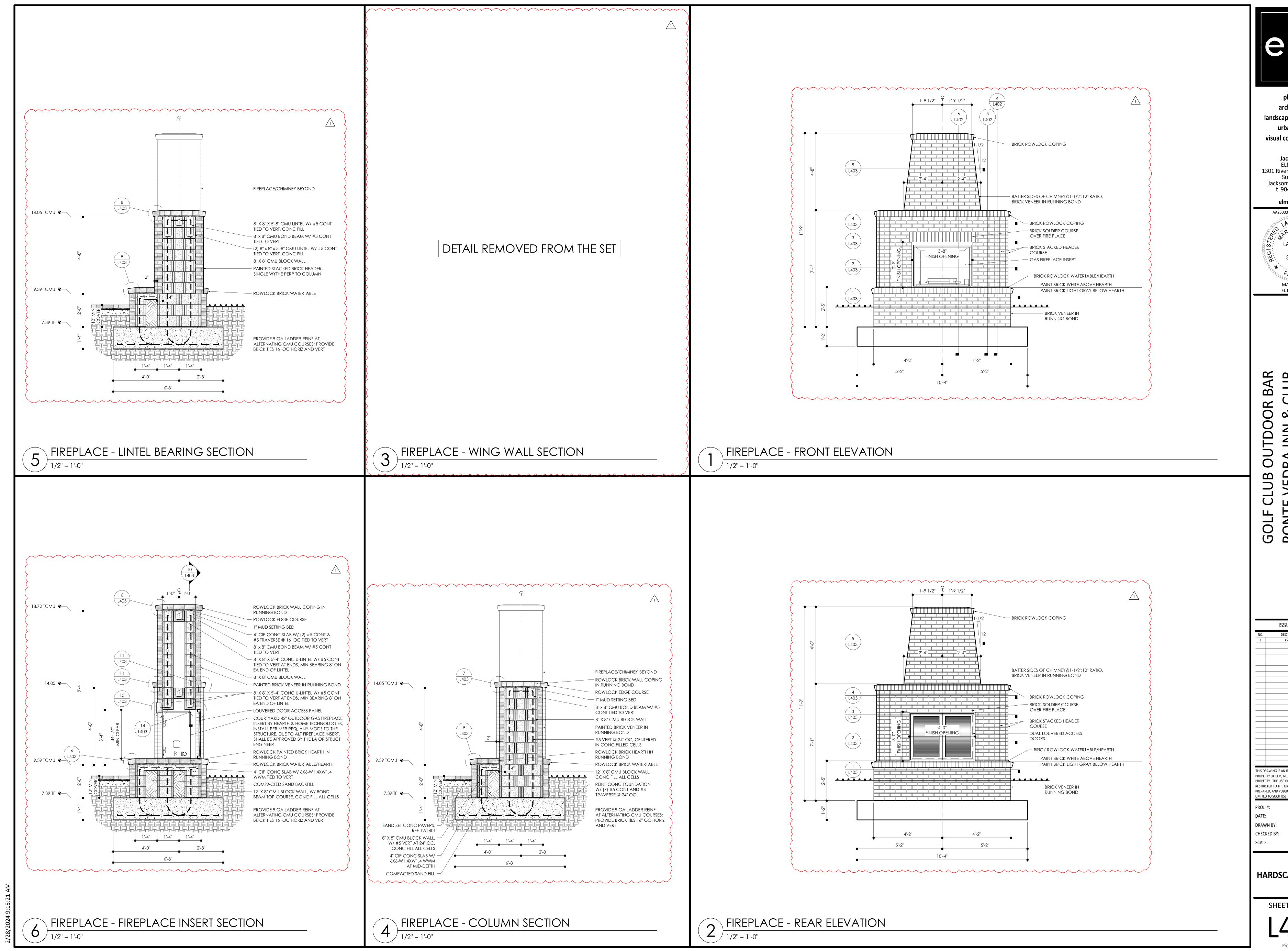
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HARDSCAPE DETAILS



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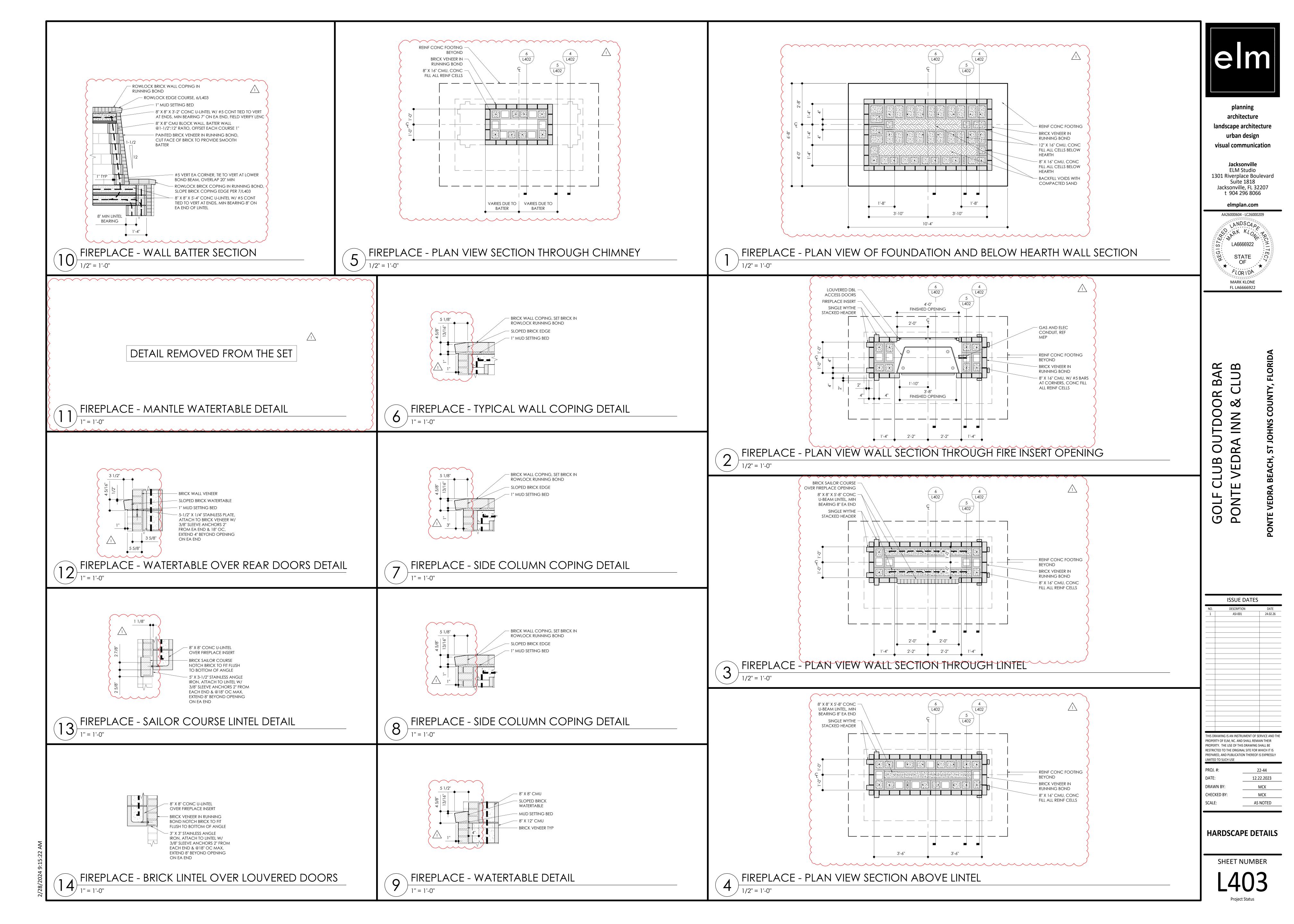
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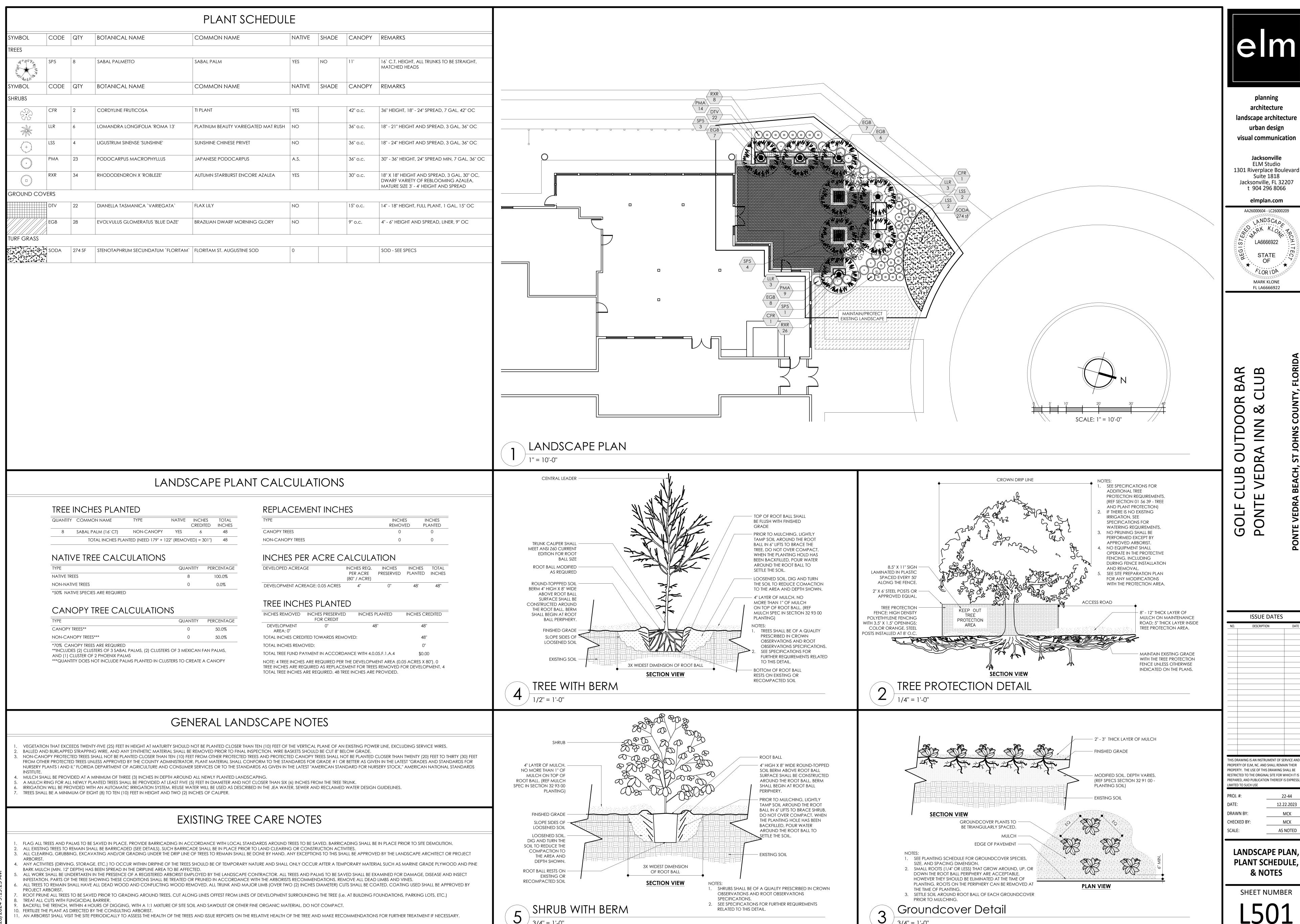
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HARDSCAPE DETAILS





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PLANT SCHEDULE, & NOTES

binding as if called for in all parts. B. VERIFICATION: The Contractor shall verify measurements on the drawings beforebeginning work. In case of error or discrepancy in the drawings or specifications or in the work of others affecting his/her work, he/she shall notify the Owner's Representative immediately. The Contractor shall be held responsible for any damages or loss due to his/her failure to observe these instructions.

C. MATERIALS, MACHINERY, EMPLOYEES: Except as otherwise noted, the Contractor shall provide and pay for all materials, labor, tools, and other items necessary and incidental to the completion of his/her work. D. SURVEYS, PERMITS, REGULATIONS: The Owner shall furnish an adequate survey of the property. The Contractor shall obtain and pay for all permits and comply with all laws and ordinances bearing on the operation or conduct of the work as drawn and specified. If the Contractor observes that a variance exists therewith he/she shall promptly notify the Owner's Representative in writing and any necessary changes shall be adjusted as provided in the contract for changes in the work.

E. PROTECTION OF WORK, PROPERTY AND PERSON: The Contractor shall adequately protect the work, adjacent property, and the public, and shall be responsible for any damages or injury due to his/her

F. CHANGES IN THE WORK: The owner may order changes in the work, and the contract sum being adjusted accordingly. All such orders and adjustments plus claims by the Contractor for extras must be made in writing before executing the work involved.

G. CORRECTION OF WORK: The Contractor shall re-execute any work that fails to conform to the requirements of the contract and shall remedy defects due to faulty materials or workmanship upon written notice from the Owner's Representative for a period of ninety (90) days from the date of completion of the contract. H. Owner's Authorized Representative: The Owner's authorized representative acts as the authorized representative of the Owner in conjunction with the project manager, and has authority to accept or reject materials or workmanship and to make minor changes in the work not involving extra cost. He will also interpret the meaning of the contract documents and may stop the work if necessary to ensure its

proper execution. I. CLARIFICATION OF DRAWINGS BEFORE BIDDING: After reviewing the drawings thoroughly it is the Contractor's responsibility to clarify with the Owner's Representative any questions the Contractor may have regarding the method of construction, quantities, or quality of materials included or called out. If the Contractor cannot contact the Owner's Representative, the Contractor must qualify his/her bid or accept the interpretation of the Owner's Representative on the questionable areas as they develop during

J. SAMPLES: The Owner's Representative reserves the right to take and analyze samples of materials for conformity to specifications at any time. The Contractor shall furnish samples upon request by the Owner's Representative. Rejected materials shall be immediately removed from the site and replaced at the Contractor's expense. The cost of testing materials not meeting specifications shall be paid by the

K. PRE-CONSTRUCTION CONFERENCE: Schedule a pre-construction meeting with the Owner's Representative at least seven (7) days before beginning work. The purpose of this conference is to review any questions the Contractor may have regarding the work, administrative procedures during construction and project work

SECTION 01 56 39 TREE AND PLANT PROTECTION

GENERAL 1.1 SUMMARY

A. The scope of work includes all labor, materials, tools, equipment, facilities, transportation and services necessary for, and incidental to performing all operations in connection with protection of existing trees and other plants as shown on the drawings and as specified herein.

1. Provide preconstruction evaluations

2. Provide tree and plant protection fencing. 3. Provide protection of root zones and above ground tree and plants

4. Provide pruning of existing trees and plants.

5. Coordinate with the requirements of Section 32 91 00 - Planting Soil for modifications to the soil within the root zone of existing trees and plants. 6. Provide all insect and disease control.

7. Provide maintenance of existing trees and plants including irrigation during the construction period as recommended by the arborist report.

8. Provide maintenance of existing trees and plants including irrigation during the post construction plant maintenance period.

9. Remove tree protection fencing and other protection from around and under trees and plants. 10. Clean up and disposal of all excess and surplus material. .2 CONTRACT DOCUMENTS

A. Shall consist of specifications and general conditions and the drawings. The intent of these documents is to include all labor, materials, and services necessary for the proper execution of the work. The documents are to be considered as one. Whatever is called for by any parts shall be as binding as if called for in all

B. It is the intent of this section that the requirements apply to all sections of the project specification such that any subcontractor must comply with the restrictions on work within designated Tree and Plant Protection

3 RELATED DOCUMENTS AND REFERENCES

A. Related Documents:

Division I specifications apply to work of this section. 2. Section 32 91 00 - Planting Soil

1. Drawings and general provisions of contract including general and supplementary conditions and

3. Section 32 92 00- Turf and Grasses

4. Section 32 93 00 - Planting

B. References: The following specifications and standards of the organizations and documents listed in this paragraph form a part of the specification to the extent required by the references thereto. In the event that the requirements of the following referenced standards and specification conflict with this specification section the requirements of this specification shall prevail. In the event that the requirements of any of the following referenced standards and specifications conflict with each other the more stringent requirement shall prevail.

1. ANSI A 300 (Part 5) - Standard Practices for Tree, Shrub and other Woody Plant Maintenance, most

2. Pruning practices shall conform with recommendations "Structural Pruning: A Guide For The Green Industry"; Published by Urban Tree Foundation, Visalia, California; most current edition. 3. Glossary of Arboricultural Terms, International Society of Arboriculture, Champaign IL, most current

1.4 VERIFICATION

A. All scaled dimensions on the drawings are approximate. Before proceeding with any work, the Contractor shall carefully check and verify all dimensions and quantities, and shall immediately inform the Owner's Representative of any discrepancies between the information on the drawings and the actual conditions, refraining from doing any work in said areas until given approval to do so by the Owner's Representative. PERMITS AND REGULATIONS

excluded under provision of the contract or general conditions. The Contractor shall comply with all laws and ordinances bearing on the operation or conduct of the work as drawn and specified. If the Contractor observes that a conflict exists between permit requirements and the work outlined in the contract documents, the Contractor shall promptly notify the Owner's Representative in writing including a description of any necessary changes and changes to the contract price resulting from changes in the

A. The Contractor shall obtain and pay for all permits related to this section of the work unless previously

B. Wherever references are made to standards or codes in accordance with which work is to be performed or tested, the edition or revision of the standards and codes current on the effective date of this contract shall apply, unless otherwise expressly set forth. C. In case of conflict among any referenced standards or codes or between any referenced standards and

codes and the specifications, the more restrictive standard shall apply or Owner's Representative shall determine which shall govern. .6 PROTECTION OF WORK, PROPERTY AND PERSON

A. The Contractor shall protect the work, adjacent property, and the public, and shall be responsible for any damages or injury due to his/her actions.

1.7 CHANGES IN THE WORK A. The Owner's Representative may order changes in the work, and the contract sum should be adjusted accordingly. All such orders and adjustments plus claims by the Contractor for extra compensation must be made and approved in writing before executing the work involved.

1.8 CORRECTION OF WORK A. The Contractor shall re-execute any work that fails to conform to the requirements of the contract and shall remedy defects due to faulty materials or workmanship upon written notice from the Owner's Representative, at the soonest possible time that can be coordinated with other work and seasonal

weather demands. All terms in this specification shall be as defined in the "Glossary of Arboricultural Terms" or as modified below.

A. Owner's Representative: The person appointed by the Owner to represent their interest in the review and approval of the work and to serve as the contracting authority with the Contractor. The Owner's Representative may appoint other persons to review and approve any aspects of the work. B. Reasonable and reasonably: When used in this specification is intended to mean that the conditions cited will not affect the establishment or long term stability, health or growth of the plant. This specification

recognizes that plants are not free of defects, and that plant conditions change with time. This specification also recognizes that some decisions cannot be totally based on measured findings and that profession judgment is required. In cases of differing opinion, the Owner's Representative expert shall determine when conditions within the plant are judged as reasonable. C. Shrub: Woody plants with mature height approximately less than 25 feet.

D. Tree and Plant Protection Area: Area surrounding individual trees, groups of trees, shrubs, or other vegetation to be protected during construction, and defined by a circle centered on the trunk with each tree with a radius equal to the clown dripline unless otherwise indicated by the owner's representative. E. Tree: Single and multi-stemmed plants, including palms with anticipated mature height approximately greater than 25 feet or any plant identified on the plans as a tree.

A. ARBORIST REPORT: Prior to the start of construction, submit, for approval by the Owner's Representative, the Consulting Arborists or an ISA Board Certified Master Arborist, which details the following information for all trees to remain within the area designated on the drawings as the Tree and Plant Protection Area. The report shall include the following:

1. A description of each tree to remain indicating its genus and species, condition including any visible damage to the root system or soil within the root zone, tree diameter at breast height (dbh) and approximate height, size and any visible disease, insect infestations and or branch and trunk structural

2. The report shall note all trees or parts of trees, which are considered a hazard or significant or extreme risk level. Include the International Society of Arboriculture hazard evaluation sheet for each tree, which may reasonably be identified as a potential hazard tree.

3. Recommendations as to treatment of all insect, disease and structural problems encountered. 4. Recommendations for fertilizer treatments, if any.

5. A plan of the site showing the location of all trees included in the report. B. PRODUCT DATA: Submit manufacturer product data and literature describing all products required by this section to the Owner's Representative for approval. Provide submittal four weeks before the start of any

C. QUALIFICATIONS SUBMITTAL: For each applicable person expected to work on the project, provide copies of the qualifications and experience of the Consulting arborist, proof of either the registered Consulting Arborist® (RCA) with American Society of Consulting Arborists or an ISA Board Certified Master Arborist and any required Herbicide/Pesticide license to the Owner's Representative, for review prior to the start of work. 1 OBSERVATION of the work

A. The Owner's Representative may inspect the work at any time.

A. Schedule a pre-construction meeting with the Owner's Representative at least seven (7) days before beginning work to review any questions the Contractor may have regarding the work, administrative procedures during construction and project work schedule.

1. The following Contractors shall attend the pre-construction conference: a. General Contractor.

b. Consulting Arborist.

c. Subcontractor assigned to install Tree and Plant Protection measures. d. Earthwork Contractor. e. All site utility Contractors that may be required to dig or trench into the soil.

g. Irrigation subcontractor B. Prior to this meeting, mark all trees and plants to remain and or be removed as described in this specification for review and approval by the Owner's Representative.

A. Contractor qualifications:

f. Landscape subcontractor.

1. All pruning, branch tie back, tree removal, root pruning, and fertilizing required by this section shall be performed by or under the direct supervision of ISA Certified Arborist Submit aforementioned individual's qualifications for approval by the Owner's Representative.

2. All applications of pesticide or herbicide shall be performed by a person maintaining a current state license to apply chemical pesticides valid in the jurisdiction of the project. Submit copies of all required state licensing certificates including applicable chemical applicator licenses.

PART 2 PRODUCTS

A. Reference Section 32 93 00: Planting, Part 2: Products, 2.6: Mulch for mulch specification. 2.2 TREE PROTECTION FENCING:

A. PLASTIC MESH FENCE: Heavy - duty orange plastic mesh fencing fabric 48 inches wide. Fencing shall be attached to metal "U" or "T" post driven into the ground of sufficient depth to hold the fabric solidly in place with out sagging. The fabric shall be attached to the post using attachment ties of sufficient number and strength to hold up the fabric without sagging. The Owner's Representative may request, at any time, additional post, deeper post depths and or additional fabric attachments if the fabric begins to sag, lean or otherwise not present a sufficient barrier to access.

B. Submit suppliers product data that product meets the requirements for approval. 2.3 TREE PROTECTION SIGN:

A. Heavy-duty cardboard signs, 8.5 inches x 11 inches, white colored background with black 2 inch high or larger letters block letters. The signs shall be attached to the tree protection fence every 50 feet o.c. The tree protection sign shall read "Tree and Plant Protection Area - Keep Out".

A. Matting for vehicle and work protection shall be heavy duty matting designed for vehicle loading over tree roots, Alturnamats as manufactured by Alturnamats, Inc. Franklin, PA 16323 or approved equal. B. Submit suppliers product data that product meets the requirements for approval.

A. Geogrid shall be woven polyester fabric with PVC coating, Uni-axial or biaxial geogrid, inert to biological degradation, resistant to naturally occurring chemicals, alkalis, acids. 1. Geogrid shall be Miragrid 2XT as manufactured by Ten Cate Nicolon, Norcross, GA.

http://www.tencate.com or approved equal. B. Submit suppliers product data that product meets the requirements for approval.

A. Filter Fabric shall be nonwoven polypropylene fibers, inert to biological degradation and resistant of naturally occurring chemicals, alkalis and acids. 1. Mirafi 135 N as manufactured by Ten Cate Nicolon, Norcross, GA. http://www.tencate.com or approved

B. Submit suppliers product data that product meets the requirements for approval.

A. Examine the site, tree, plant and soil conditions. Notify the Owner's Representative in writing of any conditions that may impact the successful Tree and Plant Protections that is the intent of this section.

3.2 COORDINATION WITH PROJECT WORK A. The Contractor shall coordinate with all other work that may impact the completion of the work. B. Prior to the start of Work, prepare a detailed schedule of the work for coordination with other trades. C. Coordinate the relocation of any irrigation lines currently present on the irrigation plan, heads or the

conduits of other utility lines or structures that are in conflict with tree locations. Root balls shall not be altered to fit around lines. Notify the Owner's Representative of any conflicts encountered. 3.3 TREE AND PLANT PROTECTION AREA: The Tree and Plant Protection Area is defined as all areas indicated on the tree protection plan. Where no limit of the Tree and Plant Protection area is defined on the drawings, the limit shall be the drip line (outer edge of the branch crown) of each tree.

B. Flag all trees and shrubs to be removed by wrapping orange plastic ribbon around the trunk and obtain

A. Prior to the pre-construction meeting, layout the limits of the Tree and Plant Protection Area and then alianments of required Tree and Plant Protection Fencing and root pruning. Obtain the Owner's Representative's approval of the limits of the protection area and the alignment of all fencing and root

3.14 WEED REMOVAL the Owner's Representative's approval of all trees and shrubs to be removed prior to the start of tree and shrub removal. After approval, mark all trees and shrubs to be removed with orange paint in a band completely around the base of the tree or shrub 4.5 feet above the ground. C. Flag all trees and shrubs to remain with white plastic ribbon tied completely around the trunk or each tree

and on a prominent branch for each shrub. Obtain the Owner's Representative's approval of all trees and shrubs to be remain prior to the start of tree and shrub removal. D. Prior to any construction activity at the site including utility work, grading, storage of materials, or installation of temporary construction facilities, install all tree protection fencing, Filter Fabric, silt fence, tree protection

SOIL MOISTURE A. Volumetric soil moisture level, in all soils within the Tree and Plant Protection Area shall be maintained above permanent wilt point to a depth of at least 8 inches. No soil work or other activity shall be permitted within the Tree and Plant Protection Area when the volumetric soil moisture is above field capacity. The permanent wilt point and field capacity for each type of soil texture shall be defined as follows (numbers

indicate percentage volumetric soil moisture) Soil type Permanent wilt point v/v Field capacity v/v Sand, Loamy sand, Sandy loam 5 - 8% Loam, Sandy clay, Sandy clay loam 14 - 25% 27 - 36%

11 - 22% 31 - 36% Clay loam, Silt loam Silty clay, Silty clay loam 22 - 27% 38 - 41%

signs, Geogrid, Mulch and or Wood Chips as shown on the drawings.

1. Volumetric soil moisture shall be measured with a digital, electric conductivity meter. The meter shall be the Digital Soil Moisture Meter, DSMM500 by General Specialty Tools and Instruments, or approved equivalent meter.

B. The Contractor shall confirm the soil moisture levels with a moisture meter. If the moisture is too high, suspend operations until the soil moisture drains to below field capacity. 6 ROOT PRUNING:

A. Prior to any excavating into the existing soil grade within 25 feet of the limit of the Tree and Plant Protection Area or trees to remain, root prune all existing trees to a depth of 24 inches below existing grade in alignments following the edges of the Tree and Plant Protection Area or as directed by the Owner's Representative. Root pruning shall be in conformance with ANSI A300 (part 8) latest edition.

1. Using a rock saw, chain trencher or similar trenching device, make a vertical cut within 2 feet of the limit ot grading. 2. After completion of the cut, make clean cuts with a lopper, saw or pruner to remove all torn root ends on the tree side of the excavation, and backfill the trench immediately with existing soil, filling all voids.

' INSTALLATION OF GEOGRIDS, FILTER FABRIC, MATTING, WOOD CHIPS AND OR MULCH A. Install Geogrids, Filter Fabric, matting, Wood Chips and or Mulch in areas and depths shown on the plans and details or as directed by the Owner's representative. In general it is the intent of this specification to

1. All areas within the Tree and Plant Protection area provide a minimum of 5 inches of Wood Chips or 2. Areas where foot traffic or storage of lightweight materials is anticipated to be unavoidable provide a

layer of Filter Fabric under the 5 inches of Wood Chips or Mulch. 3. Areas where occasional light vehicle traffic is anticipated to be unavoidable provide a layer of Geogrids under 8 inches of Wood Chips or Mulch. 4. Areas where heavy vehicle traffic is unavoidable provide a layer of Geogrids under 8 - 12 inches of

Wood Chips or Mulch and a layer of matting over the Wood Chips or Mulch. B. The Owner's Representative shall approve the appropriate level of protection. C. In the above requirements, light vehicle is defined as a track skid steer with a ground pressure of 4 psi or lighter. A heavy vehicle is any vehicle with a tire or track pressure of greater than 4 psi. Lightweight

materials are any packaged materials that can be physically moved by hand into the location. Bulk materials such as soil, or aggregate shall never be stored within the Tree and Plant Protection Area. A. Protect the Tree and Plant Protection Area at all times from compaction of the soil; damage of any kind to

trunks, bark, branches, leaves and roots of all plants; and contamination of the soil, bark or leaves with construction materials, debris, silt, fuels, oils, and any chemicals substance. Notify the Owner's Representative of any spills, compaction or damage and take corrective action immediately using methods approved by the Owner's Representative. 3.9 GENERAL REQUIREMENTS AND LIMITATIONS FOR OPERATIONS WITHIN THE TREE AND PLANT PROTECTION AREA:

A. The Contractor shall not engage in any construction activity within the Tree and Plant Protection Area without the approval of the Owner's Representative including: operating, moving or storing equipment; storing supplies or materials; locating temporary facilities including trailers or portable toilets and shall not permit employees to traverse the area to access adjacent areas of the project or use the area for lunch or any other work breaks. Permitted activity, if any, within the Tree and Plant Protection Area maybe indicated on the drawings along with any required remedial activity as listed below.

B. In the event that construction activity is unavoidable within the Tree and Plant Protection Area, notify the Owner's Representative and submit a detailed written plan of action for approval. The plan shall include: a statement detailing the reason for the activity including why other areas are not suited; a description of the proposed activity; the time period for the activity, and a list of remedial actions that will reduce the impact on the Tree and Plant Protection Area from the activity. Remedial actions shall include but shall not be 1. In general, demolition and excavation within the drip line of trees and shrubs shall proceed with extreme

care either by the use of hand tools, directional boring and or Air Knife excavation where indicated or with other low impact equipment that will not cause damage to the tree, roots or soil.

2. When encountered, exposed roots, 1 inches and larger in diameter shall be worked around in a manner that does not break the outer layer of the root surface (bark). These roots shall be covered in Wood Chips and shall be maintained above permanent wilt point at all times. Roots one inch and larger in diameter shall not be cut with out the approval of the owners representative. Excavation shall be tunneled under these roots without cutting them. In the areas where roots are encountered, work shall be performed and scheduled to close excavations as quickly as possible over exposed roots. 3. Tree branches that interfere with the construction may be tied back or pruned to clear only to the point necessary to complete the work. Other branches shall only be removed when specifically indicated by the Owner's Representative. Tying back or trimming of all branches and the cutting of roots shall be in accordance with accepted arboricultural practices (ANSI A300, part 8) and be performed under supervision of the arborist.

4. Matting: Install temporary matting over the Wood Chips or Mulch to the extent indicated. Do not permit foot traffic, scaffolding or the storage of materials within the Tree and Plant Protection Area to occur off of the temporary matting.

5. Trunk Protection: Protect the trunk of each tree to remain by covering it with a ring of 8 foot long 2 inch x 6 - inch planks loosely banded onto the tree with 3 steel bands. Staple the bands to the planks as necessary to hold them securely in place. Trunk protection must by kept in place no longer than 12 months. If construction requires work near a particular tree to continue longer than 12 months, the steel bands shall be inspected every six months and loosened if they are found to have become tight. 6. Air Excavation Tool: If excavation for footings or utilities is required within the Tree and Plant Protection Area, air excavation tool techniques shall be used where practical or as designed on the drawings.

a. Remove the Wood Chips from an area approximately 18 inches beyond the limits of the hole or trench to be excavated. Cover the Wood Chips for a distance of not less than 15 feet around the limit of the excavation area with Filter Fabric or plastic sheeting to protect the Wood Chips from silt.

Mound the Wood Chips so that the plastic slopes towards the excavation. b. Using a sprinkler or soaker hose, apply water slowly to the area of the excavation for a period of at least 4 hours, approximately 12 hours prior to the work so that the ground water level is at or near field capacity at the beginning of the work. For excavations that go beyond the damp soil, rewet the soil as necessary to keep soil moisture near field capacity.

c. Using an air excavation tool specifically designed and manufactured for the intended purpose, and at pressures recommended by the manufacturer of the equipment, fracture the existing soil to the shape and the depths required. Work at rates and using techniques that do not harm tree roots. Air pressure shall be a maximum of 90-100 psi. 1.) The air excavation tool shall be "Air-Spade" as manufactured by Concept Engineering Group, Inc., Verona, PA (412) 826-8800, or Air Knife as manufactured by Easy Use Air Tools, Inc. Allison Park,

Pa (866) 328-5723 or approved equal. d. Using a commercial, high-powered vacuum truck if required, remove the soil from the excavation produced by the Air Knife excavation. The vacuum truck should generally operate simultaneously with the hose operator, such that the soil produced is picked up from the excavation hole, and the exposed roots can be observed and not damaged by the ongoing operation. Do not drive the vacuum truck into the Tree and Plant Protection Area unless the area is protected from compaction

as approved in advance by the Owner's Representative. e. Remove all excavated soil and excavated Wood Chips, and contaminated soil at the end of the

f. Schedule the work so that foundations or utility work is completed immediately after the excavation. Do not let the roots dry out. Mist the roots several times during the day. If the excavated area must remain open over night, mist the roots and cover the excavation with black plastic. g. Dispose of all soil in a manner that meets local laws and regulations.

h. Restore soil within the trench as soon as the work is completed. Utilize soil of similar texture to the removed soil and lightly compact with hand tools. Leave soil mounded over the trench to a height of approximately 10% of the trench depth to account for settlement. Restore any Geogrids, Filter Fabric, Wood Chips or Mulch and or matting that was previously required

A. Remove all trees indicated by the drawings and specifications, as requiring removal, in a manner that will not damage adjacent trees or structures or compacts the soil. B. Remove trees that are adjacent to trees or structures to remain, in sections, to limit the opportunity of

damage to adjacent crowns, trunks, ground plane elements and structures. C. Do not drop trees with a single cut unless the tree will fall in an area not included in the Tree and Plant Protection Area. No tree to be removed within 50 feet of the Tree and Plant Protection Area shall be pushed over or up-rooted using a piece of grading equipment.

D. Protect adjacent paving, soil, trees, shrubs, ground cover plantings and understory plants to remain from damage during all tree removal operations, and from construction operations. Protection shall include the root system, trunk, limbs, and crown from breakage or scarring, and the soil from compaction. E. Remove stumps and immediate root plate from existing trees to be removed. Grind trunk bases and large buttress roots to a depth of the largest buttress root or at least 18 inches below the top most roots which

ever is less and over the area of three times the diameter of the trunk (DBH). 1. For trees where the stump will fall under new paved areas, grind roots to a total depth of 18 inches below the existing grade. If the sides of the stump hole still have greater than approximately 20% wood visible, continue grinding operation deeper and or wider until the resulting hole has less than 20% wood. Remove all wood chips produced by the grinding operation and back fill in 8 inch layers with controlled fill of a quality acceptable to the site engineer for fill material under structures, compacted to 95% of the maximum dry density standard proctor. The Owner's Representative shall approve each hole at the end of the grinding operation.

2. In areas where the tree location is to be a planting bed or lawn, remove all woodchips and backfill stump holes with planting soil as defined in Specification Section Planting Soil, in maximum of 12 inch layers and compact to 80 - 85% of the maximum dry density standard proctor.

A. Within six months of the estimated date of substantial completion, prune all dead or hazardous branches larger than 2 inch in diameter from all trees to remain. B. Implement all pruning recommendations found in the arborist report.

C. Prune any low, hanging branches and vines from existing trees and shrubs that overhang walks, streets and drives, or parking areas as follows: 1. Walks - within 8 feet vertically of the proposed walk elevation. 2. Parking areas - within 12 feet vertically of the proposed parking surface elevation.

3. Streets and drives - within 14 feet vertically of the proposed driving surface elevation. D. All pruning shall be done in accordance with ANSI A300 (part 1), ISA BMP Tree Pruning (latest edition, and the "Structural Pruning: A Guide for the Green Industry", Edward Gilman, Brian Kempf, Nelda Matheny and Jim Clark, 2013 Urban Tree Foundation, Visalia CA.

E. Perform other pruning task as indicated on the drawings or requested by the Owner's Representative. F. Where tree specific disease vectors require, sterilize all pruning tools between the work in individual trees. 3.13 WATERING A. The Contractor shall be fully responsible to ensure that adequate water is provided to all plants to be

preserved during the entire construction period. Adequate water is defined to be maintaining soil moisture above the permanent wilt point to a depth of 8 inches or greater. B. The Contractor shall adjust the automatic irrigation system, if available, and apply additional water, using hoses or water tanks as required. C. Periodically test the moisture content in the soil within the root zone to determine the water content.

A. During the construction period, control any plants that seed in and around the fenced Tree and Plant Protection area at least three times a year. 1. All plants that are not shown on the planting plan or on the Tree and Plant Protection Plan to remain shall be considered as weeds.

B. At the end of the construction period provide one final weeding of the Tree and Plant Protection Area. .15 INSECT AND DISEASE CONTROLLER A. Monitor all plants to remain for disease and insect infestations during the entire construction period. Provide all disease and insect control required to keep the plants in a healthy state using the principles of Integrated Plant Management (IPM). All pesticides shall be applied by a certified pesticide applicator.

A. During tree and plant protection work, keep the site free of trash, pavements reasonably clean and work area in an orderly condition at the end of each day. Remove trash and debris in containers from the site no less than once a week

1. Immediately clean up any spilled or tracked soil, fuel, oil, trash or debris deposited by the Contractor from all surfaces within the project or on public right of ways and neighboring property. B. Once tree protection work is complete, wash all soil from pavements and other structures. Ensure that Mulch is confined to planting beds.

C. Make all repairs to grades, ruts, and damage to the work or other work at the site. D. Remove and dispose of all excess Mulch, Wood Chips, packaging, and other material brought to the site by the Contractor. 3.17 REMOVAL OF FENCING AND OTHER TREE PLANT PROTECTION

A. At the end of the construction period or when requested by the Owner's Representative remove all fencing, Wood Chips or Mulch, Geogrids and Filter Fabric, trunk protection and or any other Tree and Plant Protection material. 3.18 DAMAGE OR LOSS TO EXISTING PLANTS TO REMAIN

A. Any trees or plants designated to remain and which are damaged by the Contractor shall be replaced in kind by the Contractor at their own expense. Trees shall be replaced with a tree of similar species and of equal size or 6 inch caliper which ever is less. Shrubs shall be replaced with a plant of similar species and equal size or the largest size plants reasonably available which ever is less. Where replacement plants are to be less than the size of the plant that is damaged, the Owner's Representative shall approve the size and quality of the replacement plant.

1. All trees and plants shall be installed per the requirements of Specification Section Planting. B. Plants that are damaged shall be considered as requiring replacement or appraisal in the event that the damage affects more than 25 % of the crown, 25% of the trunk circumference, or root protection area, or the tree is damaged in such a manner that the tree could develop into a potential hazard. Trees and

shrubs to be replaced shall be removed by the Contractor at his own expense. 1. The Owner's Representative may engage an independent arborist to assess any tree or plant that appears to have been damaged to determine their health or condition. C. Any tree that is determined to be dead, damaged or potentially hazardous by the Owner's arborist and upon the request of the Owner's Representative shall be immediately removed by the Contractor at no

additional expense to the owner. Tree removal shall include all clean up of all wood parts and grinding o the stump to a depth sufficient to plant the replacement tree or plant, removal of all chips from the stump site and filling the resulting hole with topsoil. D. Any remedial work on damaged existing plants recommended by the consulting arborist shall be completed by the Contractor at no cost to the owner. Remedial work shall include but is not limited to: soil compaction remediation and vertical mulching, pruning and or cabling, insect and disease control

including injections, compensatory watering, additional mulching, and could include application tree E. Remedial work may extend up to two years following the completion of construction to allow for any requirements of multiple applications or the need to undertake applications at required seasons of the

END OF SECTION 01 56 39

SECTION 32 91 00

PLANTING SOIL

PART 1 GENERAL 1.1 SUMMARY

A. The scope of work includes all labor, materials, tools, supplies, equipment, facilities, transportation and services necessary for, and incidental to performing all operations in connection with furnishing, delivery, and installation of Planting Soil and /or the modification of existing site soil for use as Planting Soil, complete as shown on the drawings and as specified herein.

B. The scope of work in this section includes, but is not limited to, the following: 1. Locate, purchase, deliver and install Imported Planting Soil and soil amendments. 2. Harvest and stockpile existing site soils suitable for Planting Soil.

3. Modify existing stockpiled site soil. a. Modity existing site soil in place for use as Planting Soil b. Install existing or modified existing soil for use as Planting Soil. 4. Locate, purchase, deliver and install subsurface Drain Lines. 5. Fine grade Planting Soil.

6. Install Compost into Planting Soil. 7. Clean up and disposal of all excess and surplus material.

1.3 RELATED DOCUMENTS AND REFERENCES

1.2 CONTRACT DOCUMENTS A. Shall consist of specifications, general conditions, and the drawings. The intent of these documents is to include all labor, materials, and services necessary for the proper execution of the work. The documents are to be considered as one. Whatever is called for by any parts shall be as binding as if called for in all

A. Related Documents: 1. Drawings and general provisions of contract, including general and supplementary conditions and Division I specifications, apply to work of this section. 2. Related Specification Section a. Section 01 56 39 - Tree and Plant Protection

b. Section 32 92 00 - Turf and Grasses

c. Section 32 93 00 - Planting 3. References: The following specifications and standards of the organizations and documents listed in this paragraph form a part of the Specification to the extent required by the references thereto. In the event that the requirements of the following referenced standards and specification conflict with this specification section the requirements of this specification shall prevail. In the event that the requirements of any of the following referenced standards and specifications conflict with each other the more stringent requirement shall prevail.

1. ASTM: American Society of Testing Materials cited section numbers. 2. U.S. Department of Agriculture, Natural Resources Conservation Service, 2003. National Soil Survey Handbook, title 430-VI. Available Online.

3. US Composting Council www.compostingcouncil.org and http://compostingcouncil.org/admin/wp-content/plugins/wp-pdfupload/pdf/191/LandscapeArch_Specs.pdf. 4. Methods of Soil Analysis, as published by the Soil Science Society of America (http://www.soils.org/). 5. Up by Roots: healthy soils and trees in the built environment. 2008. J. Urban. International Society of

Arboriculture, Champaign, IL. A. All scaled dimensions on the drawings are approximate. Before proceeding with any work, the Contractor shall carefully check and verify all dimensions and quantities, and shall immediately inform the Owner's Representative of any discrepancies between the information on the drawings and the actual conditions, refraining from doing any work in said areas until given approval to do so by the Owner's Representative.

PERMITS AND REGULATIONS A. The Contractor shall obtain and pay for all permits related to this section of the work unless previously excluded under provision of the contract or general conditions. The Contractor shall comply with all laws and ordinances bearing on the operation or conduct of the work as drawn and specified. If the Contractor observes that a conflict exists between permit requirements and the work outlined in the contract documents, the Contractor shall promptly notify the Owner's Representative in writing including a description of any necessary changes and changes to the contract price resulting from changes in the

B. Wherever references are made to standards or codes in accordance with which work is to be performed or tested, the edition or revision of the standards and codes current on the effective date of this contract shall apply, unless otherwise expressly set forth. C. In case of conflict among any referenced standards or codes or among any referenced standards and

codes and the specifications, the more restrictive standard shall apply or Owner's Representative shall determine which shall govern. 1.6 PROTECTION OF WORK, PROPERTY AND PERSON

A. The Contractor shall adequately protect the work, adjacent property, and the public, and shall be responsible for any damages or injury due to the Contractor's actions. 1.7 CHANGES IN WORK

approved in writing before executing the work involved.

than 12 inches, and further defined in this specification.

smaller than 18 inches in diameter thru the soil zone.

tiller, (or spade tiller), and further defined in this specification.

B. All changes in the work, notifications and contractor's request for information (RFI) shall conform to the contract general condition requirements. 1.8 CORRECTION OF WORK A. The Contractor shall re-execute any work that fails to conform to the requirements of the contract and shall remedy defects due to faulty materials or workmanship upon written notice from the Owner's

Representative, at the soonest possible time that can be coordinated with other work and seasonal

A. The Owner's Representative may order changes in the work, and the contract sum adjusted accordingly.

All such orders and adjustments plus claims by the Contractor for extra compensation must be made and

. Acceptable drainage: Drainage rate is sufficient for the plants to be grown. Not too fast and not too slow. Typical rates for installed Planting Soil are between 1 - 5 inches per hour. Turf soils are often higher, but drainage rates above 2 - 3 inches per hour will dry out very fast. In natural undisturbed soil a much lower drainage rate, as low as 1/8th inch per hour can still support good plant growth. Wetland plants can grow on top of perched water layers or even within seasonal perched water layers, but could become unstable

weather demands but not more than 180 (one hundred and eighty) days after notification.

in high wind events. B. Amendment: material added to Topsoil to produce Planting Soil Mix. Amendments are classified as general soil amendments, fertilizers, biological, and pH amendments. C. Biological Amendment: Amendments such as Mycorrhizal additives, compost tea or other products intended to change the soil biology.

D. Compacted soil: soil where the density of the soil is greater that the threshold for root limiting, and further defined in this specification. E. Compost: well decomposed stable organic material as defined by the US Composting Council and further defined in this specification. F. Drainage: The rate at which soil water moves through the soil transitioning the soil from saturated condition

to field capacity. Most often expressed as saturated hydraulic conductivity (Ksat; units are inches per hour). G. End of Warranty Acceptance: The date when the Owner's Representative accepts that the plants and work in this section meet all the requirements of the warranty. It is intended that the materials and workmanship warranty for Planting, Planting Soil, and Irrigation (if applicable) work run concurrent with each other, and further defined in this specification.

H. Existing Soil: Mineral soil existing at the locations of proposed planting after the majority of the construction within and around the planting site is completed and just prior to the start of work to prepare the planting area for soil modification and/or planting, and further defined in this specification. I. Fertilizer: amendment used for the purpose of adjusting soil nutrient composition and balance. J. Fine grading: The final grading of the soil to achieve exact contours and positive drainage, often

accomplished by hand rakes or drag rakes other suitable devices, and turther detined in this specification, and further defined in this specification. K. Finished grade: surface or elevation of Planting Soil after final grading and 12 months of settlement of the soil, and further defined in this specification. L. Graded soil: Soil where the A horizon has been stripped and relocated or re-spread; cuts and fills deeper

M. Installed soil: Planting soil and existing site soil that is spread and or graded to form a planting soil, and further defined in this specification. N. Minor disturbance: Minor grading as part of agricultural work that only adjusts the A horizon soil, minor surface compaction in the top 6 inches of the soil, applications of fertilizers, installation of utility pipes

O. Owner's Representative: The person or entity, appointed by the Owner to represent their interest in the review and approval of the work and to serve as the contracting authority with the Contractor. The Owner's Representative may appoint other persons to review and approve any aspects of the work. P. Ped: a clump or clod of soil held together by a combination of clay, organic matter, and fungal hyphae, retaining the original structure of the harvested soil.

components that exist at the site, or are imported to the site; and further defined in this specification. R. Poor drainage: Soil drainage that is slower than that to which the plants can adapt. This is a wide range of metrics, but generally if the soil is turning gray in color it is reasonable preferable to either to plant moisture adaptive plants at smaller sizes that are young in age with shallow root balls or look at options to improve

S. Scarify: Loosening and roughening the surface of soil and sub soil prior to adding additional soil on top, and further defined in this specification. T. Soil Fracturing: Deep loosening the soil to the depths specified by using a back hoe, and further defined in

Q. Planting Soil: Topsoil, or Planting Soil Mixes which are imported or existing at the site, or made from

U. Soil Horizons: as defined in the USDA National Soil Survey Handbook http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242. V. Soil Ripping: Loosening the soil by dragging a ripping shank or chisel thru the soil to the depths and spacing specified, and further defined in this specification.

X. Soil trenching: Cutting narrow trenches thru the soil at the depths and spacing specified to loosen the soil profile, and further defined in this specification. Y. Subgrade: surface or elevation of subsoil remaining after completing excavation, or top surface of a fill or backfill, before placing Planting Soil.

Z. Substantial Completion Acceptance: The date at the end of the Planting, Planting Soil, and Irrigation

W. Soil Tilling: Loosening the surface of the soil to the depths specified with a rotary tine tilling machine, roto

installation (if applicable) where the Owner's Representative accepts that all work in these sections is complete and the Warranty period has begun. This date may be different than the date of substantial completion for the other sections of the project, and further defined in this specification. AA. Topsoil: naturally produced and harvested soil from the A horizon or upper layers or the soil as further defined in this specification.

AB. Undisturbed soil: Soils with the original A horizon intact that have not been graded or compacted. Soils that have been farmed, subjected to fire or logged but not graded, and natural forested land will be considered as undisturbed.

A. See the contract General Conditions for policy and procedures related to submittals. B. Submit all product submittals eight weeks prior to the start of the soil work. C. Product data and certificates: For each type of manufactured product, submit data and certificates that the product meets the specification requirements, signed by the product manufacturer, and complying

with the following: 1. Submit manufacturers or supplier's product data and literature certified analysis for standard products and bulk materials, complying with testing requirements and referenced standards and specific requested testing.

a. For each Compost product submit the following analysis by a recognized laboratory:

2.) Salt concentration (electrical conductivity) 3.) Moisture content %, wet weight basis 4.) Particle size % passing a selected mesh size, dry weight basis 5.) Stability carbon dioxide evolution rate mg CO2-C per g OM per day

6.) Solvita maturity test 7.) Physical contaminants (inerts) %, dry weight basis 8.) US EPA Class A standard, 40CFR § 503.13, Tables 1 and 3 levels Chemical Contaminants mg/kg

b. For Coarse Sand product submit the following analysis by a recognized laboratory: 2.) Particle size distribution (percent passing the following sieve sizes): 3/8 inch (9.5 mm)

No 50 (.30 mm) No 100 (.15 mm) No 200 (.075 mm) D. Samples: Submit samples of each product and material, where required by Part 2 of the specification, to

c. All soil testing will be at the expense of the Contractor.

No 4 (4.75 mm)

No 8 (2.36 mm)

No 16(1.18 mm)

No 30 (.60 mm)

sand in addition to silt and clay.

in the work. Samples will be reviewed for appearance only. 1. Submit samples a minimum of 8 weeks prior to the anticipated date of the start of soil installation. 2. Samples of all Topsoil, Coarse Sand, Compost and Planting Soil shall be submitted at the same time as the particle size and physical analysis of that material.

1. Topsoil, existing site soil and Planting Soil Mix testing: Submit soil test analysis report for each sample of Topsoil, existing site soil and Planting Soil from an approved soil-testing laboratory and where indicated in Part 2 of the specification as follows: a. Submit Topsoil, Planting Soil, Compost, and Coarse Sand for testing at least 8 weeks before scheduled

E. Soil testing for Imported and Existing Topsoil, existing site soil to be modified as Planting Soil and Planting Soil

the Owner's Representative for approval. Label samples to indicate product, characteristics, and locations

installation of Planting Soil Mixes. Submit Planting Soil Mix test no more than 2 weeks after the approval of the Topsoil, Compost and Coarse Sand. Do not submit to the testing laboratory, Planting Soil Mixes, for testing until all Topsoil, Compost and Coarse Sand have been approved. b. If tests fail to meet the specifications, obtain other sources of material, retest and resubmit until accepted by the Owner's Representative.

2. Provide a particle size analysis (% dry weight) and USDA soil texture analysis. Soil testing of Planting Soil

Mixes shall also include USDA gradation (percentage) of gravel, coarse sand, medium sand, and fine

3. Provide the following other soil properties:

a. pH and buffer pH.

b. Percent organic content by oven dried weight. c. Nutrient levels by parts per million including: phosphorus, potassium, magnesium, manganese, iron, zinc and calcium. Nutrient test shall include the testing laboratory recommendations for

supplemental additions to the soil for optimum growth of the plantings specified. d. Soluble salt by electrical conductivity of a 1:2 soil water sample measured in Milliohm per cm. e. Cation Exchange Capacity (CEC).

1.11 OBSERVATION OF THE WORK A. The Owner's Representative may observe the work at any time. They may remove samples of materials for conformity to specifications. Rejected materials shall be immediately removed from the site and replaced at the Contractor's expense. The cost of testing materials not meeting specifications shall be paid by the

the following key times in the construction process. The Owner's Representative shall be afforded sufficient

1. The Owner's Representative may utilize the Contractor's penetrometer and moisture meter at any time to check soil compaction and moisture. B. The Owner's Representative shall be informed of the progress of the work so the work may be observed at

time to schedule visit to the site. Failure of the Owner's Representative to make field observations shall not relieve the Contractor from meeting all the requirements of this specification. 1. SOIL MOCKUP REVIEW: At the time of construction of all soil mockups. 2. EXISTING SOIL CONDITIONS REVIEW: Prior to the start of any soil modification that will utilize or modify the

3. EXCAVATION REVIEW: Observe each area of excavation prior to the installation of any Planting Soil. 4. DRAIN LINE INSTALLATION REVIEW: Upon completion of the installation of drain lines and prior to the installation of any Planting Soil

5. COMPLETION of SOIL MODIFICATIONS REVIEW: Upon completion of all soil modification and installation o 6. COMPLETION OF FINE GRADING AND SURFACE SOIL MODIFICATIONS REVIEW: Upon completion of all surface soil modifications and fine grading but prior to the installation of shrubs, ground covers, or lawns.

1.12 PRE-CONSTRUCTION CONFERENCE A. Schedule a pre-construction meeting with the Owner's Representative at least seven (7) days before beginning work to review any questions the Contractor may have regarding the work, administrative procedures during construction and project work schedule.

A. Installer Qualifications: The installer shall be a firm having at least 5 years of experience of a scope similar to that required for the work, including the preparation, mixing and installation of soil mixes to support planting. The installer of the work in Section: Planting, shall be the same firm installing the work in this section.

1. The bidders list for work under this section shall be approved by the Owner's Representative. 2. Installer Field Supervision: When any Planting Soil work is in progress, installer shall maintain, on site, an experienced full-time supervisor who can communicate in English with the Owner's Representative. 3. Installer's field supervisor shall have a minimum of five years experience as a field supervisor installing soil, shall be trained and proficient in the use of field surveying equipment to establish grades and can

communicate in English with the Owner's Representative. 4. The installer's crew shall be experienced in the installation of Planting Soil, plantings, and irrigation (where applicable) and interpretation of planting plans, soil installation plans, and irrigation plans (where

5. Submit references of past projects and employee training certifications that support that the Contractors

B. Soil testing laboratory qualifications: an independent laboratory, with the experience and capability to conduct the testing indicated and that specializes in USDA agricultural soil testing, Planting Soil Mixes, and the types of tests to be performed. Geotechnical engineering testing labs shall not be used. C. All delivered and installed Planting Soil shall conform to the approved submittals sample color, texture and

meet all of the above installer qualifications and applicable licensures.

www.benmeadows.com or approved equal.

when at similar moisture levels.

approved test analysis.

1. The Owner's Representative may request samples of the delivered or installed soil be tested for analysis to confirm the Planting Soil conforms to the approved material. 2. All testing shall be performed by the same soil lab that performed the original Planting Soil testing. 3. Testing results shall be within 10% plus or minus of the values measured in the approved Planting Soil

4. Any Planting Soil that fails to meet the above criteria, if requested by the Owner's Representative, shall be removed and new soil installed. D. Soil compaction testing: following installation or modification of soil, test soil compaction with a

check soil compaction and soil moisture. a. Penetrometer shall be AgraTronix Soil Compaction Meter distributed by Ben Meadows, www.benmeadows.com or approved equal. b. Moisture meter shall be "general digital soil moisture meter" distributed by Ben Meadows,

1. Maintain at the site at all times a soil cone penetrometer with pressure dial and a soil moisture meter to

mockup soils. Penetrometer readings are impacted by soil moisture and excessively wet or dry soils will read significantly lower or higher than soils at optimum moisture. 3. The penetrometer readings shall be within 20% plus or minus of the readings in the approved mockup

1.14 SITE CONDITIONS A. It is the responsibility of the Contractor to be aware of all surface and subsurface conditions, and to notify the Owner's Representative, in writing, of any circumstances that would negatively impact the health of plantings. Do not proceed with work until unsatisfactory conditions have been corrected. 1. Should subsurface drainage or soil conditions be encountered which would be detrimental to growth o survival of plant material, the Contractor shall notify the Owner's Representative in writing, stating the

Owner's Representative of such conditions, they shall remain responsible for plant material under the warrantee clause of the specifications. 2. This specification requires that all Planting Soil and Irrigation (if applicable) work be completed and accepted prior to the installation of any plants.

conditions and submit a proposal covering cost of corrections. If the Contractor fails to notify the

1.15 SOIL COMPACTION - GENERAL REQUIREMENTS A. Except where more stringent requirements are defined in this specification. The following parameters shall define the general description of the threshold points of soil compaction in existing, modified or installed soil

1. Acceptable Compaction: Good rooting anticipated, but increasing settlement expected as compaction is reduced and/or in soil with a high organic matter content. a. Bulk Density Method - Varies by soil type see Chart on page 32 in Up By Roots.

b. Standard Proctor Method - 75-85%; soil below 75% is unstable and will settle excessively. c. Penetration Resistance Method - about 75-250 psi, below 75 psi soil becomes increasingly unstable and will settle excessively. 2. Root limiting Compaction: Root growth is limited with fewer, shorter and slower growing roots.

a. Bulk Density Method - Varies by soil type see Chart on page 32 in <u>Up By Roots</u>. b. Standard Proctor Method - above approximately 85%. c. Penetration Resistance Method - about 300 psi.

a. Bulk Density Method - Varies by soil type see Chart on page 32 in <u>Up By Roots</u>.

B. The following are threshold levels of compaction as determined by each method.

b. Standard Proctor Method - Above 90%. c. Penetration Resistance Method - Approximately above 400 psi 1.16 DELIVERY, STORAGE, AND HANDLING A. Weather: Do not mix, deliver, place or grade soils when frozen or with moisture above field capacity.

B. Protect soil and soil stockpiles, including the stockpiles at the soil blender's yard, from wind, rain and

Biological additives shall be protected from extreme cold and heat. All products shall be freshly

manufactured and dated for the year in which the products are to be used.

3. Excessive Compaction: Roots not likely to grow but can penetrate soil when soil is above field capacity.

washing that can erode soil or separate fines and coarse material, and contamination by chemicals, dust and debris that may be detrimental to plants or soil drainage. Cover stockpiles with plastic sheeting or fabric at the end of each workday. C. All manufactured packaged products and material shall be delivered to the site in unopened containers and stored in a dry enclosed space suitable for the material and meeting all environmental regulations.

which state the guaranteed chemical analysis. Store all chemicals in a weather protected enclosure. E. Bulk material: Coordinate delivery and storage with Owner's Representative and confine materials to neat piles in areas acceptable to Owner's Representative. 1.17 EXCAVATING AND GRADING AROUND UTILITIES

D. Deliver all chemical amendments in original, unopened containers with original labels intact and legible,

A. Contractor shall carefully examine the civil, record, and survey drawings to become familiar with the existing underground conditions before digging. B. Determine location of underground utilities and perform work in a manner that will avoid damage. Hand excavate as required. Maintain grade stakes set by others until parties concerned mutually agree upon

C. Notification of the JEA, 811 or 904.665.6000, is required for all planting areas. The Contractor is responsible for knowing the location and avoiding utilities that are not covered by the JEA.

PART 2 PRODUCTS

2.1 IMPORTED TOPSOIL

A. Imported Topsoil definition: Fertile, friable soil containing less than 5% total volume of the combination of subsoil, refuse, roots larger than 1 inch diameter, heavy, sticky or stiff clay, stones larger than 2 inches in diameter, noxious seeds, sticks, brush, litter, or any substances deleterious to plant growth. The percent (%) of the above objects shall be controlled by source selection not by screening the soil. Topsoil shall be suitable for the germination of seeds and the support of vegetative growth. Imported Topsoil shall not contain weed seeds in quantities that cause noticeable weed infestations in the final planting beds. Imported Topsoil shall meet the following physical and chemical criteria:

3. Percent organic matter (OM): 2.0-5.0%, by dry weight. 4. Soluble salt level: Less than 2 mmho/cm. 5. Soil chemistry suitable for growing the plants specified. B. Imported Topsoil shall be a harvested soil from fields or development sites. The organic content and particle PROJ. #: size distribution shall be the result of natural soil formation. Manufactured soils where Coarse Sand,

Composted organic material or chemical additives has been added to the soil to meet the requirements

1. Soil texture: USDA loam, sandy clay loam or sandy loam with clay content between 15 and 25%. And a

of this specification section shall not be acceptable. Retained soil peds shall be the same color on the inside as is visible on the outside. C. Imported Topsoil for Planting Soil shall NOT have been screened and shall retain soil peds or clods larger than 2 inches in diameter throughout the stockpile after harvesting.

D. Stockpiled Existing Topsoil at the site meeting the above criteria may be acceptable. E. Provide a two gallon sample from each Imported Topsoil source with required soil testing results. The sample shall be a mixture of the random samples taken around the source stockpile or field. The soil sample shall be delivered with soil peds intact that represent the size and quantity of expected peds in the final delivered COMPOST A. Compost: Blended and ground leaf, wood and other plant based material, composted for a minimum of 9

months and at temperatures sufficient to break down all woody fibers, seeds and leaf structures, free of

toxic material at levels that are harmful to plants or humans. Source material shall be yard waste trimmings

blended with other plant or manure based material designed to produce Compost high in fungal material. 1. Compost shall be commercially prepared Compost and meet US Compost Council STA/TMECC criteria or as modified in this section for "Compost as a Landscape Backfill Mix Component". http://compostingcouncil.org/admin/wp-content/plugins/wp-pdfupload/pdf/191/LandscapeArch_Specs.pd 2. Compost shall comply with the following parameters:

b. Soil salt (electrical conductivity): maximum 5 dS/m (mmhos/cm). c. Moisture content %, wet weight basis: 30 - 60.

a. pH: 5.5 - 8.0.

combined clay/silt content of no more than 55%.

2. pH value shall be between 5.5 and 7.0.

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LANDSCAPE SPECIFICATIONS

12 PRE-CONSTRUCTION CONFERENCE

ISSUE DATES

CHECKED BY MCK SCALE: AS NOTED

12.22.2023

PART 2 PRODUCTS 2.1 TURFGRASS SOD

upon removal.

1.18 PLANTING AROUND UTILITIES

complying with "Specifications for Turfgrass Sod Materials" in TPI's "Guideline Specifications to Turfgrass Sodding." Furnish viable sod of uniform density, color, and texture that is strongly rooted and capable of vigorous growth and development when planted. B. Turf Grass Species: 1. Quality: Seed of grass species as listed below for solar exposure, with not less that 85 percent

C. Notification of JEA, 811 or 904-665-6000, is required for all planting areas: The Contractor is responsible for

A. Number 1 Quality / Premium, including limitation on thatch, weeds, diseases, nematodes, and insects,

germination, not less than 95 percent pure seed, and not more than 0.5 % weed seed. Zeon Zoysia (Zoysia matrella 'Zeon')

knowing the location and avoiding utilities that are not covered by the JEA.

C. Sod shall be nursery grown on cultivated mineral agricultural soils. Sod shall have been mowed regularly and carefully, and otherwise maintained from planting to harvest. D. Thickness of Cut: Sod shall be machine cut at a uniform soil thickness per the supplier's standard.

E. Section Size: Individual pieces of sod shall be cut to the supplier's standard width and length. Broken strips and torn and uneven ends will not be acceptable. F. Strength of Sod Strips: A standard section of sod, 6 feet in length, shall be strong enough to support its own weight and retain its size and shape during installation.

G. Moisture Content: Sod shall not be harvested or transplanted when moister content (excessively dry or wet) may adversely affects its survival. H. Time Limitations: Sod shall be harvested, delivered, and transplanted within 24 to 30 hours from time of harvest unless a suitable preservation method is approved prior to delivery or as weather conditions

I. Diseases, Nematodes, and Insects: Sod shall not exhibit symptoms of diseases, nematodes, or soil-borne

A. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast and slow release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde,

phosphorous, and potassium in the following composition: 1. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory. B. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen,

phosphorus, and potassium in the following composition: 2. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.

A. Planting Soil as used in this specification means the soil at the planting site, or imported as modified and defined in specification Section 32 91 00 - Planting Soil. If there is no Planting Soil specification, the term Planting Soil shall mean the soil at the planting site within the planting hole.

Mulch shall be uniform in size, shape, texture and free from weeds, moss, sticks, and other debris and deleterious materials. Mulch for plants is specified in section 32 93 00 - Planting. Mulch for Seeding shall be organic and may consist of the following:

A. Straw or Hay Mulch: Provide air-dry, clean, mildew and seed free, salt hay or threshed straw of wheat, rye,

B. Compost Mulch: Well-composted, stable, and weed-free organic matter 50 to 60 percent of weight: pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through 1 inch sieve: soluble salt content of 2 to 5 decisiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings or animals. C. Asphalt Emulsion: ASTM D 977, Grade SS-1; non toxic and free of plant growth or germination inhibitors.

2.5 PESTICIDES A. General: Pesticide, registered and approved by the EPA, acceptable to authorities having jurisdiction, and of type recommended by the manufacturer for each specific problem and as required for project conditions and application. Do not use restricted pesticides unless authorized in writing by authorized in writing by authorities having jurisdiction.

B. Pre-Emergent Herbicide (Selective and Nonselective): Effective for controlling the germination or growth or

weeds within planted areas at the soil level directly below the mulch layer. C. Post-Emergent Herbicide (Selective and Nonselective): Effective for controlling weed growth that has

2.6 EROSION CONTROL MATERIALS A. Erosion Control Blankets: Biodegradable wood excelsior, straw, or coconut-fiber mat enclosed in a

photodegradable plastic mesh. Include manufacturer's recommended steel wire staples, 6 inches long. B. Erosion Control Fiber Mesh: Biodegradable burlap or spun course mesh, a minimum of 0.92 lb/sy, with 50 to

65 percent open area. Include manufacturer's recommended steel wire staples, 6 inches long.

3.1 SITE EXAMINATION

A. Examine the surface grades and soil conditions to confirm that the requirements of the Specification Section 32 91 00 - Planting Soil have been completed. Notify the Owner's Representative in writing of any unsatisfactory conditions.

A. Seed and Other Packaged Materials

and address of manufacturer, and indication of conformance with state and federal laws, as

2. Deliver fertilizer in sealed waterproof bags, printed with manufacturer's name, weight, and guaranteed

1. Harvest, deliver, store, and handle sod according to requirements in "Specifications for Turfgrass Sod

Materials" and "Specifications for Turfgrass Sod Transplanting and Installation" in TPI's Guideline Specifications to Turfgrass Sodding." Deliver sod in time for planting within 24 hours of harvesting. Protect sod from breakage and drying.

1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf 2. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of

soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems,

3. Accompany each delivery of bulk fertilizers, lime, and soil amendments with appropriate certificates.

A. Planting season for sod shall be all season, except on frozen soil

B. Planting shall only be performed when weather and soil conditions are suitable for planting the material specified in accordance with locally accepted practice.

3.4 ADVERSE WEATHER CONDITIONS A. No planting shall take place during extremely hot, dry, windy or freezing weather.

3.5 COORDINATION WITH PROJECT WORK

A. The Contractor shall be fully responsible to ensure that adequate water is provided to all sod and seeding from the point of installation until the date of Substantial Completion Acceptance. The Contractor shall adjust the automatic irrigation system, if available, and apply additional or adjust for less water using hoses

3.7 EXAMINATION

A. Examine areas to be planted for compliance with requirements and other conditions affecting installation and performance of the Work.

1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry,

concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar roofing compound, or acid has been deposited in soil within a planting area.

2. Suspend planting operation during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.

3. Uniformly moisten excessively dry soil that is not workable or which is dusty. B. Proceed with installation only after unsatisfactory conditions have been corrected.

C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Architect and replace with new planting soil.

3.8 PREPARATION A. Protect structures; utilities; sidewalks; pavements; and other facilities, trees, shrubs, and plantings from damage caused by planting operations.

A. Submit all requests for substitutions of sod or seed species, or size to the Owner's Representative, for approval, prior to purchasing the proposed substitution. Request for substitution shall be accompanied with a list of nurseries contacted in the search for the required sod or seed and a record of other attempts to

or tested, the edition or revision of the standards and codes current on the effective date of this contract locate the required material. 1.17 SITE CONDITIONS

C. In case of conflict among any referenced standards or codes or between any referenced standards and codes and the specifications, the more restrictive standard shall apply or Owner's Representative shall

determine which shall govern. 1.6 PROTECTION OF WORK, PROPERTY AND PERSON

A. The Contractor shall adequately protect the work, adjacent property, and the public, and shall be responsible for any damages or injury due to his/her actions.

shall apply, unless otherwise expressly set forth.

1.7 CHANGES IN THE WORK A. The Owner's Representative may order changes in the work, and the contract sum should be adjusted

accordingly. All such orders and adjustments plus claims by the Contractor for extra compensation must be made and approved in writing before executing the work involved. B. All changes in the work, notifications and contractor's request for information (RFI) shall conform to the contract general condition requirements.

1.8 CORRECTION OF WORK

A. The Contractor, at their own cost, shall re-execute any work that fails to conform to the requirements of the contract and shall remedy defects due to faulty materials or workmanship upon written notice from the

A. Any soil that becomes compacted to a density greater than the specified density and/or the density in the Owner's Representative, at the soonest as possible time that can be coordinated with other work and approved mockup shall be dug up and reinstalled. This requirement includes compaction caused by other seasonal weather demands.

1.9 DEFINITIONS All terms in this specification shall be as defined in the "Glossary of Arboricultural Terms" or as modified below. A. Compacted soil: soil where the density of the soil is greater that the threshold for root limiting, and further defined in Section 32 91 00.

apply chemical additives as recommended by the soil test, and appropriate to the soil and specific plants B. Finish Grade: surface or elevation of Planting Soil after final grading and 12 months of settlement of the soil, and further defined in Section 32 91 00.

B. Types, application rates and methods of application shall be approved by the Owner's Representative prior C. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. Pesticides include insecticides, herbicides, fungicides, rodenticides, and molluscicides. They also include substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.

D. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. These include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.

E. Planting Soil: Topsoil, or Planting Soil Mixes which are imported or existing at the site, or made from components that exist at the site, or are imported to the site; and further defined in Section 32 91 00

and work in this section meet all the requirements of the warranty. It is intended that the materials and workmanship warranty for Planting, Planting Soil, and Irrigation work run concurrent with each other. G. Maintenance: Actions that preserve the health of seed and sod after installation and as defined in this

F. End of Warranty Final Acceptance: The date when the Owner's Representative accepts that the plants

H. Maintenance period: The time period, as defined in this specification, which the Contractor is to provide Owner's Representative: The person appointed by the Owner to represent their interest in the review and approval of the work and to serve as the contracting authority with the Contractor. The Owner's Representative may appoint other persons to review and approve any aspects of the work.

J. Subgrade: Surface or elevation of subsoil remaining after completing excavation, or top surface of a fill or backfill, before placing Planting Soil. K. Substantial Completion Acceptance: The date at the end of the Planting, Planting Soil, and Irrigation installation where the Owner's Representative accepts that all work in these sections is complete and the

Turfgrass: A contiguous community of grass established from either lawn type seeds, lawn type sod or meadow seed plants that has the ability to withstand mowing.

A. See contract general conditions for policy and procedure related to submittals.

B. Submit all product submittals 8 weeks prior to installation of plantings. C. Product data: Submit manufacturer product data and literature describing all products required by this section to the Owner's Representative for approval. Provide submittal eight weeks before the installation of

D. Certificate of Grass Seed: Submit seed vendor certificate for each grass-seed monostand or mixture, stating 2.2 the botanical and common name, percentage by weight of each species and variety, and percentage of purity, germination, and weed seed, to the Owner's Representative for approval. Include the identification of source, the name, the telephone number of supplier, and the year of production and date of

1. Maintenance Data: Recommended procedures to be established by Owner for maintenance of turf

during a calendar year. Submit before expiration of required maintenance periods. A. The Owner's Representative may observe the work at any time. They may remove samples of materials for 2.3 PLANTING SOIL

. The Owner's Representative shall be informed of the progress of the work so the work may be observed at the following key times in the construction process. The Owner's Representative shall be afforded sufficient time to schedule visit to the site. Failure of the Owner's Representative to make field observations shall not

relieve the Contractor from meeting all the requirements of this specification. 1. SITE CONDITIONS PRIOR TO THE START OF PLANTING: review the soil and drainage conditions.

2. COMPLETION OF THE PLANT LAYOUT STAKING: Review of the plant layout.

3. PLANT QUALITY: Review of plant quality at the time of delivery and prior to installation. Review tree quality prior to unloading where possible, but in all cases prior to planting. 4. COMPLETION OF THE PLANTING: Review the completed planting.

2 PRE-CONSTRUCTION CONFERENCE

1.13 QUALITY ASSURANCE A. Substantial Completion Acceptance - Acceptance of the work prior to the start of the warranty period: 1. Once the Contractor completes the installation of all items in this section, the Owner's Representative will

to specified size, character and quality and not relieve the Contractor of responsibility for full

conformance to the contract documents, including correct species. 3. Any plants that are deemed defective as defined under the provisions below shall not be accepted. . The Owner's Representative will provide the Contractor with written acknowledgment of the date of

Substantial Completion Acceptance and the beginning of the warranty period and plant maintenance period (if plant maintenance is included). C. Contractor's Quality Assurance Responsibilities: The Contractor is solely responsible for quality control of the

scope similar to that required for the work.

1. The bidders list for work under this section shall be approved by the Owner's Representative.

3. Pesticide Applicator: State licensed, commercial. 1.14 PLANT WARRANTY

Plants warranty shall begin on the date of Substantial Completion Acceptance and continue for the following periods, classed by plant type: a. Sod - 1 Year(s). When the work is accepted in parts, the warranty periods shall extend from each of the partial

periods for each class of plant warranty, shall terminate at one time.

5. Any work required by this specification or the Owner's Representative during the progress of the work, to

correct sod or seed defects shall not be considered as grounds to void any conditions of the warranty. In the event that the Contractor decides that such remediation work may compromise the future health of the sod or seed, the sod or seed in question shall be rejected and replaced with sod or seed that do not contain defects that require remediation or correction.

6. The Contractor is exempt from replacing sod or seed, after Substantial Completion Acceptance and during the warranty period, that is removed by others, lost or damaged due to occupancy of project, lost or damaged by a third party, vandalism, or any natural disaster.

replacements. Such repairs shall be done at no extra cost to the Owner.

ent items or credit for each item. These tertiary replacement items are not protected under a warranty period. E. End of Warranty Final Acceptance - Acceptance of sod or seed at the end of the warranty period.

A. The Owner's Representative may review all sod or seed subject to approval of size, health, quality, character, etc. Review or approval of any sod or seed during the process of selection, delivery, installation and establishment period shall not prevent that sod or seed from later rejection in the event that the sod or seed quality changes or previously existing defects become apparent that were not observed.

B. The Contractor shall bear all cost related to plant corrections.

contain a height reference, such as a measuring stick. The approval of plants by the Owner's

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ISSUE DATES

PROPERTY OF ELM, NC. AND SHALL REMAIN THEIR ROPERTY. THE USE OF THIS DRAWING SHALL BE RESTRICTED TO THE ORIGINAL SITE FOR WHICH IT IS PREPARED, AND PUBLICATION THEREOF IS EXPRESSLY 12.22.2023 MCK

THIS DRAWING IS AN INSTRUMENT OF SERVICE AND THE

DATE: DRAWN BY: CHECKED BY MCK SCALE: AS NOTED **LANDSCAPE**

> **SPECIFICATIONS SHEET NUMBER**

1. Description of condition to be modified: Surface soil compaction to a maximum of 24 inches deep from traffic or light grading. Original A horizon may be previously removed or graded but lower profile below 24 inches intact with acceptable compaction levels and limited grading. The soil organic matter, pH and chemistry in the A horizon may not be suitable for the proposed plants and may need to be modified as required. 2. Modifications: a. Using a trenching machine, dig trenches to the extent and depth shown on the plans and details. b. Backfill the trench with the soil removed from the trench. Add additional site soil if needed to fill the trench to be flush to the existing grade after the soil settlement. E. Modified existing soil - compacted subsoil 1. Description of condition to be modified: Deep soil compaction the result of previous grading, filling and dynamic or static compaction forces. Original A horizon likely removed or buried. The soil organic

2. Modifications

matter, pH and chemistry in the A horizon is likely not suitable for the proposed plants and should be modified as required. 2. Soil Fracturing: a. Step one: After grading and removing all plants and debris from the surface, spread 2 - 3 inches of Compost over the surface of the soil. Loosen the soil to depth of 18 - 24 inches, using a backhoe to dig into the soil through the Compost. Lift and then drop the loosened soil immediately back into the

d. Particle size, dry weight basis: 98% pass through 3/4 inch screen or smear.

h. Chemical contaminants, mg/kg (ppm): meet or exceed US EPA Class A standard, 40CFR § 503.13,

B. Provide a two gallon sample with manufacturer's literature and material certification that the product

2. Coarse Sands shall be clean, sharp, natural Coarse Sands free of limestone, shale and slate particles.

B. Provide a two gallon sample with manufacturer's literature and material certification that the product

A. ASTM C 602, agricultural limestone containing a minimum 80 percent calcium carbonate equivalent and as

1. Class: Class T, with a minimum 99 percent passing through No. 8 (2.36-mm) sieve and a minimum 75

A. General definition of existing soil: Surface soil in the areas designated on the soils plan as existing soil, that is

process and considered acceptable for planting and long term health of the plants specified either as it

1. The Owner's Representative shall verify that the soil in the designated areas is suitable at the beginning

of planting bed preparation work in that area. In the event that the work of this project construction has

longer suitable to support the plants specified, the Owner's Representative may require modification of

the damaged soil up to and including removal and replacement with soil of equal quality to the soil that

existed prior to construction. Examples of damage include further compaction, contamination, grading,

a. Do not begin work on additional modifications until changes to the contract price are approved by

B. Protect existing soil from compaction, contamination, and degradation during the construction process.

C. Unless otherwise instructed, remove all existing plants, root thatch, and non-soil debris from the surface of

1. When results of soil tests recommend chemical adjustments, till surface soil to six inches or greater after

A. General definition: Surface soil in the areas that have been altered and or graded before or during the

construction process but still considered acceptable for planting and long term health of the plants

encountered. The Owner's Representative shall verify that the soil in the designated areas is suitable for

1. The Owner's Representative shall verify that the soil in the designated areas is suitable for the specified

removal and replacement with soil of equal quality to the soil that would have resulted from the

b. Unless otherwise instructed, remove all existing plants, root thatch, and non-soil debris from the

a. Take soil samples, test for chemical properties, and make appropriate adjustments.

long enough so that the soil does not make the hand muddy when squeezed.

adding mulch to the surface, if indicated by weed type and degree of threat.

harvested, stockpiled and re-spread with or without further modifications as indicated.

noted on the drawings or in areas proposed by the Contractor.

surface of the soil using equipment that does not add to the compaction in the soil.

modification at the beginning of planting bed preparation work in that area. In the event that the work

point where the soil is no longer suitable to support the plants specified with the specified modification,

the Owner's Representative may require further modification of the damaged soil up to and including

modification. Damage may include further compaction, contamination, grading, creation of hard pan

c. All soil grading, tilling and loosening must be completed at times when the soil moisture is below field

d. Provide pre-emergent weed control after the soil work is complete and plants planted but prior to

1. Description of condition to be modified: Existing soil that is suitable for reuse as Planting Soil but is in the

a. Excavate existing soil from the areas and to depths designated on the drawings. Stockpile in zones

b. Excavate soil using equipment and methods to preserve the clumps and peds in the soil. Generally

this means using the largest piece of equipment that is practical for the project size and scope.

fabric or planting with annual grasses as appropriate for the season, location, and length of

1. Description of condition to be modified: Surface soil compaction to a maximum of 6 inches deep from

traffic or light grading. Original A horizon may be previously removed or graded but lower profile intact

with acceptable compaction levels and limited grading. The soil organic matter, pH and chemistry in

the A horizon may not be suitable for the proposed plants and may need to be modified as required.

a. Till top 6 inches or deeper of the soil surface, with a roto tiller, spade tiller, ripper or agricultural plow.

b. Till or disk the Compost into the loosened soil. Smooth out grades with a drag rake or drag slip.

Spread 2 - 3 inches of Compost on the surface of the tilled soil and make any chemical adjustment as

c. Protect stock piles from erosion by compacting or tracking the soil surface, covering with breathable

wrong place of elevation, or cannot be adequately protected during construction. Soil is to be

capacity. Allow soil to drain for at least two days after any rain event more than 1 inch in 24 hours, or

specified with the proposed modifications. Modifications respond to the soil problems expected or

damaged the existing soil in areas designated for use as Planting Soil to the point where the soil is no

B. Provide manufacturer's literature and material certification that the product meets the requirements.

creation of hard pan or drainage problems, and loss of the O, and or A horizon.

the soil using equipment that does not increase compaction of soil to root limiting levels.

6 MODIFIED EXISTING SOIL (SOIL SUITABLE FOR PLANTING WITH INDICATED MODIFICATION)

modification at the beginning of planting bed preparation work in that area.

1. Coarse concrete sand, ASTM C-33 Fine Aggregate, with a Fines Modulus Index of 2.8 and 3.2.

i. Biological contaminants select pathogens fecal coliform bacteria, or salmonella, meet or exceed US

e. Stability carbon dioxide evolution rate: mg CO2-C/ g OM/ day < 2.

EPA Class A standard, 40 CFR § 503.32(a) level requirements.

g. Physical contaminants (inerts), %, dry weight basis: <1%.

f. Solvita maturity test: > 6.

Tables 1 and 3 levels.

A. Clean, washed, sand, free of toxic materials

Manufactured Coarse Sand shall not be permitted.

4. Provide Coarse Sand with the following particle size distribution:

95 - 100

80 - 100

50 - 85

25 - 60

10 - 30

2 - 10

5 EXISTING SOIL (ACCEPTABLE FOR PLANTING WITH MINIMUM MODIFICATIONS)

percent passing through No. 60 (0.25-mm) sieve.

2. Provide lime in form of dolomitic limestone.

exists or with only minor modification.

Owner's Representative.

chemical adjustments have been are applied.

3. Provide pre-emergent weed control if indicated.

2. Remove existing turf thatch, ground cover plants and weeds.

4. Make chemical adjustment as recommended by the soil test.

or drainage problem, and loss of the O, and or A horizon.

B. Modified existing soil - soil removed, stockpiled, and spread

1.) Prepare a soil stock pile plan for approval.

d. Re-spread soil as required in Part 3 of this specification.

D. Modified existing soil - compacted surface soil (Radial Trenching Option)

C. Modified existing soil - compacted surface soil (Tilling Option)

expected time of storage.

recommended by the soil test

2. General requirements for all soil modifications:

Percent passing

meets the requirements.

3. pH shall be lower than 7.0.

3/8 inch (9.5 mm)

No 4 (4.75 mm)

No 8 (2.36 mm)

No 16 (1.18 mm)

No 30 (.60 mm)

No 50 (.30 mm)

No 100 (.15 mm)

No 200 (0.75 mm

meets the requirements.

2.3 COARSE SAND

hole. The bucket then moves to the adjacent soil and repeats the process until the entire area indicated has been loosened. b. Step 2: Spread 3-4 inches of Compost over the ripped area and till into the top 6 inches of the soil 3. Following soil fracturing the average penetration resistance should be less than 250 psi to the depth of

4. Do not start planting into fractured soil until soil has been settled or leave grades sufficiently high to anticipate settlement of 10 - 15% of fractured soil depth. F. Modified existing soil - low organic matter 1. Description of condition to be modified: Low soil organic matter and/or missing A horizon but soil is not

compacted except for some minor surface compaction. The soil organic matter, pH and/or chemistry are likely not suitable for the proposed plants and should be modified as required.

a. Spread 3 - 4 inches of Compost over the surface of the soil and make chemical adjustment as recommended by the soil test b. Till Compost into the top 6 inches of the soil.

1. Description of condition to be modified: Surface compaction near or above root limited levels in the upper soil horizon the result of traffic or other mechanical compaction. 2. Modifications: a. Remove the tops of all plants to be removed from the root zone. Remove sod with a walk behind sod

G. Modified existing soil - soil within the root zone of existing established trees

cutter. Do not grub out the roots of plats to be removed. b. Use a pneumatic air knife to loosen the top 9 - 12 inches of the soil. Surface roots may move and separate from soil during this process but the bark on roots should not be broken 1.) Pneumatic air knife shall be as manufactured by:

Concept Engineering Group, Inc., Verona, PA (412) 826-8800 or Supersonic Air Knife, Inc., Allison Park, PA (866) 328 5723 c. Make chemical adjustment as recommended by the soil test and add 2 - 3 inches of Compost over

d. Using the pneumatic air knife, mix the Compost into the top 6 - 8 inches of the loosened soil. e. Work in sections such that the entire process - including irrigation - can be completed in one day. Apply approximately one inch of water over the loosened soil at the completion of each day's work. Apply mulch or turf as indicated on the drawings within one week of the completion of work.

PLANTING SOIL MIXES A. General definition: Mixes of Existing Soil or Imported Topsoil, Coarse Sand, and or Compost to make a new soil that meets the project goals for the indicated planting area. These may be mixed off site or onsite, and will vary in Mix components and proportions as indicated. B. Planting Mix - moderately slow draining soil for trees and shrub beds

1. A Mix of Imported Topsoil, Coarse Sand and Compost. The approximate Mix ratio shall be:

% by moist volume

permitted in the overall Mix

Coarse sand

Compost 10% 2. Final tested organic matter between 2.75 and 4% (by dry weight). 3. Mix the Coarse Sand and Compost together first and then add to the Topsoil. Mix with a loader bucket to loosely incorporate the Topsoil into the Coarse Sand/Compost Mix. DO NOT OVER MIX! Do not mix with a soil blending machine. Do not screen the soil. Clumps of Soil, Compost and Coarse Sand will be

40 - 45%

4. At the time of final grading, add fertilizer if required to the Planting Soil at rates recommended by the testing results for the plants to be grown. 5. Provide a two gallon sample with testing data that includes recommendations for chemical additives for the types of plants to be grown. Samples and testing data shall be submitted at the same time.

2.8 PRE-EMERGENT HERBICIDES A. Chemical herbicides are designed to prevent seeds of selective plants from germinating. Exact type of

herbicide shall be based on the specific plants to be controlled and the most effective date of application B. Submit report of expected weed problems and the recommendation of the most effective control for approval by Owner's Representative. Provide manufacturer's literature and material certification that the product meets the requirements.

2.9 HEAVY DUTY PIPE DRAIN PIPE A. Drain pipe shall be 4 inch diameter, perforated, PVC, Schedule 40 pipe. Holes in the pipe shall only be on the bottom quadrant. All fittings, elbows, unions, T's and screw caps shall be the same material and from the same manufacturer as the pipe. "T" and elbow joints shall be sanitary type connections. All joints shall be solvent welded. Submit manufacturers product literature for approval by the Owner's Representative. 1. When pipe has perforations on all quadrants, drape a 12 inch wide 4 mil plastic sheet over the length of

the pipe to force water to the bottom of the pipe. B. Clean out: Clean out risers shall be 4 inch diameter Schedule 40 PVC solid pipe compatible with the bottom fitting and clean out screw cap. Elbow fitting at the bottom of the clean out riser. When the cleanout is in the middle of a pipe run the fitting shall be a sanitary T fitting. Screw cap FITTING shall be PVC Schedule 40. 2.10 MEDIUM DUTY PIPE DRAIN PIPE

A. Drain pipe shall be 4 inch diameter, perforated, PVC, double wall (smooth interior wall / corrugated exterior wall) pipe. Holes in the pipe shall only be on the bottom quadrant. All fittings, elbows, unions, T's and screw caps shall be the same material and from the same manufacturer as the pipe. "T" and elbow joints shall be sanitary type connections. All joints shall be gasketed bell and spigot. Example source A -2000 by Contech

Construction Products or approved equal. Submit manufacturers product literature for approval by the Owner's Representative 1. When pipe has perforations on all quadrants, drape a 12 inch wide 4 mil plastic sheet over the length of the pipe to force water to the bottom of the pipe.

B. Clean out: Clean out risers shall be 4 inch diameter Schedule 40 PVC solid pipe compatible with the bottom fitting and clean out screw cap. Elbow fitting at the bottom of the clean out riser. When the cleanout is in the middle of a pipe run the fitting shall be a sanitary T fitting. Screw cap FITTING shall be PVC Schedule 40. not altered, compacted to root limiting density, graded or contaminated before or during the construction 1 LIGHT DUTY PIPE DRAIN PIPE

A. Drain pipe shall be 4 inch diameter, perforated, HDPE, single wall corrugated exterior pipe. ASTM F405. All fittings, elbows, unions, T's and screw caps shall be the same material and from the same manufacturer as the pipe. All joints shall be gasketed bell and spigot. Example source ADS Single Wall Pipe by Advance

Drainage Systems or approved equal. Submit manufacturers product literature for approval by the Owner's 1. When pipe has perforations on all quadrants, drape a 12 inch wide 4 mil plastic sheet over the length of the pipe to force water to the bottom of the pipe. 3. Clean out: Clean out risers shall be 4 inch diameter Schedule 40 PVC solid pipe compatible with the bottom

fitting and clean out screw cap. Elbow fitting at the bottom of the clean out riser. When the cleanout is in the middle of a pipe run the fitting shall be a sanitary T fitting. Screw cap FITTING shall be PVC Schedule 40. PART 3 EXECUTION

A. Prior to installation of Planting Soil, examine site to confirm that existing conditions are satisfactory for the

work of this section to proceed 1. Confirm that the subgrade is at the proper elevation and compacted as required. Subgrade elevations shall slope toward the under drain lines as shown on the drawings. 2. Confirm that surface all areas to be filled with Planting Soil are free of construction debris, refuse, compressible or biodegradable materials, stones greater than 2 inches diameter, soil crusting films of silt or clay that reduces or stops drainage from the Planting Soil into the subsoil; and/or standing water. Remove unsuitable material from the site.

4. Confirm that no conditions are present which are detrimental to plant growth. 5. Confirm that utility work has been completed per the drawings. 6. Confirm that irrigation work, which is shown to be installed below prepared soil levels, has been B. If unsatisfactory conditions are encountered, notify the Owner's Representative immediately to determine

3. Confirm that no adverse drainage conditions are present.

corrective action before proceeding

6.2 COORDINATION WITH PROJECT WORK

A. The Contractor shall coordinate with all other work that may impact the completion of the work. B. Prior to the start of work, prepare a detailed schedule of the work for coordination with other trades. C. Coordinate the relocation of any irrigation lines, heads or the conduits of other utility lines that are in conflict with tree locations. Root balls shall not be altered to fit around lines. Notify the Owner's Representative of any conflicts encountered. 3.3 GRADE AND ELEVATION CONTROL

equipment, and other means and methods to assure that grades and contours conform to the grades

A. Provide grade and elevation control during installation of Planting Soil. Utilize grade stakes, surveying

indicated on the plans. A. Excavate to the proposed subgrade. Maintain all required angles of repose of the adjacent materials as shown on the drawings or as required by this specification. Do not over excavate compacted subgrades of adjacent pavement or structures. Maintain a supporting 1:1 side slope of compacted subgrade material along the edges of all paving and structures where the bottom of the paving or structure is above the

bottom elevation of the excavated planting area. B. Remove all construction debris and material including any construction materials from the subgrade. C. Confirm that the subgrade is at the proper elevation and compacted as required. Subgrade elevations shall slope approximately parallel to the finished grade and/or toward the subsurface drain lines as shown

E. Protect adjacent walls, walks and utilities from damage or staining by the soil. Use 1/2 inch plywood and or 3.17 Substantial Completion Acceptance

plastic sheeting as directed to cover existing concrete, metal and masonry work and other items as directed during the progress of the work. 1. At the end of each working day, clean up any soil or dirt spilled on any paved surface. 2. Any damage to the paving or site features or work shall be repaired at the Contractor's expense. 3.5 SOIL MOISTURE

A. Volumetric soil moisture level, in both the Planting Soil and the root balls of all plants, prior to, during and after planting shall be above permanent wilt point and below field capacity for each type of soil texture within the following ranges Soil texture Permanent wilting point Field capacity Sand, Loamy sand, Sandy loam 12 - 18% 27 - 36% Loam, Sandy clay, Sandy clay loam 14 - 25%

D. In areas where Planting Soil is to be spread, confirm subgrade has been scarified.

11 - 22% 31 - 36% Clay loam, Silt loam 22 - 27% 38 - 41% Silty clay, Silty clay loam B. The Contractor shall confirm the soil moisture levels with a moisture meter (Digital Soil Moisture Meter, SMM500 by General Specialty Tools and Instruments, or approved equivalent). If moisture is found to be too low, the planting holes shall be filled with water and allowed to drain before starting any planting

A. Follow the requirements for modifying existing soil as indicated in Part 2 for the different types of soil

operations. If the moisture is too high, suspend planting operations until the soil moisture drains to below field capacity 3.6 EXISTING SOIL MODIFICATION

7 DRAIN PIPE INSTALLATION A. Trench lines to depths and widths shown on plans. B. Place 2 - 3 inches Coarse Sand as bedding for pipes.

C. Place pipe (holes facing down) to invert elevations shown on the plan. 1. If pipe with holes on all sides is used drape a piece of 4 mil plastic 12 inches wide over top of pipe. 2. Cover sides and top of pipe with Coarse Sand with min 4 inches of Coarse Sand cover above top of

3. Backfill trench with Planting Soil compacted to same level as Planting Soil requirements. D. Add cleanout pipe reaching the surface at the uphill end of each pipe run as shown on drawings. E. Connect pipes to manhole or daylight outfall as shown on the drawings. 3.8 PLANTING SOIL AND PLANTING SOIL MIX INSTALLATION

A. Prior to installing any Planting Soil from stockpiles or Planting Soil Mixes blended off site, the Owner's Representative shall approve the condition of the subgrade and the previously installed subgrade preparation and the installation of subsurface drainage. B. All equipment utilized to install or grade Planting Soils shall be wide track or balloon tire machines rated with a ground pressure of 4 psi or less. All grading and soil delivery equipment shall have buckets equipped with 6 inch long teeth to scarify any soil that becomes compacted.

1. Scarify the subsoil of the subgrade to a depth of 3 - 6 inches with the teeth of the back hoe or loader bucket, tiller or other suitable device. 2. Immediately install the Planting Soil. Protect the loosened area from traffic. DO NOT allow the loosened subgrade to become compacted. 3. In the event that the loosened area becomes overly compacted, loosen the area again prior to

C. In areas of soil installation above existing subsoil, scarify the subgrade material prior to installing Planting Soil.

installing the Planting Soil. D. Install the Planting Soil in 12 - 18 inch lifts to the required depths. Apply compacting forces to each lift as required to attain the required compaction. Scarify the top of each lift prior to adding more Planting Soil by dragging the teeth of a loader bucket or backhoe across the soil surface to roughen the surface.

Planting Soil. Work in rows of lifts the width of the extension of the bucket on the loader. Install all lifts in one row before proceeding to the next. Work out from the furthest part of each bed from the soil delivery point to the edge of the each bed area. F. Where possible place large trees first and fill Planting Soil around the root ball. G. Installing soil with soil or mulch blowers or soil slingers shall not be permitted due to the over mixing and soil ped breakdown cause by this type of equipment.

H. Where travel over installed soil is unavoidable, limit paths of traffic to reduce the impact of compaction in Planting Soil. Each time equipment passes over the installed soil it shall reverse out of the area along the same path with the teeth of the bucket dropped to scarify the soil. Comply with the paragraph "Over Compaction Reduction" (Section 3.10) in the event that soil becomes over compacted. I. The depths and grades shown on the drawings are the final grades after settlement and shrinkage of the compost material. The Contractor shall install the Planting Soil at a higher level to anticipate this reduction of Planting Soil volume. A minimum settlement of approximately 10 - 15% of the soil depth is expected. All grade increases are assumed to be as measured prior to addition of surface Compost till layer, mulch, or

3.9 COMPACTION REQUIREMENTS FOR INSTALLED OR MODIFIED PLANTING SOIL A. Compact installed Planting Soil to the compaction rates indicated and using the methods approved for the soil mockup. Compact each soil lift as the soil is installed. B. Existing soil that is modified by tilling, ripping or fracturing shall have a density to the depth of the modification, after completion of the loosening, such that the penetrometer reads approximately 75 to 250 psi at soil moisture approximately the mid-point between wilting point and field capacity. This will be

approximately between 75 and 82% of maximum dry density standard proctor.

be deemed correct and prevail. 1.5 PERMITS AND REGULATIONS A. The Contractor shall obtain and pay for all permits related to this section of the work unless previously

B. Wherever references are made to standards or codes in accordance with which work is to be performed

to any applications. 3.12 FINE GRADING A. The Owner's Representative shall approve all rough grading prior to the installation of Compost, fine grading, planting, and mulching. . Grade the finish surface of all planted areas to meet the grades shown on the drawings, allowing the finished grades to remain higher (10 - 15% of depth of soil modification) than the grades on the grading

approximately the mid-point between wilt point and field capacity. This will be approximately between 75

and its moisture level. The same penetrometer and moisture meter used for the testing of the mockup shall

D. Planting Soil compaction shall be tested at each lift using a penetrometer calibrated to the mockup soil

satisfactory compaction. Suspend operations if the Planting Soil becomes wet. Apply water if the soil is

F. Provide adequate equipment to achieve consistent and uniform compaction of the Planting Soils. Use the

G. Do not pass motorized equipment over previously installed and compacted soil except as authorized

smallest equipment that can reasonably perform the task of spreading and compaction. Use the same

1. Light weight equipment such as trenching machines or motorized wheel barrows is permitted to pass

2. If work after the installation and compaction of soil compacts the soil to levels greater than the above

requirements, follow the requirements of the paragraph "Over Compaction Reduction" below.

B. Surface roto tilling shall not be considered adequate to reduce over compaction at levels 6 inches or

A. Following the installation of each soil and prior to fine grading and installation of the Compost till layer,

E. Maintain moisture conditions within the Planting Soil during installation or modification to allow for

equipment and methods of compaction used to construct the Planting Soil mockup.

sub-contractors after the Planting Soil is installed and approved.

and 82% of maximum dry density standard proctor.

be used to test installed soil throughout the work.

3.10 OVER COMPACTION REDUCTION

greater below finished grade.

11 INSTALLATION OF CHEMICAL ADDITIVES

achieve positive drainage.

C. Utilize hand equipment, small garden tractors with rakes, or small garden tractors with buckets with teeth for fine grading to keep surface rough without further compaction. Do not use the flat bottom of a loader bucket to fine grade, as it will cause the finished grade to become overly smooth and or slightly compressed.). Provide for positive drainage from all areas toward the existing inlets, drainage structures and or the edges of planting beds. Adjust grades as directed to reflect actual constructed field conditions of paving, wall and inlet elevations. Notify the Owner's Representative in the event that conditions make it impossible to

plan, as defined in paragraph Planting Soil Installation, to anticipate settlement over the first year.

. Provide smooth, rounded transitions between slopes of different gradients and direction. Modify the grade so that the finish grade before adding mulch and after settlement is one or two inches below all paving surfaces or as directed by the drawings. F. Fill all dips and remove any bumps in the overall plane of the slope. The tolerance for dips and bumps in shrub and ground cover planting areas shall be a 2 inch deviation from the plane in 10 feet. The tolerance for dips and bumps in lawn areas shall be a 1 inch deviation from the plane in 10 feet.

13 INSTALLATION OF COMPOST TILL LAYER A. After Planting Soil Mixes are installed in planting bed areas and just prior to the installation of shrub or groundcover plantings, spread 3 - 4 inches of Compost over the beds and roto till into the top 4 - 6 inches of the Planting Soil. This step will raise grades slightly above the grades required in paragraph "Fine Grading". This specification anticipates that the raise in grade due to this tilling will settle within a few months after installation as Compost breaks down. Additional settlement as defined in paragraph "Planting Soil and Planting Soil Mix installation" must still be accounted for in the setting of final grades.

1. Immediately clean up any spilled or tracked soil, fuel, oil, trash or debris deposited by the Contractor from all surfaces within the project or on public right of ways and neighboring property. B. Once installation is complete, wash all soil from pavements and other structures. Ensure that mulch is confined to planting beds and that all tags and flagging tape are removed from the site. The Owner's Representative seals are to remain on the trees and removed at the end of the warranty period. 1. Make all repairs to grades, ruts, and damage to the work or other work at the site. 2. Remove and dispose of all excess Planting Soil, subsoil, mulch, plants, packaging, and other material

Contractors or trespassers. Maintain protection during installation until acceptance. Utilize fencing and matting as required or directed to protect the finished soil work. Treat, repair or replace damaged Planting B. Loosen compacted Planting Soil and replace Planting Soil that has become contaminated as determined by the Owner's Representative. Planting Soil shall be loosened or replaced at no expense to the Owner. 1. Till and restore grades to all soil that has been driven over or compacted during the installation of plants.

3.16 PROTECTION DURING CONSTRUCTION A. The Contractor shall protect planting and related work and other site work from damage due to planting operations, operations by other Contractors or trespassers. 1. Maintain protection during installation until the date of plant acceptance (see specifications section -Planting). Treat, repair or replace damaged work immediately.

2. Provide temporary erosion control as needed to stop soil erosion until the site is stabilized with mulch, parts of the work or existing features to remain, including large existing trees, soil, paving, utilities, lighting, irrigation, other finished work and surfaces including those on adjacent property, shall be cleaned, repaired or replaced by the Contractor at no expense to the Owner. The Owner's Representative shall determine when such cleaning, replacement or repair is satisfactory. Damage to existing trees shall be assessed by a

A. Upon written notice from the Contractor, the Owners Representative shall review the work and make a determination if the work is substantially complete. B. The date of substantial completion of the planting soil shall be the date when the Owner's Representative accepts that all work in Planting, Planting Soil, and Irrigation installation sections is complete. 3.18 FINAL ACCEPTANCE / SOIL SETTLEMENT

Owner's Representative shall observe the soil installation work and establish that all provisions of the contract are complete and the work is satisfactory. 1. Restore any soil settlement and or erosion areas to the grades shown on the drawings. When restoring soil grades remove plants and mulch and add soil before restoring the planting. Do not add soil over the

Contractor at the prevailing hourly rate of the Owner's Representative.

certified arborist.

END OF SECTION 32 91 00 SECTION 32 92 00

TURF & GRASSES A. The scope of work includes all labor, materials, appliances, tools, equipment, facilities, transportation and

services necessary for, and incidental to performing all operations in connection with furnishing, delivery,

and installation of turf and grasses, complete as shown on the drawings and as specified herein. B. The scope of work in this section includes, but is not limited to, the following: Locate, purchase, deliver and seed and sod all specified turf and grasses.

3. Mulch, fertilize, stake, and mow all specified turf and grasses. 4. Maintenance of all specified turf and grasses until the beginning of the warranty period.

A. Shall consist of specifications and general conditions and the construction drawings. The intent of these documents is to include all labor, materials, and services necessary for the proper execution of the work.

A. Related Documents:

a. Section 01 56 39 - Tree and Plant Protection b. Section 32 91 00 - Planting Soil c. Section 32 92 00 - Planting

requirement shall prevail or as determined by the Owners Representative. 1. American Society for Testing and Materials (ASTM)

A. All scaled dimensions on the drawings are approximate. Before proceeding with any work, the Contractor shall carefully check and verify all dimensions and quantities, and shall immediately inform the Owner's Representative of any discrepancies between the information on the drawings and the actual conditions, refraining from doing any work in said areas until given approval to do so by the Owner's Representative. B. In the case of a discrepancy in the sod or seed quantities between the plan drawings and the plant call outs, list or plant schedule, the square footage of the seed or sod actually drawn on the plan drawings shall

description of any necessary changes and changes to the contract price resulting from changes in the

other sections of the project.

A. During installation, keep the site free of trash, pavements reasonably clean and work area in an orderly condition at the end of each day. Remove trash and debris in containers from the site no less than once a

brought to the site by the Contractor. 3.15 PLANTING SOIL AND MODIFIED EXISTING SOIL PROTECTION and over compaction due to other soil installation, planting operations, and operations by other

2. Where modified existing soil has become contaminated and needs to be replaced, provide imported soil that is of similar composition, depth and density as the soil that was removed.

B. Damage done by the Contractor, or any of their sub-contractors to existing or installed plants, or any other

A. At the end of the plant warrantee and maintenance period, (see Specification section - Planting) the

root balls of plants or on top of mulch. B. Failure to pass acceptance: If the work fails to pass final acceptance, any subsequent observations must be rescheduled as per above. The cost to the Owner for additional observations will be charged to the

PART 1 GENERAL 1.1 SUMMARY

Water turf and grasses.

5. Turf and Grass warranty. 6. Clean up and disposal of all excess and surplus material. 7. Maintenance of all specified plants during the warranty period. 1.2 CONTRACT DOCUMENTS

The documents are to be considered as one. Whatever is called for by any parts shall be as binding as if called for in all parts. 3 RELATED DOCUMENTS AND REFERENCES

1. Drawings and general provisions of contract including general and supplementary conditions and Division I specifications apply to work of this section 2. Related Specification Sections

B References: The following specifications and standards of the organizations and documents listed in this paragraph form a part of the specification to the extent required by the references thereto. In the event that the requirements of the following referenced standards and specification conflict with this specification section the requirements of this specification shall prevail. In the event that the requirements of any of the following referenced standards and specifications conflict with each other the more stringent

1.4 VERIFICATION

excluded under provision of the contract or general conditions. The Contractor shall comply with all laws and ordinances bearing on the operation or conduct of the work as drawn and specified. If the Contractor observes that a conflict exists between permit requirements and the work outlined in the contract documents, the Contractor shall promptly notify the Owner's Representative in writing including a

Warranty period has begun. This date may be different than the date of substantial completion for the

packaging. Provide submittal eight weeks before the installation of plants. E. Pesticides and Herbicides: Product label and manufacturer's application instructions specific to project. F. Close out submittals: Submit to the Owner's Representative for approval.

conformity to specifications. Rejected materials shall be immediately removed from the site and replaced at the Contractor's expense. The cost of testing materials not meeting specifications shall be paid by the

A. Schedule a pre-construction meeting with the Owner's Representative at least seven (7) days before beginning work to review any questions the Contractor may have regarding the work, administrative procedures during construction and project work schedule.

observe all work for Substantial Completion Acceptance upon written request of the Contractor. The request shall be received at least ten calendar days before the anticipated date of the observation. 2. Substantial Completion Acceptance by the Owner's Representative shall be for general conformance

2. Installer Field Supervision: When any planting work is in progress, installer shall maintain, on site, a full-time supervisor who can communicate in English with the Owner's Representative. . The Contractor agrees to replace defective work and defective plants. The Owner's Representative shall

Substantial Completion Acceptances to the terminal date of the last warranty period. Thus, all warranty 3. All sod or seed shall be warrantied to meet all the requirements for sod and seed quality at installation in this specification. Defective sod or seed shall be defined as sod or seed not meeting these requirements. The Owner's representative shall make the final determination that sod or seed is defective.

subject to all requirements stated in this specification. Make all necessary repairs due to sod or seed 8. The warranty of all replacement sod or seed shall extend for an additional one-year period from the date of their acceptance after replacement. In the event that replacement sod or seed is not acceptable during or at the end of the said extended warranty period, the Owner's Representative may

anticipated date for final observation. 2. End of Warranty Final Acceptance will be given only when all the requirements of the work under this specification and in specification sections Planting Soil, Planting and Irrigation have been met. 1.15 SELECTION AND OBSERVATION OF TURF & GRASSES

turf or grass provided at no cost to the Owner.

of plants. Photographs shall be legible and clearly depict the plant specimen. Each submitted image shall Representative via photograph does not preclude the Owner's Representative's right to reject material 1.16 PLANT SUBSTITUTIONS FOR PLANTS NOT AVAILABLE

D. Installer Qualifications: The installer shall be a firm having at least 5 years of successful experience of a

make the final determination if plants meet these specifications or that plants are defective.

4. Sod or seed determined to be defective shall be removed immediately upon notification by the Owner's Representative and replaced without cost to the Owner, as soon as weather conditions permit and

7. Replacements shall closely match adjacent specimens of the same species. Replacements shall be

1. At the end of the warranty period, the Owner's Representative shall observe all warranted work, upon written request of the Contractor. The request shall be received at least ten calendar days before the

C. All turf or grass that is rejected shall be immediately removed from the site and acceptable replacement D. Where requested by the Owner's Representative, submit photographs of plants or representative samples

3.2 DELIVERY, STORAGE AND HANDLING 1. Deliver packaged materials in original, unopened containers showing weight, certified analysis, name

3.3 PLANTING SEASON

A. The Contractor shall coordinate with all other work that may impact the completion of the work. B. Prior to the start of work, prepare a detailed schedule of the work for coordination with other trades.

1. Protect adjacent and adjoining areas.

C. Installed Planting Soil Mix and re-spread existing soil shall have a soil density through the required depth of Imported Topsoil unscreened 45 - 50% the installed layers of soil, such that the penetrometer reads approximately 75 to 250 psi at soil moisture

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LANDSCAPE **SPECIFICATIONS**

SHEET NUMBER

C. Below ground anchorage systems to be constructed of 2 x 2 dimensional untreated wood securing (using 3 inch long screws) horizontal portions to 4 feet long vertical stakes driven straight into the ground outside the

1. General: Provide healthy stock, grown in a nursery and reasonably free of die-back, disease, insects, eggs, bores, and larvae. At the time of planting all plants shall have a root system, stem, and branch form that will not restrict normal growth, stability and health for the expected life of the plant 2. Plant quality above the soil line:

a. Plants shall be healthy with the color, shape, size and distribution of trunk, stems, branches, buds and Florida #1) and the following:

leaves normal to the plant type specified. Tree quality above the soil line shall comply with the project Crown Acceptance details (or Florida Grades and Standards, tree grade Florida Fancy or

cultivar pruned to a central and dominant leader.

watering as indicated by wilted, shriveled, or dead leaves.

the age and size of the species or cultivar. Trees shall not have dead, diseased, broken, distorted, or otherwise injured branches. a.) Main branches shall be distributed along the central leader not clustered together. They shall

b.) Branch diameter shall be no larger than two-thirds (one-half is preferred) the diameter of the central leader measured 1 inch above the branch union. c.) The attachment of the largest branches (scaffold branches) shall be free of included bark. 4.) Trunk: The tree trunk shall be relatively straight, vertical, and free of wounds that penetrate to the wood (properly made pruning cuts, closed or not, are acceptable and are not considered

boring insects, galls, cankers, girdling ties, or lesions (mechanical injury). 5.) Temporary branches, unless otherwise specified, can be present along the lower trunk below the lowest main (scaffold) branch, particularly for trees less than 1 inch in caliper. These branches should be no greater than 3/8-inch diameter. Clear trunk should be no more than 40% of the total height of the tree.

1.) All trees are assumed to have one central leader trees unless a different form is specified in the plant list or drawings. c. All graft unions, where applicable, shall be completely closed without visible sign of graft rejection. All

d. Trunk caliper and taper shall be sufficient so that the lower five feet of the trunk remains vertical without a stake. Auxiliary stake may be used to maintain a straight leader in the upper half of the

a. Plant roots shall be normal to the plant type specified. Root observations shall take place without impacting tree health. Root quality at or below the soil line shall comply with the project Root Acceptance details and the following: 1.) The roots shall be reasonably free of scrapes, broken or split wood.

abiotic (e.g., herbicide toxicity and salt injury) agents. Wounds resulting from root pruning used to produce a high quality root system are not considered injuries. 3.) A minimum of three structural roots reasonably distributed around the trunk (not clustered on one side) shall be found in each plant. Root distribution shall be uniform throughout the root ball, and

a.) Plants with structural roots on only one side of the trunk (J roots) shall be rejected. 4.) The root collar shall be within the upper 2 inches of the substrate/soil. Two structural roots shall reach the side of the root ball near the top surface of the root ball. The grower may request a

from nursery production practices. girdling roots and kinked roots, or that the previous production system used practices that produce a root system throughout the root ball that meets these specifications. Regardless of the work of previous growers, the plant's root system shall be modified at the final production stage, if needed, to produce the required plant root quality. The final grower shall certify in

1. The grower's certification of plant quality does not prohibit the Owner's Representative from observing any plant or rejecting the plant if it is found to not meet the specification requirements.

B. Plant Selection: The Owner's Representative reserves the right to select and observe all plants at the nursery 2.2 ROOT BALL PACKAGE OPTIONS: The following root ball packages are permitted. Specific root ball packages not specifically defined in this specification shall not be permitted. A. BALLED AND BURLAPPED PLANTS

and/or burlap and wire basket package.

requirements. Remove all stem girdling roots above the root collar. Care must be exercised not to damage the surface of the root collar and the top of the structural roots. 4 to 52 weeks prior to shipping are defined as hardened-off. Digging is defined as cutting all roots and lifting the tree out of the ground and either moving it to a new location in the nursery or placing it back into the same hole. Tress that are stored out of the ground shall be placed in a holding area protected from extremes of wind and sun with the root ball protected by covering with mulch or

c. If wire baskets are used to support the root ball, a "low profile" basket shall be used. A low profile basket is defined as having the top of the highest loops on the basket no less than 4 inches and no greater than 8 inches below the shoulder of the root ball package. 1.) At nurseries where sandy soils prevent the use of "low profile baskets", baskets that support the

entire root ball, including the top, are allowable. d. Twine and burlap used for wrapping the root ball package shall be natural, biodegradable material. If the burlap decomposes after digging the tree then the root ball shall be re-wrapped prior to shipping if roots have not yet grown to keep root ball intact during shipping.

1. Spade Harvested and Transplanted Plants shall meet all the requirements for field grown trees. Root ball diameters shall be of similar size as the ANSI Z60.1 requirements for Balled and Burlapped plants. 2. Trees shall be harvested prior to leafing out (bud break) in the spring or during the fall planting period except for plants know to be considered as fall planting hazards. Plants that are fall planting hazards

shall only be harvested prior to leafing out in the spring. 3. Trees shall be moved and planted within 48 hours of the initial harvesting and shall remain in the spade machine until planted.

C. CONTAINER (INCLUDING ABOVE-GROUND FABRIC CONTAINERS AND BOXES) PLANTS 1. Container plants may be permitted only when indicated on the drawing, in this specification, or

2. Provide plants shall be established and well rooted in removable containers. 3. Container class size shall conform to ANSI Z60.1 for container plants for each size and type of plant.

ANNUAL FLOWERING AND SEASONAL COLOR PLANTS A. Container or flat-grown plants should be sized as noted in the planting plan. Plants shall be well-rooted and

A. Except as modified below or where the requirements are not appropriate to the specification of palms,

palms shall meet all the requirements of the plant quality section above. B. Defronding, tying, and hedging:

1. In preparing palm trees for relocation, all dead fronds shall be removed. 2. All remaining fronds above horizontal shall be lifted up and tied together around the crown in an upright position. Up to 2/3 of the oldest live fronds can be removed; all fronds can be removed on Sabal palms. Do not tie too tightly, bind or injure the bud. Jute binder twine shall be used in tying up the fronds; wire

. When digging out the root ball, no evacuation shall be done closer than 6 Inches to the trunk at ground level and the excavation shall extend below the major root system to a minimum depth of 3.5 feet. The bottom of the root ball shall be cut off square and perpendicular to the trunk below the major root

time. A protective device shall be used around the trunk of the tree while lifting and relocating so as not to injure the bud, or scar or skin the trunk in any way. 2.5 PLANTING SOIL

defined in specification Section Planting Soil. If there is no Planting Soil specification, the term Planting Soil shall mean the soil at the planting site within the planting hole. Mulch shall be uniform in size, shape, texture and free from weeds, moss, sticks, and other debris and

deleterious materials. Organic Mulches shall be "Mulch & Soil Council Certified." Mulch types shall consist of the following and be specified on the plant schedule: A. Pine Bark Chips (organic mulch)

1. Pine Bark Nuggets - size range shall be 2" minimum to 4" maximum.

2. Pine Bark Mini-Nuggets - size range shall be 1" minimum to 2" maximum.

3. Double Ground Pine Bark Nuggets - size range shall be 3/8" minimum to 1" maximum. 4. Pine Bark Fines - size range shall be 3/8" maximum.

B. Pine Straw (organic mulch) - shall be exceptionally clean and fresh. C. Ground Shells (non-organic mulch) D. River Rock (non-organic mulch)

approved by the Owner's Representative. F. Submit supplier's product specification data sheet and a one gallon sample for approval.

Green. Product to be ArborTie manufactured by Deep Root Partners, L.P. or approved equal. as required to adequately support the plant.

D. Submit manufacturer's product data for approval.

PART 3 EXECUTION

1.) Crown: The form and density of the crown shall be typical for a young specimen of the species or

a.) Crown specifications do not apply to plants that have been specifically trained in the nursery as topiary, espalier, multi-stem, clump, or unique selections such as contorted or weeping

2.) Leaves: The size, color, and appearance of leaves shall be typical for the time of year and stage of growth of the species or cultivar. Trees shall not show signs of prolonged moisture stress or over 3.) Branches: Shoot growth (length and diameter) throughout the crown should be appropriate for

form a balanced crown appropriate for the cultivar/species.

wounds), sunburned areas, conks (fungal fruiting bodies), wood cracks, sap leakage, signs of

b. Trees shall have one central leader. If the leader was headed, a new leader (with a live terminal bud)

at least one-half the diameter of the pruning cut shall be present

grafts shall be visible above the soil line.

3. Plant quality at or below the soil line:

2.) The root system shall be reasonably free of injury from biotic (e.g., insects and pathogens) and

growth shall be appropriate for the species.

modification to this requirement for species with roots that rapidly descend, provided that the grower removes all stem girdling roots above the structural roots across the top of the root ball. 5.) The root system shall be reasonably free of stem girdling roots over the root collar or kinked roots

a.) Plant Grower Certification: The final plant grower shall be responsible to have determined that the plants have been root pruned at each step in the plant production process to remove stem writing that all plants are reasonably free of stem girdling and kinked roots as defined in this specification, and that the tree has been grown and harvested to produce a plant that meets

6.) At time of observations and delivery, the root ball shall be moist throughout. Roots shall not show signs of excess soil moisture conditions as indicated by stunted, discolored, distorted, or dead

E. Submittals: Submit for approval the required plant quality certifications from the grower where plants are to be purchased, for each plant type. The certification must state that each plant meets all the above plant

shall be required where indicated on the plant list or in this specification. Any type of root ball packages that is

1. All Balled and Burlapped Plants shall be field grown, and the root ball packaged in a burlap and twine

2. Plants shall be harvested with the following modifications to standard nursery practices.

a. Prior to digging any tree that fails to meet the requirement for maximum soil and roots above the root collar, carefully removed the soil from the top of the root ball of each plant, using hand tools, water or an air spade, to locate the root collar and attain the soil depth over the structural roots

b. Trees shall be dug for a minimum of 4 weeks and a maximum of 52 weeks prior to shipping. Trees dug straw and irrigated sufficiently to keep moisture in the root ball above wilt point and below saturation

B. SPADE HARVESTED AND TRANSPLANTED

approved by the Owner's Representative.

will not be permitted. Fronds shall be untied immediately after planting. C. Digging the root ball:

D. The Contractor shall not free-fall, drag, roll or abuse the tree or put a strain on the crown (bud area) at any

A. Planting Soil as used in this specification means the soil at the planting site, or imported as modified and

3. If a range of size is given, no plant shall be less than the minimum size and not less than 50 percent of the

E. It is understood that mulch quality will vary significantly from supplier to supplier and region to region. The above requirements may be modified to conform to the source material from locally reliable suppliers as

A. Tree guying to be flat woven polypropylene material, 3/4 inch wide, and 900 lb. break strength. Color to be B. Stakes shall be lodge pole stakes free of knots and of diameters and lengths appropriate to the size of plant burlap away; do not fold down onto the Planting Soil.

2. If the plant is shipped with a wire basket that does not meet the requirements of a "Low Rise" basket, remove the top 6 - 8 inches of the basket wires just before the final backfilling of the tree. 3. Earth root balls shall be kept intact except for any modifications required by the Owner's Representative to make root package comply with the requirement in Part 2 Products.

3.2 DELIVERY, STORAGE AND HANDLING A. Protect materials from deterioration during delivery and storage. Adequately protect plants from drying out, exposure of roots to sun, wind or extremes of heat and cold temperatures. If planting is delayed more than 24 hours after delivery, set plants in a location protected from sun and wind. Provide adequate water

to the root ball package during the shipping and storage period. 1. All plant materials must be available for observation prior to planting. 2. Using a soil moisture meter, periodically check the soil moisture in the root balls of all plants to assure that the plants are being adequately watered. Volumetric soil moisture shall be maintained above wilting

point and below field capacity for the root ball substrate or soil. B. Do not deliver more plants to the site than there is space with adequate storage conditions. Provide a suitable remote staging area for plants and other supplies. 1. The Owner's Representative or Contractor shall approve the duration, method and location of storage

C. Provide protective covering over all plants during transporting. 3.3 PLANTING SEASON

Representative of any conflicts encountered.

over and compacting a large area of soil.

Loam, Sandy clay, Sandy clay loam

A. Planting shall only be performed when weather and soil conditions are suitable for planting the materials specified in accordance with locally accepted practice. 3.4 ADVERSE WEATHER CONDITIONS

A. No planting shall take place during extremely hot, dry, windy or freezing weather. 3.5 COORDINATION WITH PROJECT WORK

A. The Contractor shall coordinate with all other work that may impact the completion of the work. B. Prior to the start of work, prepare a detailed schedule of the work for coordination with other trades.

3.6 LAYOUT AND PLANTING SEQUENCE A. Relative positions of all plants and trees are subject to approval of the Owner's Representative.

B. Notify the Owner's Representative, one (1) week prior to layout. Layout all individual tree and shrub locations. Place plants above surface at planting location or place a labeled stake at planting location. Layout bed lines with paint for the Owner's Representative's approval. Secure the Owner's Representative's acceptance before digging and start of planting work. C. When applicable, plant trees before other plants are installed.

C. Coordinate the relocation of any irrigation lines, heads or the conduits of other utility lines that are in

conflict with tree locations. Root balls shall not be altered to fit around lines. Notify the Owner's

D. It is understood that plants are not precise objects and that minor adjustments in the layout will be required as the planting plan is constructed. These adjustments may not be apparent until some or all of the plants are installed. Make adjustments as required by the Owner's Representative including relocating previously 3.7 SOIL PROTECTION DURING PLANT DELIVERY AND INSTALLATION

A. Protect soil from compaction during the delivery of plants to the planting locations, digging of planting 1. Where possible deliver and plant trees that require the use of heavy mechanized equipment prior to final soil preparation and tilling. Where possible, restrict the driving lanes to one area instead of driving

2. Till to a depth of 6 inches, all soil that has been driven over during the installation of plants. SOIL MOISTURE A. Volumetric soil moisture level, in both the planting soil and the root balls of all plants, prior to, during and

after planting shall be above permanent wilting point and below field capacity for each type of soil texture within the following ranges. Permanent wilting point Field capacity Sand, Loamy sand, Sandy loam 5 - 8%

14 - 25% 27-36%

Silty clay, Silty clay loam 22 - 27% 1. Volumetric soil moisture shall be measured with a digital moisture meter. The meter shall be the Digital Soil Moisture Meter, DSMM500 by General Specialty Tools and Instruments, or approved equivalent.

suspend planting operations until the soil moisture drains to below field capacity. 3.9 INSTALLATION OF PLANTS: GENERAL A. Observe each plant after delivery and prior to installation for damage of other characteristics that may

B. The Contractor shall confirm the soil moisture levels with a moisture meter. If the moisture is too high,

cause rejection of the plant. Notify the Owner's Representative of any condition observed. B. No more plants shall be distributed about the planting bed area than can be planted and watered on the

C. The root system of each plant, regardless of root ball package type, shall be observed by the Contractor, at the time of planting to confirm that the roots meet the requirements for plant root quality in Part 2 Products: Plants General: Plant Quality. The Contractor shall undertake at the time of planting, all modifications to the root system required by the Owner's Representative to meet these quality standards. 1. Modifications, at the time of planting, to meet the specifications for the depth of the root collar and removal of stem girdling roots and circling roots may make the plant unstable or stress the plant to the point that the Owner's Representative may choose to reject the plant rather than permitting the

2. Any modifications required by the Owner's Representative to make the root system conform to the plant quality standards outlined in Part 2 Products: Plants General: Quality, or other requirements related to the permitted root ball package, shall not be considered as grounds to modify or void the plant warranty. 3. The resulting root ball may need additional staking and water after planting. The Owner's Representative may reject the plant if the root modification process makes the tree unstable or if the tree is not healthy at the end of the warranty period. Such plants shall still be covered under the warranty 4. The Contractor remains responsible to confirm that the grower has made all required root modifications

noted during any nursery observations. D. Container and Boxed Root Ball Shaving: The outer surfaces of ALL plants in containers and boxes, including the top, sides and bottom of the root ball shall be shaved to remove all circling, descending, and matted roots. Shaving shall be performed using saws, knives, sharp shovels or other suitable equipment that is capable of making clean cuts on the roots. Shaving shall remove a minimum of one inch of root mat or up to 2 inches as required to remove all root segments that are not growing reasonably radial to the trunk.

E. Exposed Stem Tissue after Modification: The required root ball modifications may result in stem tissue that has not formed trunk bark being exposed above the soil line. If such condition occurs, wrap the exposed portion of the stem in a protective wrapping with a white filter fabric. Secure the fabric with biodegradable masking tape. DO NOT USE string, twine, green nursery ties or any other material that may girdle the trunk if F. Excavation of the Planting Space: Using hand tools or tracked mini-excavator, excavate the planting hole

into the Planting Soil to the depth of the root ball measured after any root ball modification to correct root problems, and wide enough for working room around the root ball or to the size indicated on the drawing 1. For trees and shrubs planted in soil areas that are NOT tilled or otherwise modified to a depth of at least 12 inches over a distance of more than 10 feet radius from each tree, or 5 feet radius from each shrub,

the soil around the root ball shall be loosened as defined below or as indicated on the drawings. a. The area of loosening shall be a minimum of 3 times the diameter of the root ball at the surface sloping to 2 times the diameter of the root ball at the depth of the root ball. b. Loosening is defined as digging into the soil and turning the soil to reduce the compaction. The soil

does not have to be removed from the hole, just dug, lifted and turned. Lifting and turning may be accomplished with a tracked mini excavator, or hand shovels.

2. If an auger is used to dig the initial planting hole, the soil around the auger hole shall be loosened as defined above for trees and shrubs planted in soil areas that are NOT tilled or otherwise modified. 3. The measuring point for root ball depth shall be the average height of the outer edge of the root ball after any required root ball modification.

4. If motorized equipment is used to deliver plants to the planting area over exposed planting beds, or

used to loosen the soil or dig the planting holes, all soil that has been driven over shall be tilled to a G. For trees to be planted in prepared Planting Soil that is deeper than the root ball depth, compact the soil under the root ball using a mechanical tamper to assure a firm bedding for the root ball. If there is more than 12 inches of planting soil under the root ball excavate and tamp the planting soil in lifts not to exceed

H. Set top outer edge of the root ball at the average elevation of the proposed finish. Set the plant plumb and upright in the center of the planting hole. The tree graft, if applicable, shall be visible above the grade. Do not place soil on top of the root ball.

The Owner's Representative may request that plants orientation be rotated when planted based on the

I. Backfill the space around the root ball with the same planting soil or existing soil that was excavated for the planting space. See Specification Section Planting Soil, for requirements to modify the soil within the K. Brace root ball by tamping Planting Soil around the lower portion of the root ball. Place additional Planting

Soil around base and sides of ball in six-inch (6") lifts. Lightly tamp each lift using foot pressure or hand tools to settle backfill, support the tree and eliminate voids. DO NOT over compact the backfill or use mechanical or pneumatic tamping equipment. Over compaction shall be defined as greater than 85% of maximum dry density, standard proctor or greater than 250 psi as measured by a cone penetrometer when the volumetric soil moisture is lower than field capacity. 1. When the planting hole has been backfilled to three quarters of its depth, water shall be poured around

the root ball and allowed to soak into the soil to settle the soil. Do not flood the planting space. If the soil is above field capacity, allow the soil to drain to below field capacity before finishing the planting. Air pockets shall be eliminated and backfill continued until the planting soil is brought to grade level. L. Where indicated on the drawings, build a 4 inch high, level berm of Planting Soil around the outside of the

root ball to retain water. Tamp the berm to reduce leaking and erosion of the saucer. M. Thoroughly water the Planting Soil and root ball immediately after planting. N. Remove all nursery plant identification tags and ribbons as per Owner's Representative instructions. The

Owner's Representative's seals are to remain on plants until the end of the warranty period.

O. Remove corrugated cardboard trunk protection after planting. P. Follow additional requirements for the permitted root ball packages. 3.10 Permitted Root ball packages and Special planting requirements A. The following are permitted root ball packages and special planting requirements that shall be followed

during the planting process in addition to the above General planting requirements. B. BALLED AND BURLAPPED PLANTS 1. After the root ball has been backfilled, remove all twine and burlap from the top of the root ball. Cut the

A. Related Documents: Division I specifications apply to work of this section

2. Protect grade stakes set by others until directed to remove them

water runoff or airborne dust to adjacent properties and walkways.

legally dispose of them off Owner's property.

3.9 TURF AREA PREPARATION

Planting Soil.

B. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing

A. General: Prepare planting area for soil placement and mix planting soil according to Section 32 91 00 -

b. Contractor shall thoroughly blend planting soil off-site before spreading or spread topsoil, apply soil

c. Contractor shall spread planting soil to a depth of 4 inches but not less than required to meet finish

2. Unchanged Subgrades: If turf is to be planted in areas unaltered or undisturbed by excavating, grading,

b. Contractor shall loosen surface soil to a depth of at least 6 inches. Apply soil amendments and

fertilizers according to planting soil mix proportions and mix thoroughly into top 4 inches of soil. Till the

d. Contractor shall remove stones larger than 1 inch in any dimension and sticks, roots, trash, and other

e. Contractor shall legally dispose of waste material, including grass, vegetation, and turf, off Owner's

uniformly fine texture. Grade to within plus or minus 1/2 inch of finish elevation. Roll and rake. remove

4. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before

5. Before Planting, Contractor shall obtain Design Professional and/or Project Manager acceptance of

finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

A. Contractor shall lay sod within 24 hours of harvesting. Do not lay sod if dormant or if ground is frozen or

B. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod; do not stretch or overlap.

Stagger sod strips or pads to offset joints in adjacent courses. Avoid damage to subgrade or sod during

surface. Work sifted soil or fine sand into minor cracks between pieces of sod; remove excess to avoid

D. Contractor shall anchor sod on slopes exceeding 1:6 with wood pegs spaces as recommended by sod

E. Contractor shall saturate sod with fine water spray within two hours of planting. During first week after

planting, water daily or more frequently as necessary to maintain moist soil to a minimum depth of 1-1/2

A. Contractor shall maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting,

or eroded areas and remulch to produce a uniformly smooth turf. Provide materials and installation the

appropriate for species without cutting more than 1/3 of grass height. Remove no more than 1/3 of grass

accordance with authorities having jurisdiction and manufacturer's written recommendations. Coordinate

applications with Owner's operations and others in proximity to the work. Notify Owner's Representative

B. Satisfactory Seeded Turf: At end of maintenance period, a healthy, uniform, close stand of grass has been

established, free of weeds and surface irregularities, with coverage exceeding 90 percent over any 10

C. Satisfactory Sodded Turf: At end of maintenance period, a healthy, well-rooted, even-colored, viable turf

A. Apply pesticides and other chemical products and biological control agents according to requirements of

A. During installation, keep the site free of trash, pavements reasonably clean and work area in an orderly

from all surfaces within the project or on public right of ways and neighboring property.

ruts, and damage by the plant installer to the work or other work at the site.

Treat, repair or replace damaged work immediately.

3.16 PLANT MAINTENANCE PRIOR TO SUBSTANTIAL COMPLETION ACCEPTANCE

procedures. Mulch areas shall be kept reasonably free of weeds, grass.

1. Immediately clean up any spilled or tracked soil, fuel, oil, trash or debris deposited by the Contractor

B. Once installation is complete, wash all soil from pavements and other structures. Make all repairs to grades,

C. Remove and dispose of all excess planting soil, subsoil, mulch, sod, packaging, and other material brought

A. The Contractor shall erect temporary fencing or barricades or warning signs as required to protect newly

B. Damage done by the Contractor, or any of their sub-contractors to existing or installed turf grass, or any

other parts of the work or existing features to remain, including roots, trunk or branches of large existing

property, shall be cleaned, repaired or replaced by the Contractor at no expense to the Owner. The

Owner's Representative shall determine when such cleaning, replacement or repair is satisfactory.

A. During the project work period and prior to Substantial Completion Acceptance, the Contractor shall

B. Maintenance during the period prior to Substantial Completion Acceptance shall consist of pruning,

applying insecticides and herbicide shall follow established Integrated Pest Management (IPM)

1. Notification shall be at least 7 days prior to the date the contractor is requesting the review.

accepts that all work in Planting, Planting Soil, and Irrigation installation sections is complete.

and establish that all provisions of the contract are complete and the work is satisfactory.

A. Upon written notice from the Contractor, the Owners Representative shall review the work and make a

B. The date of substantial completion of the planting shall be the date when the Owner's Representative

Representative. The date of substantial completion may be different than the date of substantial

C. The Plant Warranty period begins at date of written notification of substantial completion from the Owner's

A. At the end of the Warranty and Maintenance period the Owner's Representative shall observe the work

2. If the work is deemed unsatisfactory, the maintenance period will continue at no additional expense to

B. FAILURE TO PASS OBSERVATION: If the work fails to pass final observation, any subsequent observations must

be rescheduled as per above. The cost to the Owner for additional observations will be charged to the

SECTION 32 93 00

PLANTING

v. The scope of work includes all labor, materials, appliances, tools, equipment, facilities, transportation and

and installation of plant (also known as "landscaping") complete as shown on the drawings and as

A. Shall consist of specifications and general conditions and the construction drawings. The intent of these

documents is to include all labor, materials, and services necessary for the proper execution of the work.

The documents are to be considered as one. Whatever is called for by any parts shall be as binding as if

services necessary for, and incidental to performing all operations in connection with furnishing, delivery,

the Owner until the work has been completed, observed, and approved by the Owner's Representative.

1. If the work is satisfactory, the maintenance period will end on the date of the final observation.

trees, soil, paving, utilities, lighting, irrigation, other finished work and surfaces including those on adjacent

watering, cultivating, weeding, mulching, removal of dead material, repairing and replacing of tree stakes,

tightening and repairing of guys, repairing and replacing of damaged tree wrap material, resetting plants

to proper grades and upright position, and furnishing and applying such sprays as are necessary to keep

plantings reasonably free of damaging insects and disease, and in healthy condition. The threshold for

planted areas from traffic. Maintain protection during installation until Substantial Completion Acceptance.

authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with

Owner's operations and others in proximity to the Work. Notify Owner before each application is performed.

condition at the end of each day. Remove trash and debris in containers from the site no less than once a

B. Contractor shall mow turf as soon as top growth is tall enough to cut. Repeat mowing to maintain height

C. Contractor shall apply pesticides and other chemical products and biological control agents in

A. Turf installations shall meet the following criteria as determined by the Owner's Representative.

has been established, free of weeds, open joints, bare areas, and surface irregularities.

B. Post-Emergent Herbicides (Selective and Non-Selective): Apply only as necessary to treat

already-germinated weeds and according to manufacturer's written recommendations.

D. Use specified materials to reestablish turf that does not comply with requirements and continue

and performing other operations as required to establish healthy, viable turf. Roll, regrade, and replant bare

manufacturer but not less than 2 anchors per sod strip to prevent slippage

installation. Tamp and roll lightly to ensure contact with subgrade, eliminate air pockets, and form a smooth

3. Finish Grading: Contractor shall grade planting areas to a smooth, uniform surface plane with loose,

a. Contractor shall remove existing grass, vegetation, and turf. Do not mix into surface soil.

grades after light rolling and natural settlement. Do not spread if planting soil or subgrade is frozen,

amendments and fertilizer on surface, and thoroughly blend planting soil.

d. Reduce elevation of planting soil to allow for soil thickness of sod.

or surface soil stripping operations, prepare surface soil as follows:

c. Contractor shall apply fertilizer directly to surface soil before loosening.

soil to a homogeneous mixture of fine texture.

extraneous matter.

3.10 SODDING

planting. Do not create muddy soil.

smothering sod and adjacent grass.

inches below sod.

.11 TURF MAINTENANCE

3.12 SATISFACTORY TURF

.13 PESTICIDE APPLICATION

C. Lay sod across angle of slopes exceeding 1:3.

same as those used in the original installation.

leaf growth in initial or subsequent mowings.

square feet and bare spots not exceeding 5 by 5 inches.

before each application is performed.

maintenance until turf is satisfactory.

to the site by the Contractor.

3.15 PROTECTION DURING CONSTRUCTION

3.17 SUBSTANTIAL COMPLETION ACCEPTANCE

determination if the work is substantially complete.

completion for the other sections of the project.

A. Refer to Ground Maintenance Specifications

END OF SECTION 32 92 00

PART 1 GENERAL

1.1 SUMMARY

3.18 MAINTENANCE DURING THE WARRANTY PERIOD by the plant installer

3.19 END OF WARRANTY FINAL ACCEPTANCE / MAINTENANCE OBSERVATION

Contractor at the prevailing hourly rate of the Owners Representative.

B. The scope of work in this section includes, but is not limited to, the following:

4. Maintenance of all specified plants until the beginning of the warranty period.

Locate, purchase, deliver and install all specified plants.

6. Clean up and disposal of all excess and surplus material.

7. Maintenance of all specified plants during the warranty period.

3. Mulch, fertilize, stake, and prune all specified plants.

RELATED DOCUMENTS AND REFERENCES

2. Water all specified plants.

5. Plant warranty.

2 CONTRACT DOCUMENTS

called for in all parts.

8. Drawings and general provisions of contract including general and supplementary conditions and

that the requirements of the following referenced standards and specification conflict with this specification section the requirements of this specification shall prevail. In the event that the requirements 1. Newly Graded Subgrades: Contractor shall loosen subgrade to a minimum depth of 6 inches. Remove of any of the following referenced standards and specifications conflict with each other the more stringent stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and requirement shall prevail or as determined by the Owners Representative. 1. ANSI Z60.1 American Standard for Nursery Stock, most current edition. a. Contractor shall apply fertilizer directly to subgrade before loosening.

9. Related Specification Sections

b. Section 32 91 00 - Planting Soil

c. Section 32 92 00 - Turf and Grasses

a. Section 01 56 39 - Tree and Plant Protection

http://www.ars-grin.gov/npgs/searchgrin.html

2. ANSI A 300 - Standard Practices for Tree, Shrub and other Woody Plant Maintenance, most current

3. Florida Grades and Standards for Nursery Stock, current edition (Florida Department of Agriculture, Tallahassee FL) 4. Interpretation of plant names and descriptions shall reference the following documents. Where the

B. References: The following specifications and standards of the organizations and documents listed in this

paragraph form a part of the specification to the extent required by the references thereto. In the event

names or plant descriptions disagree between the several documents, the most current document shall a. USDA - The Germplasm Resources Information Network (GRIN)

b. Manual of Woody Landscape Plants; Michael Dirr; Stipes Publishing, Champaign, Illinois; Most Current c. The New Sunset Western Garden Book, Oxmoor House, most current edition.

5. Pruning practices shall conform to recommendations "Structural Pruning: A Guide For The Green Industry" most current edition; published by Urban Tree Foundation, Visalia, California. 6. Glossary of Arboricultural Terms, International Society of Arboriculture, Champaign IL, most current

1.4 VERIFICATION A. All scaled dimensions on the drawings are approximate. Before proceeding with any work, the Contractor shall carefully check and verify all dimensions and quantities, and shall immediately inform the Owner's ridges, and fill depressions to meet finish grades. Limit finish grading to areas that can be planted in the Representative of any discrepancies between the information on the drawings and the actual conditions,

refraining from doing any work in said areas until given approval to do so by the Owner's Representative. B. In the case of a discrepancy in the plant quantities between the plan drawings and the plant call outs, list or plant schedule, the number of plants or square footage of the planting bed actually drawn on the plan drawings shall be deemed correct and prevail. 1.5 PERMITS AND REGULATIONS

A. The Contractor shall obtain and pay for all permits related to this section of the work unless previously excluded under provision of the contract or general conditions. The Contractor shall comply with all laws and ordinances bearing on the operation or conduct of the work as drawn and specified. If the Contractor observes that a conflict exists between permit requirements and the work outlined in the contract documents, the Contractor shall promptly notify the Owner's Representative in writing including a description of any necessary changes and changes to the contract price resulting from changes in the

B. Wherever references are made to standards or codes in accordance with which work is to be performed or tested, the edition or revision of the standards and codes current on the effective date of this contract shall apply, unless otherwise expressly set forth.

C. In case of conflict among any referenced standards or codes or between any referenced standards and codes and the specifications, the more restrictive standard shall apply or Owner's Representative shall determine which shall govern. 1.6 PROTECTION OF WORK, PROPERTY AND PERSON

A. The Contractor shall adequately protect the work, adjacent property, and the public, and shall be

responsible for any damages or injury due to his/her actions.

1.9 DEFINITIONS

A. The Owner's Representative may order changes in the work, and the contract sum should be adjusted accordingly. All such orders and adjustments plus claims by the Contractor for extra compensation must be made and approved in writing before executing the work involved. B. All changes in the work, notifications and contractor's request for information (RFI) shall conform to the

contract general condition requirements. I.8 CORRECTION OF WORK A. The Contractor, at their own cost, shall re-execute any work that fails to conform to the requirements of the contract and shall remedy defects due to faulty materials or workmanship upon written notice from the Owner's Representative, at the soonest as possible time that can be coordinated with other work and seasonal weather demands.

All terms in this specification shall be as defined in the "Glossary of Arboricultural Terms" or as modified below. A. Boxed trees: A container root ball package made of wood in the shape of a four-sided box B. Container plant: Plants that are grown in and/or are currently in a container including boxed trees. C. Defective plant: Any plant that fails to meet the plant quality requirement of this specification. D. End of Warranty Final Acceptance: The date when the Owner's Representative accepts that the plants

workmanship warranty for Planting, Planting Soil, and Irrigation work run concurrent with each other. E. Field grown trees (B&B): Trees growing in field soil for at least 12 months prior to harvest. F. Healthy: Plants that are growing in a condition that expresses leaf size, crown density, color; and with annual growth rates typical of the species and cultivar's horticultural description, adjusted for the planting site soil, drainage and weather conditions.

and work in this section meet all the requirements of the warranty. It is intended that the materials and

I. Maintenance period: The time period, as defined in this specification, which the Contractor is to provide J. Normal: the prevailing protocol of industry standard(s). K. Owner's Representative: The person appointed by the Owner to represent their interest in the review and

H. Maintenance: Actions that preserve the health of plants after installation and as defined in this

G. Kinked root: A root within the root package that bends more than 90 degrees.

approval of the work and to serve as the contracting authority with the Contractor. The Owner's Representative may appoint other persons to review and approve any aspects of the work. . Reasonable and reasonably: When used in this specification relative to plant quality, it is intended to mean that the conditions cited will not affect the establishment or long term stability, health or growth of the plant. This specification recognizes that it is not possible to produce plants free of all defects, but that some accepted industry protocols and standards result in plants unacceptable to this project. When reasonable or reasonably is used in relation to other issues such as weeds, diseased, insects, it shall mean at levels low enough that no treatment would be required when applying recognized Integrated

This specification recognizes that some decisions cannot be totally based on measured findings and that professional judgment is required. In cases of differing opinion, the Owner's Representative's expert shall determine when conditions are judged as reasonable. M. Root ball: The mass of roots including any soil or substrate that is shipped with the tree within the root ball

include the material in which the plant was grown, or new packaging placed around the root ball for O. Root collar (root crown, root flare, trunk flare, flare): The region at the base of the trunk where the majority of the structural roots join the plant stem, usually at or near ground level.

N. Root ball package. The material that surrounds the root ball during shipping. The root package may

P. Shrub: Woody plants with mature height approximately less than 15 feet. Q. Spade harvested and transplanted: Field grown trees that are mechanically harvested and immediately transplanted to the final growing site without being removed from the digging machine. R. Stem: The trunk of the tree.

S. Substantial Completion Acceptance: The date at the end of the Planting, Planting Soil, and Irrigation installation where the Owner's Representative accepts that all work in these sections is complete and the Warranty period has begun. This date may be different than the date of substantial completion for the T. Stem girdling root: Any root more than ¼ inch diameter currently touching the trunk, or with the potential to touch the trunk, above the root collar approximately tangent to the trunk circumference or circling the

trunk. Roots shall be considered as Stem Girdling that have, or are likely to have in the future, root to trunk U. Structural root: One of the largest roots emerging from the root collar.

B. Submit all product submittals 8 weeks prior to installation of plantings.

responsibility of the Contractor.

Representative for approval.

I 13 QUALITY ASSURANCE

V. Tree: Single and multi-stemmed plants with mature height approximately greater than 15 feet. A. See contract general conditions for policy and procedure related to submittals.

C. Product data: Submit manufacturer product data and literature describing all products required by this section to the Owner's Representative for approval. Provide submittal eight weeks before the installation of D. Plant growers' certificates: Submit plant growers' certificates for all plants indicating that each meets the

requirements of the specification, including the requirements of tree quality, to the Owner's Representative for approval. Provide submittal eight weeks before the installation of plants. i. Samples: Submit samples of each product and material where required by the specification to the Owner's Representative for approval. Label samples to indicate product, characteristics, and locations in the work.

Samples will be reviewed for appearance only. Compliance with all other requirements is the exclusive

F. Plant sources: Submit sources of all plants as required by Article - "Selection of Plants" to the Owner's

G. Close out submittals: Submit to the Owner's Representative for approval. 1. Plant maintenance data and requirements. 1.11 OBSERVATION OF THE WORK A. The Owner's Representative may observe the work at any time. They may remove samples of materials for PART 2 PRODUCTS conformity to specifications. Rejected materials shall be immediately removed from the site and replaced at the Contractor's expense. The cost of testing materials not meeting specifications shall be paid by the

B. The Owner's Representative shall be informed of the progress of the work so the work may be observed at the following key times in the construction process. The Owner's Representative shall be afforded sufficient time to schedule visit to the site. Failure of the Owner's Representative to make field observations shall not relieve the Contractor from meeting all the requirements of this specification. 1. SITE CONDITIONS PRIOR TO THE START OF PLANTING: review the soil and drainage conditions.

2. COMPLETION OF THE PLANT LAYOUT STAKING: Review of the plant layout.

procedures during construction and project work schedule.

3. PLANT QUALITY: Review of plant quality at the time of delivery and prior to installation. Review tree quality prior to unloading where possible, but in all cases prior to planting. 4. COMPLETION OF THE PLANTING: Review the completed planting. 1.12 PRE-CONSTRUCTION CONFERENCE A. Schedule a pre-construction meeting with the Owner's Representative at least seven (7) days before

beginning work to review any questions the Contractor may have regarding the work, administrative

A. Substantial Completion Acceptance - Acceptance of the work prior to the start of the warranty period: 1. Once the Contractor completes the installation of all items in this section, the Owner's Representative will observe all work for Substantial Completion Acceptance upon written request of the Contractor. The request shall be received at least ten calendar days before the anticipated date of the observation.

specification. When there is a conflict between this specification and ANSI Z60.1, this specification section shall be considered correct. 2. Plants larger than specified may be used if acceptable to the Owner's Representative. Use of such plants shall not increase the contract price. If larger plants are accepted the root ball size shall be in accordance with ANSI Z-60.1. Larger plants may not be acceptable if the resulting root ball cannot be fit

planting trees originating outside the county in which they are to be planted. D. Plant Quality:

representative shall make the final determination that plants are defective. 4. Plants determined to be defective shall be removed immediately upon notification by the Owner's Representative and replaced without cost to the Owner, as soon as weather conditions permit and within the specified planting period. 5. Any work required by this specification or the Owner's Representative during the progress of the work, to

2. Substantial Completion Acceptance by the Owner's Representative shall be for general conformance

3. Any plants that are deemed defective as defined under the provisions below shall not be accepted.

Substantial Completion Acceptance and the beginning of the warranty period and plant maintenance

C. Contractor's Quality Assurance Responsibilities: The Contractor is solely responsible for quality control of the

scope similar to that required for the work, including the handling and planting of large specimen trees in

2. Installer Field Supervision: When any planting work is in progress, installer shall maintain, on site, a full-time

plants and trees of the quality and scale of the proposed project, and can communicate in English with

Plantings, and Irrigation (where applicable) and interpretation of soil plans, planting plans and irrigation

3. Installer's field supervisor shall have a minimum of five years experience as a field supervisor installing

5. Submit references of past projects, employee training certifications that support that the Contractors

A. The Contractor agrees to replace defective work and defective plants. The Owner's Representative shall

1. Plants warranty shall begin on the date of Substantial Completion Acceptance and continue for the

d. Bulbs, annual flower and seasonal color plants - for the period of expected bloom or primary display.

Substantial Completion Acceptances to the terminal date of the last warranty period. Thus, all warranty

specification. Defective plants shall be defined as plants not meeting these requirements. The Owner's

When the work is accepted in parts, the warranty periods shall extend from each of the partial

3. All plants shall be warrantied to meet all the requirements for plant quality at installation in this

make the final determination if plants meet these specifications or that plants are defective.

4. The installer's crew shall have a minimum of 3 years experienced in the installation of Planting Soil,

to specified size, character and quality and not relieve the Contractor of responsibility for full

B. The Owner's Representative will provide the Contractor with written acknowledgment of the date of

D. Installer Qualifications: The installer shall be a firm having at least 5 years of successful experience of a

urban areas. The same firm shall install planting soil (where applicable) and plant material.

supervisor who can communicate in English with the Owner's Representative.

meets all of the above installer qualifications and applicable licensures.

periods for each class of plant warranty, shall terminate at one time.

1. The bidders list for work under this section shall be approved by the Owner's Representative.

conformance to the contract documents, including correct species.

period (if plant maintenance is included).

the Owner's Representative.

following periods, classed by plant type:

c. Ground cover and perennial flower plants - 1 Year.

1.14 PLANT WARRANTY:

a. Trees - 1 Year.

b. Shrubs - 1 Year.

will not harm the plant.

1.16 PLANT SUBSTITUTIONS FOR PLANTS NOT AVAILABLE

accepted prior to the installation of any plants.

shown and scheduled in contract documents.

rain or snow or during extremely hot, cold or windy conditions.

correct plant defects including the removal of roots or branches, or planting plants that have been bare rooted during installation to observe for or correct root defects shall not be considered as grounds to void any conditions of the warranty. In the event that the Contractor decides that such remediation

work may compromise the future health of the plant, the plant or plants in question shall be rejected and replaced with plants that do not contain defects that require remediation or correction. 6. The Contractor is exempt from replacing plants, after Substantial Completion Acceptance and during the warranty period, that are removed by others, lost or damaged due to occupancy of project, lost or damaged by a third party, vandalism, or any natural disaster.

subject to all requirements stated in this specification. Make all necessary repairs due to plant replacements. Such repairs shall be done at no extra cost to the Owner. 8. The warranty of all replacement plants shall extend for an additional one-year period from the date of their acceptance after replacement. In the event that a replacement plant is not acceptable during or at the end of the said extended warranty period, the Owner's Representative may elect one more replacement items or credit for each item. These tertiary replacement items are not protected under a warranty period.

9. During and by the end of the warranty period, remove all tree wrap, ties, and guying unless agreed to

by the Owner's Representative to remain in place. All trees that do not have sufficient caliper to remain

7. Replacements shall closely match adjacent specimens of the same species. Replacements shall be

upright, or those requiring additional anchorage in windy locations, shall be staked or remain staked, if required by the Owner's Representative. B. End of Warranty Final Acceptance - Acceptance of plants at the end of the warranty period. 1. At the end of the warranty period, the Owner's Representative shall observe all warranted work, upon written request of the Contractor. The request shall be received at least ten calendar days before the anticipated date for final observation.

2. End of Warranty Final Acceptance will be given only when all the requirements of the work under this

prior to delivery and to reject plants that do not meet specifications as set forth in this specification. If a

particular defect or substandard element can be corrected at the nursery, as determined by the Owner's

specification and in specification sections Planting Soil and Irrigation have been met.

1.15 SELECTION AND OBSERVATION OF PLANTS A. The Owner's Representative may review all plants subject to approval of size, health, quality, character, etc. Review or approval of any plant during the process of selection, delivery, installation and establishment period shall not prevent that plant from later rejection in the event that the plant quality changes or previously existing defects become apparent that were not observed.

Representative, the agreed upon remedy may be applied by the nursery or the Contractor provided that the correction allows the plant to meet the requirements set forth in this specification. Any work to correct plant defects shall be at the contractor's expense. 1. The Owner's Representative may make invasive observation of the plant's root system in the area of the root collar and the top of the root ball in general in order to determine that the plant meets the quality requirements for depth of the root collar and presence of roots above the root collar. Such observations

D. All plants that are rejected shall be immediately removed from the site and acceptable replacement plants provided at no cost to the Owner. E. Submit to the Owner's Representative, for approval, plant sources including the names and locations of nurseries proposed as sources of acceptable plants, and a list of the plants they will provide. The plant list shall include the botanical and common name and the size at the time of selection. Observe all nursery materials to determine that the materials meet the requirements of this section.

observe the root system of all plants at the nursery or job site prior to planting including random removal of soil or substrate around the base of the plant. Observation may be as frequent and as extensive as needed to verify that the plants meet the requirements of the specifications and conform to requirements. G. Where requested by the Owner's Representative, submit photographs of plants or representative samples of plants. Photographs shall be legible and clearly depict the plant specimen. Each submitted image shall contain a height reference, such as a measuring stick. The approval of plants by the Owner's Representative via photograph does not preclude the Owner's Representative's right to reject material

F. The Contractor shall require the grower or re-wholesale supplier to permit the Owner's Representative to

A. Submit all requests for substitutions of plant species, or size to the Owner's Representative, for approval, prior to purchasing the proposed substitution. Request for substitution shall be accompanied with a list of nurseries contacted in the search for the required plant and a record of other attempts to locate the required material. Requests shall also include sources of plants found that may be of a smaller or larger size, or a different shape or habit than specified, or plants of the same genus and species but different cultivar origin, or which may otherwise not meet the requirements of the specifications, but which may be

2. Corrections are to be undertaken at the nursery prior to shipping.

C. The Contractor shall bear all cost related to plant corrections.

available for substitution. 1.17 SITE CONDITIONS A. It is the responsibility of the Contractor to be aware of all surface and sub-surface conditions, and to notify the Owner's Representative, in writing, of any circumstances that would negatively impact the health of plantings. Do not proceed with work until unsatisfactory conditions have been corrected. 1. Should subsurface drainage or soil conditions be encountered which would be detrimental to growth or

survival of plant material, the Contractor shall notify the Owner's Representative in writing, stating the

conditions and submit a proposal covering cost of corrections. If the Contractor fails to notify the

Owner's Representative of such conditions, he/she shall remain responsible for plant material under the warranty clause of the specifications. B. It is the responsibility of the Contractor to be familiar with the local growing conditions, and if any specified 2.4 PALMS plants will be in conflict with these conditions. Report any potential conflicts, in writing, to the Owner's

C. This specification requires that all Planting Soil and Irrigation (if applicable) work be completed and

1. Planting operations shall not begin until such time that the irrigation system is completely operational for the area(s) to be planted, and the irrigation system for that area has been preliminarily observed and approved by the Owner's Representative. D. Actual planting shall be performed during those periods when weather and soil conditions are suitable in accordance with locally accepted horticultural practices.

1. Do not install plants into saturated or frozen soils. Do not install plants during inclement weather, such as

1.18 PLANTING AROUND UTILITIES A. Contractor shall carefully examine the civil, record, and survey drawings to become familiar with the existing underground conditions before digging. B. Determine location of underground utilities and perform work in a manner that will avoid possible damage. Hand excavate, as required. Maintain grade stakes set by others until parties concerned mutually agree

C. Notification of FPL, 811, is required for all planting areas: The Contractor is responsible for knowing the location and avoiding utilities that are not covered by FPL. 2.1 PLANTS: GENERAL

. All plants including the root ball dimensions or container size to trunk caliper ratio shall conform to ANSI Z60.1 "American Standard for Nursery Stock" latest edition, unless modified by provisions in this

A. Standards and measurement: Provide plants of quantity, size, genus, species, and variety or cultivars as

plants shall be as large as the maximum size specified. The measurements specified are the minimum and maximum size acceptable and are the measurements after pruning, where pruning is required. B. Proper Identification: All trees shall be true to name as ordered or shown on planting plans and shall be labeled individually or in groups by genus, species, variety and cultivar. C. Compliance: All trees shall comply with federal and state laws and regulations requiring observation for plant disease, pests, and weeds. Observation certificates required by law shall accompany each shipment 2.7 TREE STAKING AND GUYING MATERIAL

1. Clearance from the local county agricultural commissioner, if required, shall be obtained before

2. Fill any gaps below this level with loose soil.D. CONTAINER (INCLUDES BOXED AND ABOVE-GROUND FABRIC CONTAINERS) PLANTS

 This specification assumes that most container plants have significant stem girdling and circling roots, and that the root collar is too low in the root ball.

2. Remove the container.3. Perform root ball shaving as defined in Installation of Plants: General above.

4. Remove all roots and substrate above the root collar and the main structural roots according to root correction details so root system conforms to root observations detail.

5. Remove all substrate at the bottom of the root ball that does not contain roots.6. Using a hose, power washer or air excavation device, wash out the substrate from around the trunk and

6. Using a hose, power washer or air excavation device, wash out the substrate from around the trunk and top of the remaining root ball and find and remove all stem girdling roots within the root ball above the top of the structural roots.

3.11 GROUND COVER, PERENNIAL AND ANNUAL PLANTS

A. Assure that soil moisture is within the required levels prior to planting. Irrigation, if required, shall be applied at least 12 hours prior to planting to avoid planting in muddy soils.

B. Assure that soil grades in the beds are smooth and as shown on the plans.C. Plants shall be planted in even, triangularly spaced rows, at the intervals called out for on the drawings, unless otherwise noted. The first row of Annual flower plants shall be 6 inches from the bed edge unless

D. Dig planting holes sufficiently large enough to insert the root system without deforming the roots. Set the top of the root system at the grade of the soil.

E. Schedule the planting to occur prior to application of the mulch. If the bed is already mulched, pull the mulch from around the hole and plant into the soil. Do not plant the root system in the mulch. Pull mulch back so it is not on the root ball surface.

F. Press soil to bring the root system in contact with the soil.

G. Spread any excess soil around in the spaces between plants.H. Apply mulch to the bed being sure not to cover the tops of the plants with or the tops of the root ball with

Water each planting area as soon as the planting is completed. Apply additional water to keep the soil moisture at the required levels. Do not over water.

3.12 PALM PLANTING

A. Palm trees shall be placed at grade making sure not to plant the tree any deeper in the ground than the palm trees originally stood.

B. The trees shall be placed with their vertical axis in a plumb position.

C. All backfill shall be native soil except in cases where planting in rock. Water-settle the back fill.

D. Do not cover root ball with mulch or topsoil.

E. Provide a watering berm at each palm. Berms shall extend a minimum of 18 inches out from the trunk all around and shall be a minimum of (6) inches high.

F. Remove twine which ties fronds together after placing palm in planting hole and securing it in the upright position.3.13 STAKING AND GUYING

A. Do not stake or guy trees unless specifically required by the Contract Documents, or in the event that the Contractor feels that staking is the only alternative way to keep particular trees plumb.

The Owner's Representative shall have the authority to require that trees are staked or to reject staking as an alternative way to stabilize the tree.

Trees that required heavily modified root balls to meet the root quality standards may become unstable.
 The Owner's Representative may choose to reject these trees rather than utilize staking to temporarily
 Support the tree

B. Trees that are guyed shall have their guys and stakes removed after one full growing season or at other times as required by the Owner's Representative.

C. Tree guying shall utilize the tree staking and guying materials specified. Guying to be tied in such a manner as to create a minimum 12-inch loop to prevent girdling. Refer to manufacturer's recommendations and the planting detail for installation.

1. Plants shall stand plumb after staking or guying.

2. Stakes shall be driven to sufficient depth to hold the tree rigid.D. For trees planted in planting mix over waterproofed membrane, u

D. For trees planted in planting mix over waterproofed membrane, use dead men buried 24 inches to the top of the dead man, in the soil. Tie the guy to the dead man with a double wrap of line around the dead man followed by a double half hitch. When guys are removed, leave the dead men in place and cut the guy tape 12 inches above the ground, leaving the tape end covered in mulch.

3.14 STRAIGHTENING PLANTS

A. Maintain all plants in a plumb position throughout the warranty period. Straighten all trees that move out of plumb including those not staked. Plants to be straightened shall be excavated and the root ball moved to a plumb position, and then re-backfilled.

B. Do not straighten plants by pulling the trunk with guys.

3.15 INSTALLATION OF FERTILIZER AND OTHER CHEMICAL ADDITIVES

A. Do not apply any soluble fertilizer to plantings during the first year after transplanting unless soil test determines that fertilizer or other chemical additives is required. Apply chemical additives only upon the approval of the Owner's Representative.

B. Controlled release fertilizers shall be applied according to the manufacturer's instructions and standard horticultural practices.

3.16 PRUNING OF TREES AND SHRUBS
 A. Prune plants as directed by the Owner's Representative. Pruning trees shall be limited to addressing structural defects as shown in details; follow recommendations in "Structural Pruning: A Guide For The

Green Industry" published by Urban Tree Foundation, Visalia CA.

B. All pruning shall be performed by a person experienced in structural tree pruning.

C. Except for plants specified as multi-stemmed or as otherwise instructed by the Owner's Representative,

D. Pruning of large trees shall be done using pole pruners or if needed, from a ladder or hydraulic lift to gain access to the top of the tree. Do not climb in newly planted trees. Small trees can be structurally pruned by laying them over before planting. Pruning may also be performed at the nursery prior to shipping.

E. Remove and replace excessively pruned or malformed stock resulting from improper pruning that occurred

E. Remove and replace excessively pruned or malformed stock resulting from improper pruning that occurred in the nursery or after.

F. Pruning shall be done with clean, sharp tools.G. No tree paint or sealants shall be used.

3.17 MULCHING OF PLANTS

A. Apply 3 inches of mulch before settlement, covering the entire planting bed area. Install no more than 1 inch of mulch over the top of the root balls of all plants. Taper to 2 inches when abutting pavement.B. For trees planted in lawn areas the mulch shall extend to a 5 foot radius around the tree or to the extent indicated on the plans.

C. Lift all leaves, low hanging stems and other green portions of small plants out of the mulch if covered.

3.18 PLANTING BED FINISHING

A. After planting, smooth out all grades between plants before mulching.
B. Separate the edges of planting beds and lawn areas with a smooth, formed edge cut into the turf with the bed mulch level slightly lower, 1 and 2 inches, than the adjacent turf sod or as directed by the Owner's Representative. Bed edge lines shall be a depicted on the drawings.

3.19 WATERING
 A. The Contractor shall be fully responsible to ensure that adequate water is provided to all plants from the point of installation until the date of Substantial Completion Acceptance. The Contractor shall adjust the automatic irrigation system, if available, and apply additional or adjust for less water using hoses as

B. Hand water root balls of all plants to assure that the root balls have moisture above wilt point and below field capacity. Test the moisture content in each root ball and the soil outside the root ball to determine the water content.

3.20 CLEAN-UP
 A. During installation, keep the site free of trash, pavements reasonably clean and work area in an orderly condition at the end of each day. Remove trash and debris in containers from the site no less than once a week.

week.
1. Immediately clean up any spilled or tracked soil, fuel, oil, trash or debris deposited by the Contractor from all surfaces within the project or on public right of ways and neighboring property.

B. Once installation is complete, wash all soil from pavements and other structures. Ensure that mulch is confined to planting beds and that all tags and flagging tape are removed from the site. The Owner's Representative's seals are to remain on the trees and removed at the end of the warranty period.

C. Make all repairs to grades, ruts, and damage by the plant installer to the work or other work at the site.
D. Remove and dispose of all excess planting soil, subsoil, mulch, plants, packaging, and other material brought to the site by the Contractor.
3.21 PROTECTION DURING CONSTRUCTION

A. The Contractor shall protect planting and related work and other site work from damage due to planting operations, operations by other Contractors or trespassers. Maintain protection during installation until Substantial Completion Acceptance. Treat, repair or replace damaged work immediately.

B. Damage done by the Contractor, or any of their sub-contractors to existing or installed plants, or any other parts of the work or existing features to remain, including roots, trunk or branches of large existing trees, soil, paving, utilities, lighting, irrigation, other finished work and surfaces including those on adjacent property, shall be cleaned, repaired or replaced by the Contractor at no expense to the Owner. The Owner's Representative shall determine when such cleaning, replacement or repair is satisfactory.
3.22 PLANT MAINTENANCE PRIOR TO SUBSTANTIAL COMPLETION ACCEPTANCE

A. During the project work period and prior to Substantial Completion Acceptance, the Contractor shall

B. Maintenance during the period prior to Substantial Completion Acceptance shall consist of pruning, watering, cultivating, weeding, mulching, removal of dead material, repairing and replacing of tree stakes, tightening and repairing of guys, repairing and replacing of damaged tree wrap material, resetting plants to proper grades and upright position, and furnishing and applying such sprays as are necessary to keep plantings reasonably free of damaging insects and disease, and in healthy condition. The threshold for applying insecticides and herbicide shall follow established Integrated Pest Management (IPM) procedures. Mulch areas shall be kept reasonably free of weeds, grass.

3.23 SUBSTANTIAL COMPLETION ACCEPTANCE
 A. Upon written notice from the Contractor, the Owners Representative shall review the work and make a determination if the work is substantially complete.

Notification shall be at least 7 days prior to the date the contractor is requesting the review.
 The date of substantial completion of the planting shall be the date when the Owner's Representative accepts that all work in Planting, Planting Soil, and Irrigation installation sections is complete.

C. The Plant Warranty period begins at date of written notification of substantial completion from the Owner's Representative. The date of substantial completion may be different than the date of substantial completion for the other sections of the project.

3.24 MAINTENANCE DURING THE WARRANTY PERIOD BY OWNER

A. After Substantial Completion Acceptance, the Contractor shall make sufficient site visits to observe the Owner's maintenance and become aware of problems with the maintenance in time to request changes, until the date of End of Warranty Final Acceptance.

1. Notify the Owner's Representative in writing if maintenance, including watering, is not sufficient to

maintain plants in a healthy condition. Such notification must be made in a timely period so that the Owner's Representative may take corrective action.

a. Notification must define the maintenance needs and describe any corrective action required.2. In the event that the Contractor fails to visit the site and or notify, in writing, the Owner's Representative of maintenance needs, lack of maintenance shall not be used as grounds for voiding or modifying the

3.25 MAINTENANCE DURING THE WARRANTY PERIOD BY INSTALLER

of each year of the maintenance agreement.

provisions of the warranty.

A. During the warranty period, provide all maintenance for all plantings to keep the plants in a healthy state and the planting areas clean and neat.B. General requirements:

All work shall be undertaken by trained planting crews under the supervision of a foreman with a minimum of 5 years experience supervising commercial plant maintenance crews.
 All chemical and fertilizer applications shall be made by licensed applicators for the type of chemicals to be used. All work and chemical use shall comply with all applicable local, provincial and federal

requirements.

3. Assure that hoses and watering equipment and other maintenance equipment does not block paths or be placed in a manner that may create tripping hazards. Use standard safety warning barriers and other procedures to maintain the site in a safe manner for visitors at all times.

4. All workers shall wear required safety equipment and apparel appropriate for the tasks being undertaken.

5. The Contractor shall not store maintenance equipment at the site at times when they are not in use unless authorized in writing by the Owner's Representative.6. Maintenance vehicles shall not park on the site including walks and lawn areas at any time without the

Owner's Representative's written permission.

7. Maintain a detailed log of all maintenance activities including types of tasks, date of task, types and quantities of materials and products used, watering times and amounts, and number of each crew. Periodically review the logs with the Owner's Representative, and submit a copy of the logs at the end

8. Meet with the Owner's Representative a minimum of three times a year to review the progress and discuss any changes that are needed in the maintenance program. At the end of the warranty period attend a hand over meeting to formally transfer the responsibilities of maintenance to the Owner's Representative. Provide all information on past maintenance activities and provide a list of critical tasks that will be needed over the next 12 months. Provide all maintenance logs and soil test data. Make the Contractor's supervisor available for a minimum of one year after the end of the warranty period to answer questions about past maintenance.

C. Provide the following maintenance tasks:

1. Watering; Provide all water required to keep soil within and around the root balls at optimum moisture

content for plant growth.

a. Maintain all watering systems and equipment and keep them operational.

b. Manitar soil maisture to provide sufficient water. Check soil maisture and root ball maisture with a soil.

b. Monitor soil moisture to provide sufficient water. Check soil moisture and root ball moisture with a soil moisture meter on a regular basis and record moisture readings. Do not over water.

2. Soil nutrient levels: Take a minimum of 4 soil samples from around the site in the spring and fall and have them tested by an accredited agricultural soil testing lab for chemical composition of plant required nutrients, pH, salt and % organic matter. Test results shall include laboratory recommendations for nutrient applications. Apply fertilizers at rates recommended by the soil test.

a. Make any other soil test and/or plant tissue test that may be indicated by plant conditions that may not be related to soil nutrient levels such as soil contaminated by other chemicals or lack of chemical uptake by the plant.

 Plant pruning: Remove cross over branching, shorten or remove developing co dominant leaders, dead wood and winter-damaged branches. Unless directed by the Owner's Representative, do not shear plants or make heading cuts.

4. Restore plants: Reset any plants that have settled or are leaning as soon as the condition is noticed.
5. Guying and staking: Maintain plant guys in a taught position. Remove tree guys and staking after the first full growing socrep unless directed by Overer's Papersontative

full growing season unless directed by Owner's Representative.6. Weed control: Keep all beds free of weeds. Hand-remove all weeds and any plants that do not appear on the planting plan. Chemical weed control is permitted only with the approval of the Owner's Representative. Schedule weeding as needed but not less 12 times per year.

7. Trash removal: Remove all trash and debris from all planting beds and maintain the beds in a neat and tidy appearance. The number of trash and debris removal visits shall be no less than 12 times per year and may coincide with other maintenance visits.

8. Plant pest control: Maintain disease, insects and other pests at manageable levels. Manageable levels shall be defined as damage to plants that may be noticeable to a professional but not to the average person. Use least invasive methods to control plant disease and insect outbreaks.

a. The Owner's Representative must approve in advance the use of all chemical pesticide applications.

Plant replacement: Replace all plants that are defective as defined in the warranty provisions, as soon
as the plant decline is obvious and in suitable weather and season for planting as outlined in above
sections. Plants that become defective during the maintenance period shall be covered and replaced
under the warranty provisions.

10. Mulch: Refresh mulch once a year to maintain complete coverage but do not over mulch. At no time

shall the overall mulch thickness be greater that 3 inches. Do not apply mulch within 6 inches of the trunks or stems of any plants. Replacement mulch shall meet the requirements of the original approved material. Mulch shall be no more than one inch on top of the root ball surface.

11. Bed edging: Check and maintain edges between mulch and lawn areas in smooth neat lines as originally shown on the drawings.

12.Leaf, fruit and other plant debris removal: Remove fall leaf, spent flowers, fruit and plant part accumulations from beds and paved surfaces. Maintain all surface water drains free of debris. Debris removal shall be undertaken at each visit to weed or pick up trash in beds.

13. Damage from site use: Repair of damage by site visitors and events, beyond normal wear, are not part of this maintenance. The Owner's Representative may request that the Contractor repair damage beds or plantings for an additional cost. All additional work shall be approved in advance by the Owner's Representative.

3.26 END OF WARRANTY FINAL ACCEPTANCE / MAINTENANCE OBSERVATION

Contractor at the prevailing hourly rate of the Owners Representative.

A. At the end of the Warranty and Maintenance period the Owner's Representative shall observe the work and establish that all provisions of the contract are complete and the work is satisfactory.

If the work is satisfactory, the maintenance period will end on the date of the final observation.
 If the work is deemed unsatisfactory, the maintenance period will continue at no additional expense to

the Owner until the work has been completed, observed, and approved by the Owner's Representative.

B. FAILURE TO PASS OBSERVATION: If the work fails to pass final observation, any subsequent observations must be rescheduled as per above. The cost to the Owner for additional observations will be charged to the

END OF SECTION 32 93 00



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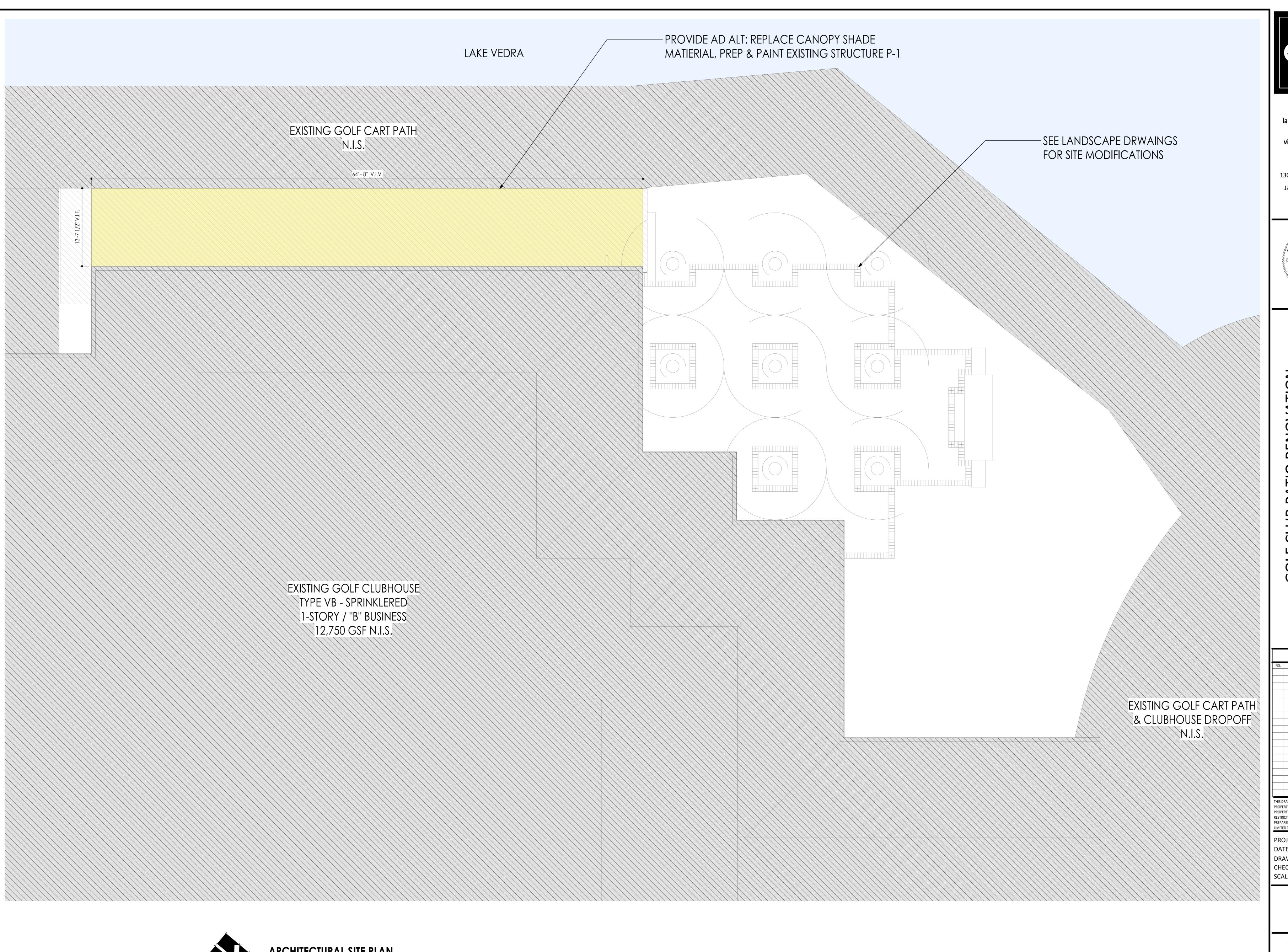
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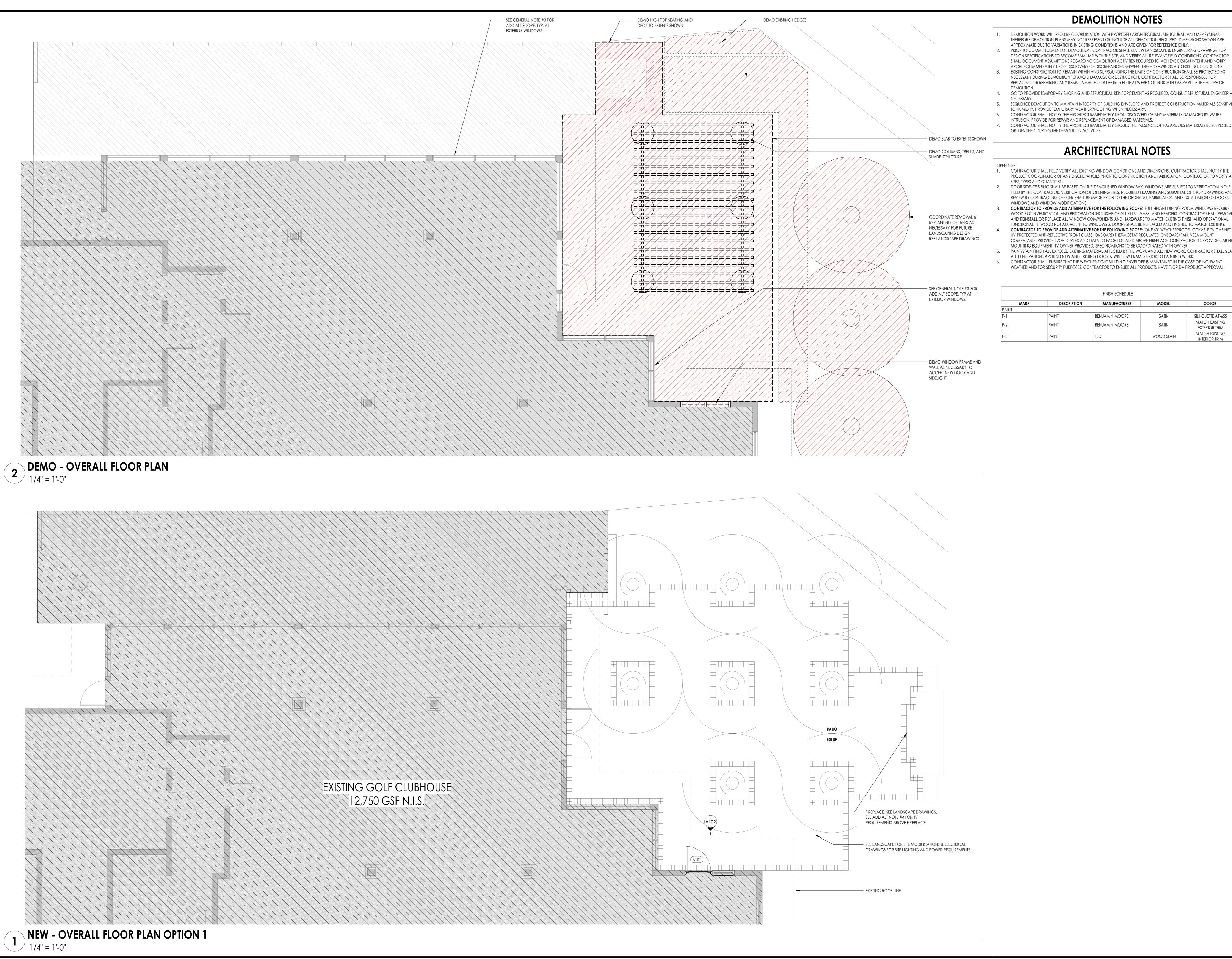
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SITE PLAN



DEMOLITION NOTES

- DEMOLITION WORK WILL REQUIRE COORDINATION WITH PROPOSED ARCHITECTURAL, STRUCTURAL, AND MEP SYSTEMS, THEREFORE DEMOLITION PLANS MAY NOT REPRESENT OR INCLUDE ALL DEMOLITION REQUIRED, DIMENSIONS SHOWN ARE APPROXIMATE DUE TO VARIATIONS IN EXISTING CONDITIONS AND ARE GIVEN FOR REFERENCE ONLY.
- DESIGN SPECIFICATIONS TO BECOME FAMILIAR WITH THE SITE, AND VERIFY ALL RELEVANT FIELD CONDITIONS. CONTRACTOR SHALL DOCUMENT ASSUMPTIONS REGARDING DEMOLITION ACTIVITIES REQUIRED TO ACHIEVE DESIGN INTENT AND NOTIFY ARCHITECT IMMEDIATELY UPON DISCOVERY OF DISCREPANCIES BETWEEN THESE DRAWINGS AND EXISTING CONDITIONS. EXISTING CONSTRUCTION TO REMAIN WITHIN AND SURROUNDING THE LIMITS OF CONSTRUCTION SHALL BE PROTECTED AS NECESSARY DURING DEMOLITION TO AVOID DAMAGE OR DESTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING OR REPAIRING ANY ITEMS DAMAGED OR DESTROYED THAT WERE NOT INDICATED AS PART OF THE SCOPE OF
- GC TO PROVIDE TEMPORARY SHORING AND STRUCTURAL REINFORCEMENT AS REQUIRED. CONSULT STRUCTURAL ENGINEER AS
- SEQUENCE DEMOLITION TO MAINTAIN INTEGRITY OF BUILDING ENVELOPE AND PROTECT CONSTRUCTION MATERIALS SENSITIVE TO HUMIDITY. PROVIDE TEMPORARY WEATHERPROOFING WHEN NECESSARY. CONTRACTOR SHALL NOTIFY THE ARCHITECT IMMEDIATELY UPON DISCOVERY OF ANY MATERIALS DAMAGED BY WATER
- INTRUSION. PROVIDE FOR REPAIR AND REPLACEMENT OF DAMAGED MATERIALS. CONTRACTOR SHALL NOTIFY THE ARCHITECT IMMEDIATELY SHOULD THE PRESENCE OF HAZARDOUS MATERIALS BE SUSPECTED OR IDENTIFIED DURING THE DEMOLITION ACTIVITIES.

ARCHITECTURAL NOTES

CONTRACTOR SHALL FIELD VERIFY ALL EXISTING WINDOW CONDITIONS AND DIMENSIONS, CONTRACTOR SHALL NOTIFY THE PROJECT COORDINATOR OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION AND FABRICATION. CONTRACTOR TO VERIFY ALL

- SIZES, TYPES AND QUANTITIES. DOOR SIDELITE SIZING SHALL BE BASED ON THE DEMOLISHED WINDOW BAY. WINDOWS ARE SUBJECT TO VERIFICATION IN THE FIELD BY THE CONTRACTOR. VERIFICATION OF OPENING SIZES, REQUIRED FRAMING AND SUBMITTAL OF SHOP DRAWINGS AND REVIEW BY CONTRACTING OFFICER SHALL BE MADE PRIOR TO THE ORDERING, FABRICATION AND INSTALLATION OF DOORS, WINDOWS AND WINDOW MODIFICATIONS.
- WOOD ROT INVESTIGATION AND RESTORATION INCLUSIVE OF ALL SILLS, JAMBS, AND HEADERS. CONTRACTOR SHALL REMOVE AND REINSTALL OR REPLACE ALL WINDOW COMPONENTS AND HARDWARE TO MATCH EXISTING FINISH AND OPERATIONAL FUNCTIONALITY. WOOD ROT ADJACENT TO WINDOWS & DOORS SHALL BE REPLACED AND FINISHED TO MATCH EXISTING. CONTRACTOR TO PROVIDE ADD ALTERNATIVE FOR THE FOLLOWING SCOPE: ONE 60" WEATHERPROOF LOCKABLE TV CABINET, UV PROTECTED ANTI-REFLECTIVE FRONT GLASS, ONBOARD THERMOSTAT REGULATED ONBOARD FAN, VESA MOUNT COMPATABLE. PROVIDE 120V DUPLEX AND DATA TO EACH LOCATED ABOVE FIREPLACE. CONTRACTOR TO PROVIDE CABINET, MOUNTING EQUIPMENT. TV OWNER PROVIDED, SPECIFICATIONS TO BE COORDINATED WITH OWNER. PAINT/STAIN FINISH ALL EXPOSED EXISTING MATERIAL AFFECTED BY THE WORK AND ALL NEW WORK. CONTRACTOR SHALL SEAL
- CONTRACTOR SHALL ENSURE THAT THE WEATHER-TIGHT BUILDING ENVELOPE IS MAINTAINED IN THE CASE OF INCLEMENT WEATHER AND FOR SECURITY PURPOSES. CONTRACTOR TO ENSURE ALL PRODUCTS HAVE FLORIDA PRODUCT APPROVAL.

FINISH SCHEDULE										
MARK	DESCRIPTION	MANUFACTURER	MODEL	COLOR						
AINT										
-1	PAINT	BENJAMIN MOORE	SATIN	SILHOUETTE AF-655						
-2	PAINT	BENJAMIN MOORE	SATIN	MATCH EXISTING EXTERIOR TRIM						
-3	PAINT	TBD	WOOD STAIN	MATCH EXISTING INTERIOR TRIM						



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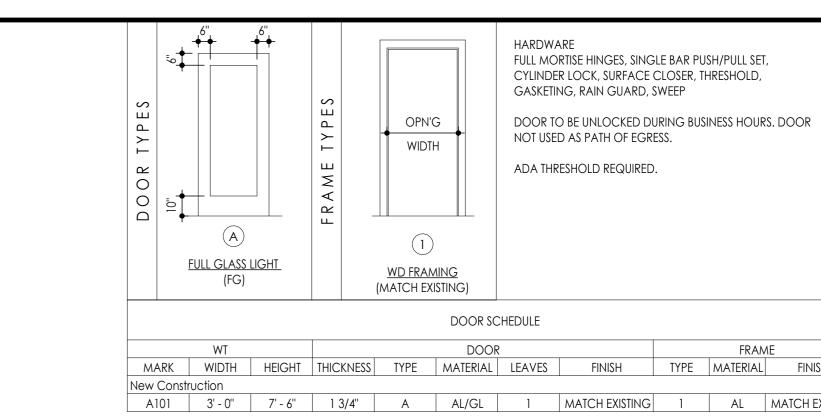
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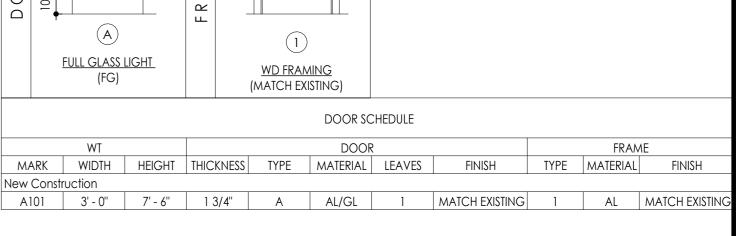
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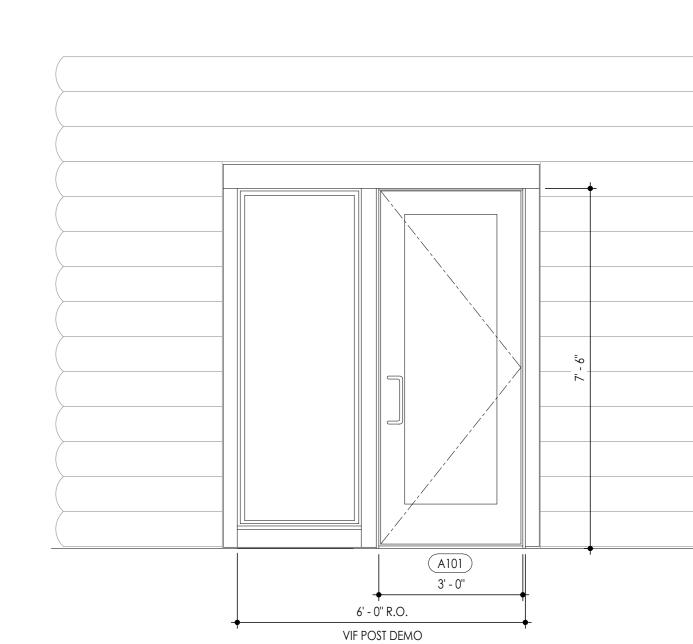
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____22-44 DATE: 12.22.2023 DRAWN BY: CHECKED BY: SCALE: ___ AS NOTED

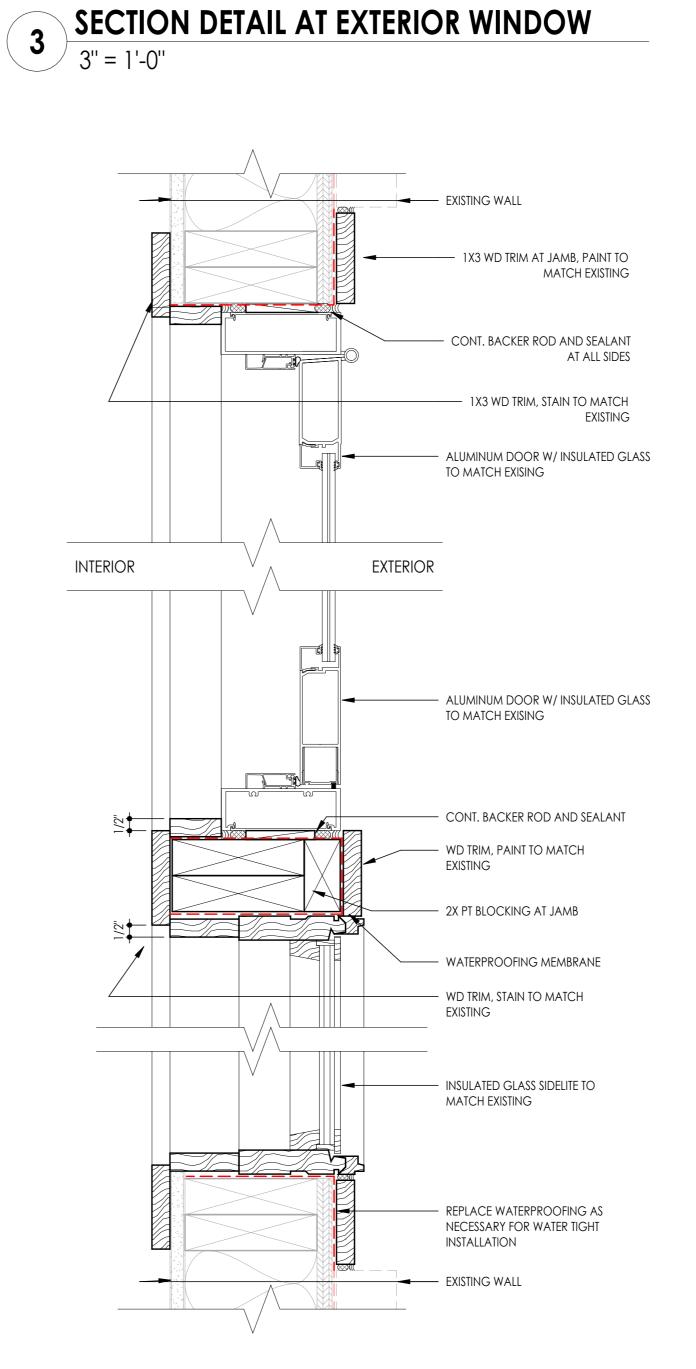
DEMO & NEW PLAN







DOOR A101 ELEVATION1/2" = 1'-0"



— EXISTING WALL TO REMAIN,

WD TRIM, PAINT TO MATCH EXISTING

INSULATED GLASS SIDELITE TO

EXISTING

---- PT BLOCKING AT SILL

AND SEALANT

EXISTING

CONT. SILL PAN OVER BACKER ROD

WD TRIM, PAINT TO MATCH

PAVERS OVER CLEAN COMPACTED FILL, REF HARDSCAPE DRAWINGS

WATERPROOFING MEMBRANE

EXPANSION JOINT

MATCH EXISTING

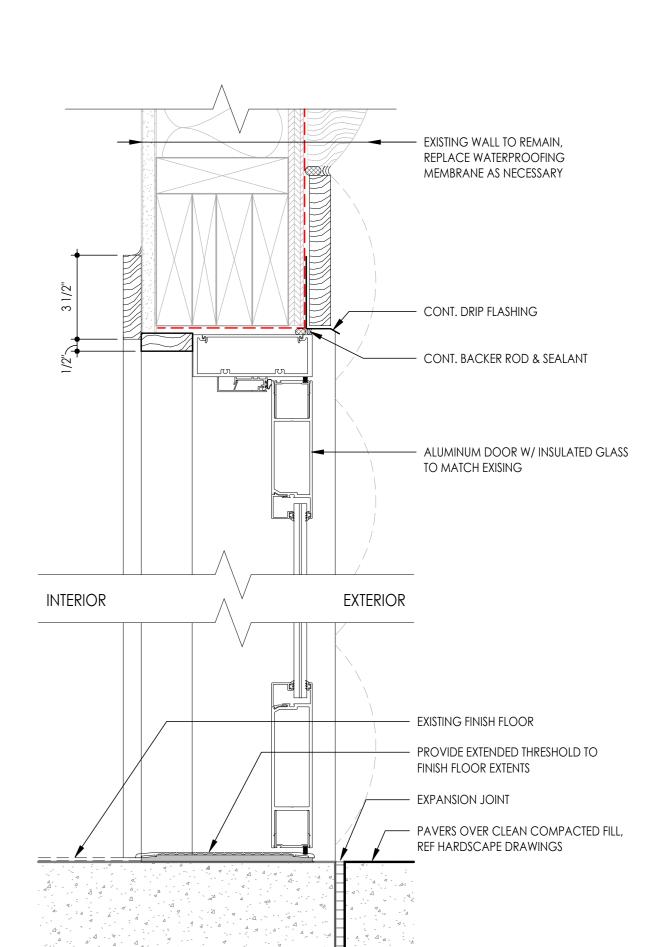
— CONT. DRIP FLASHING

— CONT. BACKER ROD & SEALANT

- WD TRIM, STAIN TO MATCH

- WD TRIM & SILL, STAIN TO MATCH

REPLACE WATERPROOFING MEMBRANE AS NECESSARY



PLAN DETAIL AT EXTERIOR DOOR & WINDOW JAMB

3" = 1'-0"

SECTION DETAIL AT EXTERIOR DOOR

3" = 1'-0"

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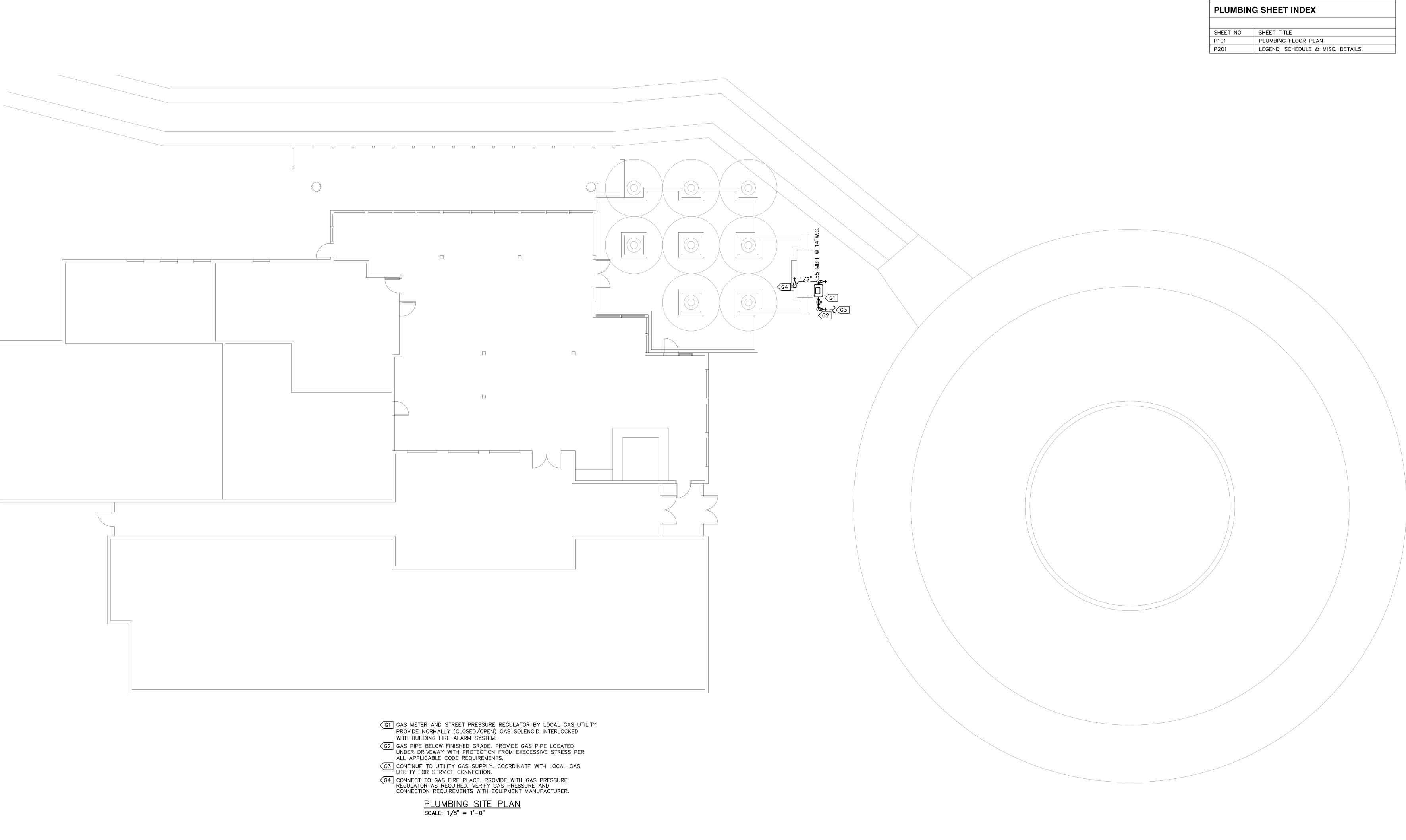
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DETAILS



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"TO THE BEST OF THE ARCHITECT'S OR ENGINEER'S KNOWLEDGE, THE PLANS AND SPECIFICATIONS COMPLY WITH THE APPLICABLE MINIMUM BUILDING CODES AND THE APPLICABLE FIRE—SAFETY STANDARDS AS DETERMINED BY THE LOCAL AUTHORITY IN ACCORDANCE WITH THIS SECTION

AND CHANPTER 633, FLORIDA STATUTES."

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DATE: 12.22.2023

DATE: 12-44

DATE: 12.22.2023

DRAWN BY: CJF

CHECKED BY: LRH

SCALE: AS NOTED

PLUMBING SITE PLAN

SHEET NUMBER

POWELL & HINKLE ENGINEERING, P.A. GALTON C. MOK PE 33192

H 1409 KINGSLEY AVENUE, BLDG 12A LANE R. HINKLE PE 48076
ORANGE PARK, FLORIDA 32073 THOMAS M. ELDER PE 56121

(904) 264-5570 FAX:(904) 278-2646 RICHARD A. MATHEWS PE 59418
DAVID R. SPELL JR. PE 54729
JAMES L. HENNESSEY PE 83241

PLUMBING SPECIFICATIONS

1. SCOPE: PROVIDE A COMPLETE PLUMBING SYSTEM AS SHOWN ON DRAWINGS AND MEETING REQUIREMENTS OF APPLICABLE STATE AND LOCAL CODES. OBTAIN ALL REQUIRED PERMITS AND CERTIFICATES.

2. GUARANTEE: PROVIDE ALL NEW MATERIALS AND EQUIPMENT, AND GUARANTEE SAME AGAINST DEFECTS FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE. AS FAR AS PRACTICAL, SIMILAR PRODUCTS SHALL BE BY ONE MFG.

3. CUTTING & PATCHING: ASSUME LIABILITY FOR CUTTING AND PATCHING. COORDINATE WITH BUILDING ENGINEER AND REVIEW EXISTING STRUCTURAL PLANS PRIOR TO ANY CUTTING OR CORE DRILLING. PROVIDE REQUIRED CHASES, SLOTS AND OPENINGS FOR REQUIRED PIPE SLEEVES THROUGH WALLS. CUT CONCRETE FLOOR SLAB WHERE REQUIRED FOR LOCATION OF UNDER FLOOR SANITARY PIPING. COMPLETE ALL BACKFILL OF EXCAVATIONS AND COMPLETE ALL CONCRETE FLOOR SLAB WORK, INCLUDING AREAS LEFT OPEN FOR FUTURE SERVICE CONNECTIONS, TO MATCH SURROUNDING FLOOR LEVEL AND FINISH.

4. FIXTURES: SHALL BE AS SCHEDULED ON THE DRAWINGS. FIXTURE TRIM AND FITTINGS SHALL BE C.P. BRASS INCLUDING PIPING SERVING FIXTURES EXPOSED BEYOND FACE OF FINISHED WALL. PROVIDE STOPS IN WATER SUPPLIES TO EACH AND EVERY FIXTURE. FIXTURE MOUNTING HEIGHT SHALL BE AS SHOWN ON THE

ARCH. DRAWINGS.

5. CONNECTIONS TO EQUIPMENT FURNISHED AND INSTALLED BY OTHERS: COMPLETE ALL ROUGH-IN AND FINAL CONNECTIONS TO LAVATORY AND SHOP EQUIPMENT FURNISHED AND INSTALLED BY OTHERS. SEE ARCHITECTURAL DRAWINGS FOR DETAILS OF EQUIPMENT AND LOCATION.

6. GAS PIPING: GAS PIPING ABOVE GRADE SHALL BE SCHEDULE 40 BLACK STEEL WITH BLACK 150 POUND MALLEABLE IRON SCREW FITTINGS. BELOW GRADE PIPING OUTSIDE BUILDING SHALL BE SCHEDULE 80 BLACK STEEL PROTECTED BY APPROVED COAL TAR SHELLAC WITH COAL TAR BASE WRAPPING. BELOW GRADE PIPING INSIDE BUILDING SHALL BE INSTALLED IN SCHEDULE 40 BLACK STEEL CONDUIT VENTED TO EXTERIOR OF BUILDING. CONDUIT SHALL BE PROTECTED BY APPROVED COAL TAR SHELLAC WITH COAL TAR BASE WRAPPING.

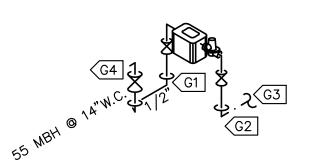
7. PIPE HANGERS: PIPE HANGERS SHALL BE GALVANIZED STEEL CLEVIS HANGERS SELECTED WITHIN THE MANUFACTURER'S PUBLISHED LOAD RATINGS AND SHALL BE AUTO-GRIP, FEE AND MASON, OR GRINNEL. HANGERS FOR COPPER PIPE SHALL BE EITHER COPPER-PLATED TYPE OR THERE SHALL BE A SHIELD OF 4 POUNDS SHEET LEAD TO COMPLETELY SURROUND THE PIPE TO PREVENT DIRECT CONTACT WITH THE HANGER. SUPPORTS FOR PIPES WITH VAPOR BARRIER TYPE COVERING SHALL NOT CONTACT THE PIPE BUT SHALL SURROUND THE UNBROKEN COVERING. PROVIDE GALVANIZED STEEL SHIELDS WITH MITERED CORNERS PROPERLY FORMED TO THE JACKET OUTSIDE DIAMETER BETWEEN HANGER CLEVISES AND THE LOWER 1/3 OF THE CIRCUMFERENCE.

8. SECONDARY PIPE SUPPORTS: MAKESHIFT, FIELD DEVISED METHODS OF PLUMBING PIPE SUPPORT, SUCH AS WITH THE USE OF SCRAP FRAMING MATERIALS, ARE NOT ALLOWED. SUPPORT AND POSITIONING OF PIPING SHALL BE BY MEANS OF ENGINEERED METHODS THAT COMPLY WITH IAPMO PS 42-96. THESE SHALL BE HUBBARD ENTERPRISES/HOLDRITE SUPPORT SYSTEMS OR OWNER-APPROVED EQUIVALENT. FOR PLENUM APPLICATIONS USE PIPE SUPPORTS THAT MEET ASTM E-84 25/50 STANDARDS, SUCH AS THE HUBBARD ENTERPRISES/HOLDRITE FLAME FIGHTER TM OR OWNER-APPROVED EQUIVALENT. FOR VERTICAL MID-SPAN SUPPORTS OF PIPING 4" AND UNDER, USE HUBBARD ENTERPRISES/HOLDRITE STOUT BRACKETS™ WITH HUBBARD ENTERPRISES/HOLDRITE STOUT CLAMPS OR TWO-HOLE PIPE CLAMPS (MSS TYPE 26).

9. PIPE SLEEVES: PROVIDE PIPE SLEEVES OR CORE BORE FOR ALL PIPES PASSING THROUGH CONCRETE OR MASONRY WALLS. SLEEVES THROUGH FLOOR SLABS OR FIRE WALLS SHALL BE GALVANIZED STEEL PIPE OF PROPER SIZE. FILL ALL SPACES BETWEEN PIPING AND SLEEVES PASSING THROUGH FIRE-RATED WALLS, FLOORS, OR CEILINGS WITH MATERIAL CAPABLE OF MAINTAINING THE FIRE-RESISTANCE RATING OF THE WALL, FLOOR OR CEILING. USE METACAULK 950GW-1 OR APPROVED EQUAL CAULKING MATERIAL FOR PVC AND CPVC PIPING.

10. ESCUTCHEONS: PROVIDE ESCUTCHEONS ON ALL FINISHED SURFACES WHERE PIPING PENETRATE. FASTEN SECURELY TO PIPE OR PIPE COVERING.

11. TESTING: TEST ALL GAS PIPING AFTER OUTLET FITTINGS ARE CONNECTED AND ENTIRE PIPING SYSTEM HAS BEEN CLEANED. PRESSURIZE THE SYSTEM WITH COMPRESSED AIR TO A PRESSURE OF 1.5 TIMES THE OPERATING PRESSURE OR 125 PSIG, WHICH EVER IS HIGHER. HOLD TEST PRESSURES FOR AT LEAST 2 HOURS. REMAKE ALL LEAKING JOINTS AND RETEST. THESE TESTS ARE MINIMUM AND ARE NOT INTENDED TO BE LIMITING WHERE ADDITIONAL TESTING METHODS ARE REQUIRED BY GOVERNING AUTHORITY. TEST EACH FIXTURE FOR SOUNDNESS, STABILITY OF SUPPORT, AND SATISFACTORY OPERATION OF ALL ITS PARTS.



- G1 GAS METER AND STREET PRESSURE REGULATOR BY LOCAL GAS UTILITY. PROVIDE NORMALLY (CLOSED/OPEN) GAS SOLENOID INTERLOCKED WITH BUILDING FIRE ALARM SYSTEM.
- G2 GAS PIPE BELOW FINISHED GRADE. PROVIDE GAS PIPE LOCATED UNDER DRIVEWAY WITH PROTECTION FROM EXECESSIVE STRESS PER ALL APPLICABLE CODE REQUIREMENTS.

G3 CONTINUE TO UTILITY GAS SUPPLY. COORDINATE WITH LOCAL GAS

- UTILITY FOR SERVICE CONNECTION. G4 CONNECT TO GAS FIRE PLACE. PROVIDE WITH GAS PRESSURE
- REGULATOR AS REQUIRED. VERIFY GAS PRESSURE AND CONNECTION REQUIREMENTS WITH EQUIPMENT MANUFACTURER.

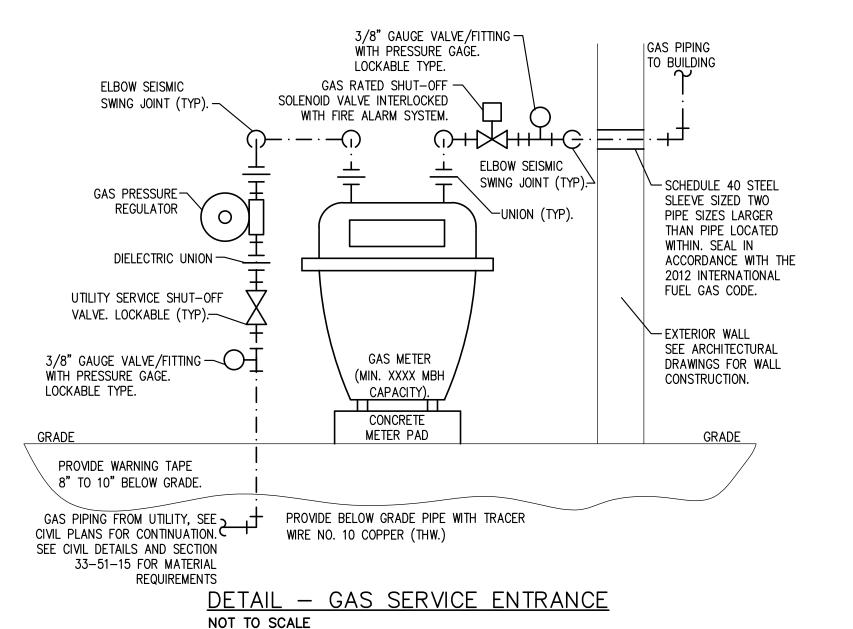
GAS RISER DIAGRAM

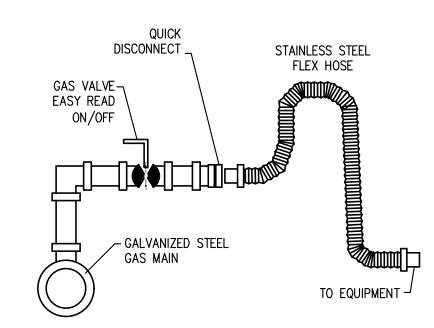
SCALE: 1/8" = 1'-0"

PLUMBING EQUIPMENT SCHEDULE

EQUIPMENT PROVIDED BY OTHER, CONTRACTOR TO PROVIED AND INSTALL ALL ACCESSORIES REQUIRED FOR A COMPLETE OPERATIONAL INSTALLATION (ie. VALVES, REGULATORS, ETC.).

	BUILDING (GAS	DEMA	AND	
MARK	FIXTURE	CONN.	MBH EACH	QTY. EACH	MBH ALL
GFP-1	GAS FIRE PLACE	3/4"	55	1	55
TOTAL ME	BH				55
REQ'D. PI	PE SIZE				1/2"
O.5 PSI (SIZED FOR 14" W.C. WITH 3" W.C. LES 402.4 OF THE 2020 FLORIDA GAS PIPE SIZED FOR A TOTAL DEVING FOR EQUIPMENT IS DETERMINE	FUEL GAS CO	ODE. ` GTH (TDL) OF	50'.	ИТҮ)
EQUIPMENT APPLIANCE DOWN TO (LINE) GA ACCORDA UTILIZATION	OT PROVIDED AS PART OF THE GANT MANUFACTURER, PLUMBING CONCE (LINE) GAS PRESSURE REGULATO MANUFACTURER REQUIRED APPLIANS PRESSURE REGULATORS SHALL INCE WITH NFPA, AND SHALL BE EON WITH AN APPROVED FACTORY INCE WITH THE MANUFACTURERS IN	TRACTOR SHORS TO REDIANCE OPERACOMPLY WITH QUIPPED WITH NSTALLED VE	IALL PROVIDE UCE GAS SUF TING PRESSUF H NFPA, SHA H AND LABEI ENT—LIMITING	AND INSTA PPLY PRESS RES. APPLIA LL BE LISTE LED FOR	SURE ANCE





EQUIPMENT GAS CONNECTION

LEGEND

-08) —)II	FLOOR DRAIN		PIPE RISERS (DROP)
	••—	FLOOR CLEANOUT		PIPE RISERS (UP)
	Q	WALL CLEANOUT	——II ——3	PIPE END (CAPPED)
_	90	TRAPPED DRAIN	s	SANITARY SEWER LINE
	J	TRAP	v	VENT LINE
INV	′. EL.	INVERT ELEVATION	J∥LVTR	VENT THRU ROOF
		COLD WATER		HOT WATER
	-	UNION	 -	WALL HYDRANT
	$\rightarrow -$	BALL VALVE (EXCEPT OTHERWISE NOTED)	S.A.	SHOCK ABSORBER
-	—	VALVE (NORMAL CLOSE)	A.P.	ACCESS PANEL
	─ \\$	PRESSURE RELIEF VALVE		EXISTING SANITARY SEWER
		EXISTING COLD WATER		EXISTING VENT
<u> </u>		EXISTING HOT WATER	-xxx	DEMOLITION
——Þ	┫—	CONTROL VALVE/REGULATOR	──	CHECK VALVE
—— Ľ	≒ —	STRAINER/FILTER	- ·-·-	GAS

PLUMBING GENERAL NOTES

SEE SPECIFICATION FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

!	2.	COORDINATE HVAC EQUIPMENT AND DUCT LOCATION WITH HVAC CONTRACTOR. SEE MECH DWGs. FOR ADDITIONAL INFORMATION.
! ! !	3.	DO NOT INSTALL PIPING ABOVE ELECTRICAL PANELS OR EQUIPMENT. COORDINATE ELECTRICAL PANEL AND EQUIPMENT LOCATION WITH ELECTRICAL CONTRACTOR.
l I	4 .	RUN ALL HORIZONTAL COLD & HOT WATER PIPING ABOVE CEILINGS UNLESS OTHERWISE NOTED.
 	5.	EXTERIOR HOSE BIBS TO BE LOCATED 18" ABOVE GRADE UNLESS OTHERWISE NOTED.
 	6. 	INSTALL ALL WORK IN A NEAT AND WORKMANLIKE MANNER, USING ONLY WORKMEN THOROUGHLY QUALIFIED IN THE TRADE OR DUTIES THEY ARE TO PERFORM. ROUGH WORK WILL BE REJECTED.
l I	7. 	MAINTAIN A MINIMUM 10' CLEARANCE BETWEEN HVAC EQUIPMENT FRESH AIR INTAKES AND SANITARY VENTS.
 	8. 	FIELD VERIFY ALL EXISTING PIPING AND PIPING CONNECTION SIZES AND LOCATIONS. EXCEPT OTHERWISE NOTED ON THE DRAWING, EXISTING CONCEALED PIPING NOT CONNECTED TO NEW PLUMBING SYSTEM OR FIXTURES SHALL BE CAPPED BEHIND FINISHED WALL OR BELOW FLOOR AND ABANDONED IN PLACE.
l I	9. 	PROPERLY CONNECT NEW PLUMBING SYSTEM AND FIXTURES TO EXISTING SYSTEM. PROVIDE NEW FITTINGS AS REQUIRED FOR PROPER CONNECTION.
 	10. 	FIELD VERIFY EXISTING BUILDING STRUCTURAL. NOTIFY GENERAL CONTRACTOR FOR RESOLUTION IF EXISTING BUILDING STRUCTURE IMPEDES PLUMBING INSTALLATION. SEE STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION AND INSTRUCTION.
 	 11. 	DOMESTIC WATER SHUT-OFF VALVES LOCATED ABOVE DRYWALL CEILINGS SHALL BE GROUPED TOGETHER TO PROVIDE ACCESS FROM SINGLE ACCESS PANELS IF POSSIBLE. PROVIDE WITH IDENTIFICATION TAG INDICATING AREAS THE VALVE CONTROLS.

LARGER PIPING SHALL BE PROVIDED WITH A CLEARANCE OF NOT LESS THAN 36" FOR RODDING. PLUMBING DEMOLITION GENERAL NOTES

CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS IN

DRAWINGS AND EXISTING CONDITIONS ARE TO BE REPORTED TO THE

THE FIELD PRIOR TO COMMENCING ANY WORK. ANY DISCREPANCIES BETWEEN

CLEARANCE OF NOT LESS THAN 18" FOR RODDING. CLEANOUTS ON 8" AND

12. COORDINATE ALL LATERAL CONNECTIONS WITH CIVIL ENGINEERING DRAWINGS,

ANY CONFLICTS TO BE RESOLVED PRIOR TO START OF CONSTRUCTION.

13. CLEANOUTS ON 6" AND SMALLER PIPING SHALL BE PROVIDED WITH A

ARCHITECT/ENGINEER IN WRITING PRIOR TO STARTING WORK ON A GIVEN ITEM AND BEFORE INCURRING ANY ADDITIONAL COST. 2. SPECIFIED DEMOLITION NOTES ARE NOT TO BE CONSIDERED ALL INCLUSIVE OR COMPLETE IN THEMSELVES. THE CONTRACTOR SHALL PROVIDE ALL DEMOLITION INCIDENTAL TO AND/OR REQUIRED BY NEW AND RENOVATED CONSTRUCTION WHETHER OR NOT SPECIFICALLY NOTED ON THE DRAWINGS AND INCLUDING, BUT NOT LIMITED TO, THE FOLLOWING: REMOVAL OF PLUMBING FIXTURES, TRIM, SUPPLIES, TRAPS, VALVES, CLEANOUTS, DRAINS, WATER HEATERS, RELATED PIPING AND ACCESSORIES THAT MIGHT REASONABLY BE REQUIRED TO BE REMOVED IN PREPARATION FOR THE INSTALLATION OF NEW CONSTRUCTION, SPECIFIED FIXTURES OR EQUIPMENT

. PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL FIELD VERIFY LOCATIONS, SIZES AND INVERT ELEVATIONS OF ALL EXISTING PLUMBING UTILITIES PERTINENT TO THE SCOPE OF WORK.

FURNISHED BY OTHERS REQUIRING PLUMBING SERVICES.

4. DEMOLITION SHALL BE PERFORMED IN SUCH A MANNER THAT WILL NOT DAMAGE ADJOINING SURFACES OR EQUIPMENT INDICATED TO REMAIN.

5. WHERE DEMOLITION WOULD AFFECT THE STRUCTURAL INTEGRITY OF THE BUILDING, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT/ENGINEER PRIOR TO PROCEEDING WITH DEMOLITION.

6. THE PLUMBING CONTRACTOR SHALL REMOVE THE EXISTING FIXTURES, RELATED PIPING AND ACCESSORIES AS NOTED. CAP AND CONCEAL ALL SANITARY, VENT AND WATER PIPING BELOW FLOOR, ABOVE CEILING AND/OR IN WALLS AS REQUIRED AND NOTED. REMOVE ALL PIPING NOT REQUIRED FOR RENOVATION AND CAP AT NEAREST ACTIVE MAIN LINE. NO PIPING SHALL BE LEFT ABANDONED. REMOVED FIXTURES AND TRIM SHALL REMAIN THE PROPERTY OF THE OWNER. VERIFY WITH THE OWNER IF REMOVED FIXTURES AND TRIM ARE TO BE REMOVED FROM THE SITE OR RETURNED TO THE BUILDING STOCK.

THE EXISTING SYSTEMS OPERATION SHALL BE MAINTAINED IN RENOVATED AND ADJACENT AREAS UNTIL THE NEW SYSTEMS ARE OPERATIONAL. CONTRACTOR SHALL INCLUDE IN HIS BID ALL COSTS ASSOCIATED WITH KEEPING THE EXISTING SYSTEMS ON LINE.

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CHECKED BY: LRH SCALE: <u>AS NOTED</u> LEGEND, **SCHEDULE &**

DRAWN BY:

DETAILS

ROBERT L. HINKLE PE 29302 POWELL & HINKLE ENGINEERING, P.A. GALTON C. MOK PE 33192 1409 KINGSLEY AVENUE, BLDG 12A LANE R. HINKLE PE 48076 ORANGE PARK, FLORIDA 32073 THOMAS M. ELDER PE 56121 (904) 264-5570 FAX:(904) 278-2646 RICHARD A. MATHEWS PE 59418 DAVID R. SPELL JR. PE 54729

JAMES L. HENNESSEY PE 83241

			LIGHTING FIXTURE SCHEDULE 1	\rangle					
М	IARK	DESCRIPTION	MANUFACTURER	VOLT	LED S	OURCE TEMP (*K)	INPUT WATTS	MTG/INSTALLATION (UNLESS INDICATED OTHERWISE)	NOTES
	L1	LED DECORATIVE STRING FIXTURES	TOKISTAR LIGHTING# EXBK-18-VIIW-S14-F	120	_	3K	1.8	POLE	2\3

⟨#⟩ NOTES:

1. THE FIXTURE CATALOG NUMBERS GIVEN MAY NOT CONTAIN ALL PARTS & PIECES REQUIRED. CONTRACTOR TO INCLUDE ALL PARTS REQUIRED FOR A FULLY FUNCTIONING FIXTURE INCLUDING (BUT NOT LIMITED TO) HOUSINGS, TRIMS, REFLECTORS, BALLAST, TRANSFORMER(S), DRIVERS, LAMPS etc... IN-ADDITON DIMMER SWITCHES SHALL BE COMPATIBLE WITH FIXTURE PROVIDED.

2. SEE MOUNTING DETAIL FOR ADDITIONAL REQUIREMENTS. 3. PROVIDE A SEPARATE PRICE FOR PROVIDING AND INSTALLING FESTOON LIGHTING AS DESCRIBED. TITLE 'FESTOON LIGHTING'. BRANCH CIRCUIT/FLUSH BOXES/CONTROL SHOULD BE INCLUDED IN BASE BID.

"TO THE BEST OF THE ARCHITECT'S OR ENGINEER'S KNOWLEDGE, THE PLANS AND SPECIFICATIONS COMPLY WITH THE APPLICABLE MINIMUM BUILDING CODES AND THE APPLICABLE FIRE-SAFETY STANDARDS AS DETERMINED BY THE LOCAL AUTHORITY IN ACCORDANCE WITH THIS SECTION AND CHANPTER 633, FLORIDA STATUTES."

ELECTRICAL SHEET INDEX

SHEET NO.	SHEET TITLE
E1.01	PARTIAL SITE PLAN- ELECTRICAL, NOTES & LEGEND
E1.02	POWER RISER, PNL SCH. SPEC AND DETAILS

ELECTRICAL LEGEND

FESTOON LIGHTS (BID ALTERNATE)

CIRCUIT/CONDUIT UNDERFLOOR/GRADE W/GROUND

CIRCUIT/ CONDUIT W/GROUND

BRANCH CIRCUIT HOMERUN W/GROUND

\$ SWITCH SINGLE POLE DUPLEX RECEPTACLE GFI/WP IN-USE ENCLOSURE

PANELBOARD (PNL)

JUNCTION BOX ▼ COMM OUTLET

igotimes ty outlet

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visual communication

Jacksonville

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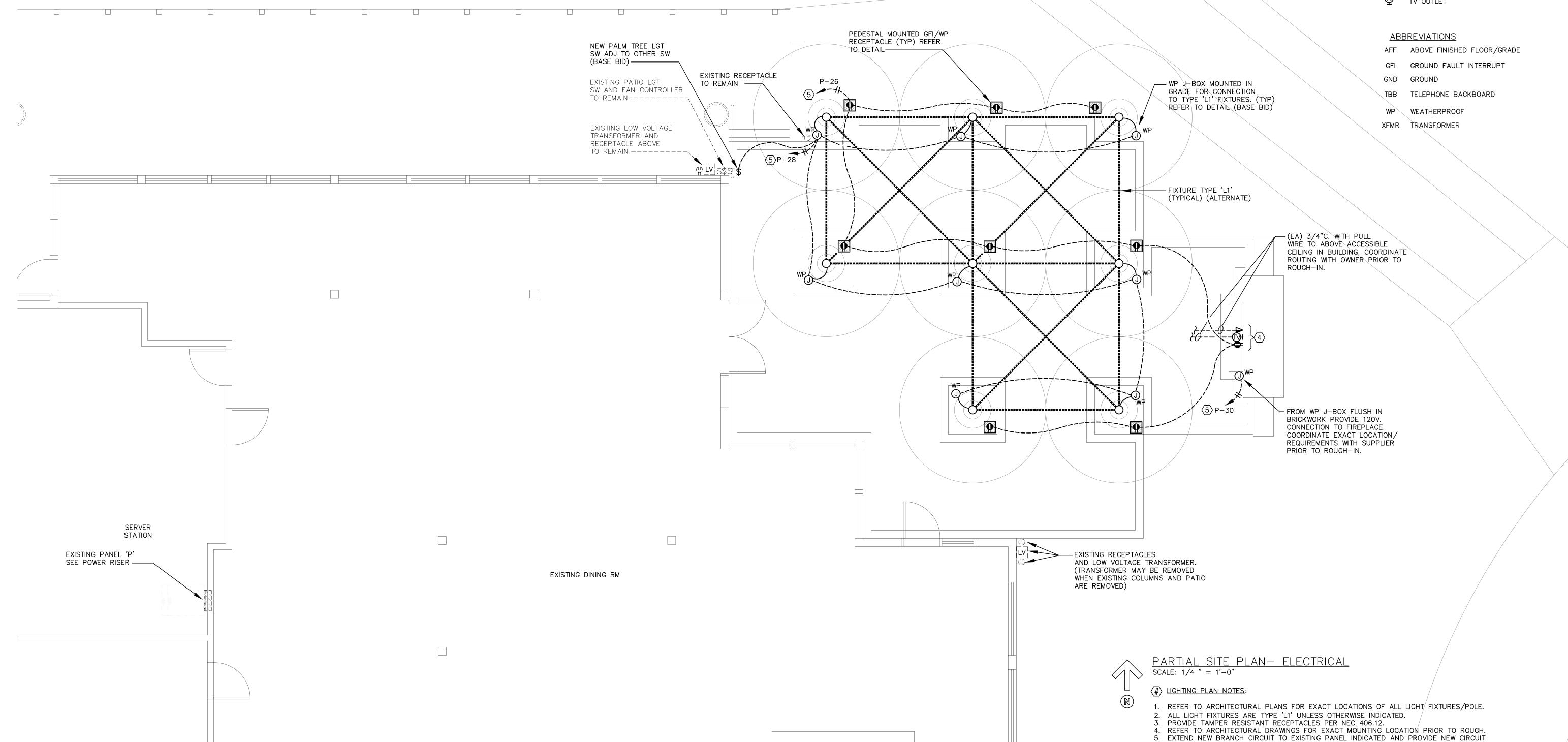
DRAWN BY: MH CHECKED BY: _____TME____ SCALE: AS NOTED

PART SITE PLAN-ELECTRICAL LEGEND & NOTES

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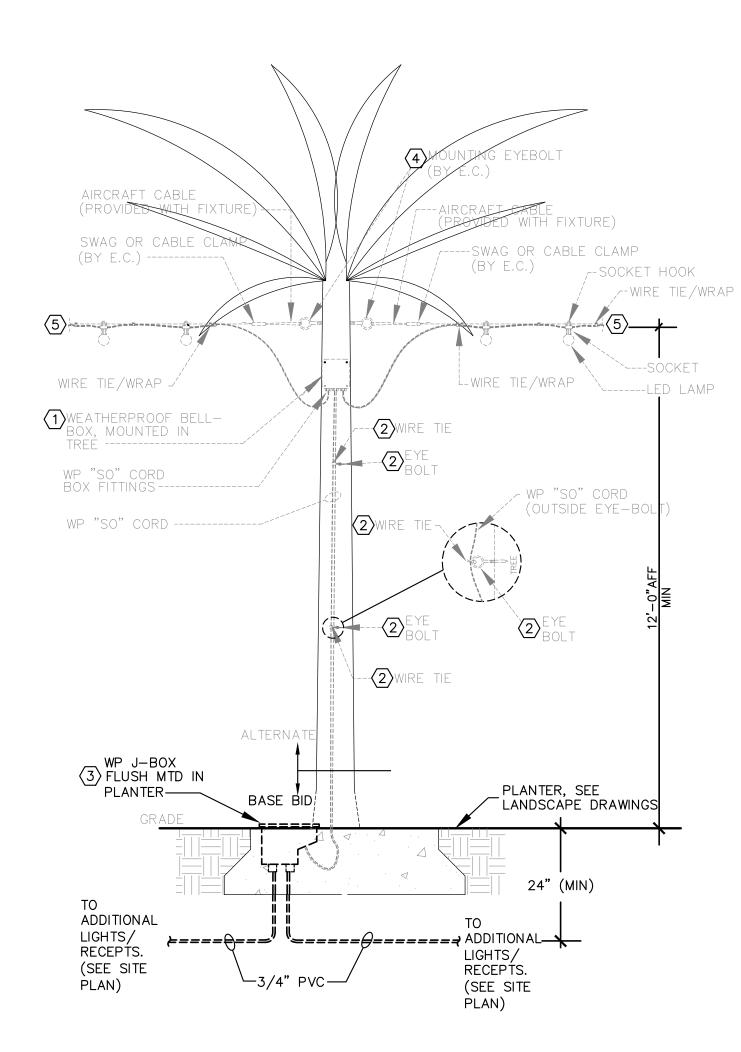
BREAKER (SIZE/POLES AS NOTE) IN AVAILABLE SPACE. MATCH EXISTING BREAKER MANUFACTURER. UP-DATE PANEL DIRECTORY UPON PROJECT COMPLETION.

3813E101



ELECTRICAL SPECIFICATION

- 1. SCOPE: PROVIDE A COMPLETE ELECTRICAL SYSTEM AS SHOWN AND MEET THE REQUIREMENTS OF APPLICABLE STATE AND LOCAL CODES INCLUDING BUT NOT LIMITED TO CURRENT VERSIONS OF THE FLORIDA BUILDING CODE, AND THE NATIONAL ELECTRICAL CODE (NEC). OBTAIN AND PAY FOR ALL PERMITS, INSPECTIONS AND CONNECTIONS NECESSARY FOR THIS WORK.
- 2. SITE INSPECTION: VISIT AND THOROUGHLY INSPECT SITE BEFORE SUBMITTING BID. ASSUME RESPONSIBILITY FOR MEETING ALL EXISTING SITE CONDITIONS AFFECTING THE WORK
- 3. GUARANTEE: PROVIDE ALL NEW MATERIALS AND EQUIPMENT, AND GUARANTEE SAME FOR ONE YEAR FROM DATE OF ACCEPTANCE.
- 4. SUBMITTALS: SUBMIT SHOP DRAWINGS, CATALOG SHEETS, OR OTHER DESCRIPTIVE DATA WITH SUFFICIENT INFORMATION TO ESTABLISH DESIGN, QUALITY AND PERFORMANCE. MANUFACTURER CATALOG SHEETS SUBMITTED WITHOUT SPECIFIC MODEL NUMBERS INDICATED WILL BE REJECTED. DATA SHALL DESCRIBE APPARATUS, EQUIPMENT, PANELS, FIXTURES, AND OTHER ITEMS REQUIRING DESCRIPTIVE LITERATURE. SUBMITTALS SHALL INCLUDE THE FOLLOWING:
- A. LIGHT FIXTURES B. PANELBOARDS C. SAFETY SWITCHES D. TRANSFORMERS E. MOTOR STARTERS F. WIRING DEVICES
- 5. INSTANTANEOUS TRIP SETTING SHALL BE NOT GREATER THAN 25MS. CIRCUIT BREAKERS SHALL BE MOLDED CASE, WITH QUICK-MAKE AND QUICK-BREAK ACTION FOR BOTH MANUAL AND AUTOMATIC OPERATION, WITH THERMAL MAGNETIC TRIP ELEMENTS. SAFETY SWITCHES SHALL BE QUICK-MAKE QUICK-BREAK TYPE, IN GENERAL PURPOSE OR WEATHER PROOF ENCLOSURE. PROVIDE PROPERLY SIZED FUSES WHERE INDICATED ON THE DRAWINGS. (MATCH EXISTING)
- 6. WIRING DEVICES: WALL SWITCHES SHALL BE QUIET AC TYPE, 120/277V, 20A, COLOR AS DIRECTED BY ARCHITECT. RECEPTACLES SHALL BE DUPLEX, 120V, 20A, 3 WIRE GROUNDING TYPE, COLOR AS DIRECTED BY ARCHITECT. WALL PLATES FOR SWITCHES, RECEPTACLES, AND TELEPHONE/DATA OUTLETS SHALL BE PLASTIC, COLOR AS DIRECTED BY ARCHITECT. DUPLEX RECEPTACLE TO BE INSTALL WITH THE GROUND ON BOTTOM.
- 7. LIGHTING FIXTURES: LIGHTING FIXTURES SHALL BE FURNISHED AS SCHEDULED AND SHALL BE FACTORY WIRED, ASSEMBLED WITH FACTORY INSTALLED OPTIONS AS SPECIFIED. LOW VOLTAGE (24V) FIXTURES SHALL BE PROVIDED WITH MANUFACTURER RECOMMENDED LINE-VOLTAGE DRIVER(S) AS REQUIRED TO MINIMIZE DRIVER QUANTITIES AND MAXIMUM FIXTURE (RUN) LENGTH(S). DRIVERS SHALL BE MATCHED WITH CONTROL METHOD SHOWN, WHERE EMERGENCY LIGHT FIXTURES ARE INDICATED, FIXTURES SHALL BE PROVIDED WITH A UL LISTED, FACTORY INSTALLED BATTERY/INVERTER AS REQUIRED TO FUNCTION AS AN EMERGENCY LIGHTING SOURCE (UNIT EQUIPMENT) AS REQUIRED BY CODE.
- 8. ELECTRICAL CONDUIT: INSTALL ALL WIRING IN MINIMUM SIZE 1/2" CONDUIT. EMT SHALL BE USED GENERALLY FOR INTERIOR WIRING, M/C CABLE MAY BE USED AS PERMITTED BY CODE, HOWEVER IN ALL CASES WHERE MC IS USED IT SHALL BE PROVIDED WITH ONE (1) ADDITIONAL CONDUCTOR (CAPPED AT BOTH ENDS) FOR USE AS A SPARE. FLEXIBLE STEEL CONDUIT SHALL BE USED FOR FINAL CONNECTION TO ALL MOTORIZED EQUIPMENT. UNDERGROUND CONDUIT SHALL BE PVC.
- 9. OUTLET BOXES: OUTLET BOXES FOR SWITCHES, RECEPTACLES AND TELEPHONE/DATA OUTLETS IN FINISHED WALLS SHALL BE STANDARD GANG TYPE (1-1/2" DEEP) WITH COVERS SIZED FOR BOX. WALL SWITCH OUTLETS SHALL BE FLUSH MOUNTED 48 INCHES ABOVE FLOOR TO TOP. RECEPTACLE AND TELEPHONE/DATA OUTLET BOXES SHALL BE FLUSH MOUNTED 15 INCHES ABOVE FLOOR TO BOTTOM, UNLESS OTHERWISE NOTED.
- 10. WIRE AND CABLE: ALL WIRING SHALL BE COPPER WITH THHN OR XHHW INSULATION. WIRING SUBJECTED TO ELEVATED TEMPERATURES SHALL BE DERATED AS REQUIRED BY THE NEC. WIRE SIZES NO. 6 AND LARGER SHALL BE STRANDED.
- 11. BRANCH CIRCUITS: INSTALL ALL WIRING IN CONDUIT AS SHOWN. NO SMALLER THAN NO. 12 SHALL BE USED FOR ANY BRANCH CIRCUIT. WIRING FOR MOTORS, HEATING AND OTHER MISCELLANEOUS EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE DRAWINGS. ALTHOUGH NOT SHOWN AND NOT REQUIRED BY CODE, ALL BRANCH CIRCUITS SHALL BE PROVIDED WITH A PROPERLY SIZED
- 12. TELEPHONE/DATA CONDUIT SYSTEM: PROVIDE EMPTY CONDUITS, OUTLETS AND BACKBOARDS AS SHOWN. INSTALL PULL WIRE IN EACH CONDUIT. PROVIDE EACH OUTLET WITH BLANK COVER PLATE.
- 13. TESTING AND MARKING: COMPLETELY TEST AND MARK ALL WIRING AND EQUIPMENT INSTALLED AND LEAVE THE INSTALLATION IN PERFECT WORKING ORDER.



FESTOON/STRING LIGHT MOUNTING DETAIL NO SCALE

$\langle \# \rangle$ DETAIL NOTES:

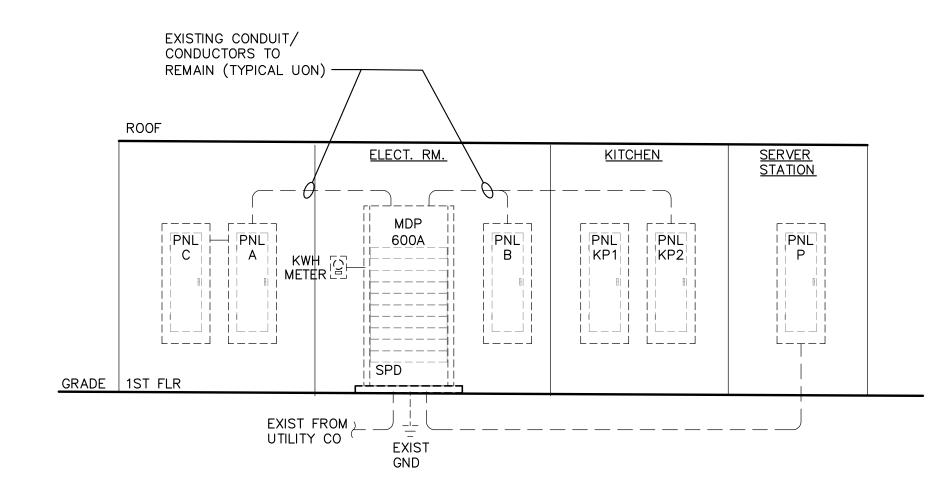
- 1. PROVIDE STAINLESS STEEL, STAND OFF TYPE, HANGER BOLTS TO ATTACH J-BOX TO TREE. <u>CAST LIGHTING CATALOG #CTREEH1</u> OR APPROVED EQUAL. NO OTHER SCREW FINISHES OR MATERIALS IN CONTACT WITH THE TREE WILL BE ALLOWED. MOUNTING J-BOX DIRECTLY TO THE TREE. USING TIE STRAPS AROUND
- THE TREE SHALL NOT BE ALLOWED. (ALTERNATE) 2. CORD SHALL BE SECURED TO TREE USING STAINLESS STEEL EYE BOLTS SCREWED DIRECTLY INTO TREE. SECURE CORD TO OUTSIDE OF EYE BOLTS USING BLACK, UV STABILIZED, TIE STRAPS. DO NOT RUN CORD THROUGH EYE BOLTS AS FUTURE TREE GROWTH WILL DAMAGE CORDS. WHERE POSSIBLE, ROUTE ALL CONDUITS WHERE IT IS LEAST VIEWABLE FROM PUBLIC (ALTERNATE).
- 3. (BASE BID) WP J-BOX FLUSH MOUNTED IN PLANTER. CONTRACTOR SHALL HAND DIG AND STAY CLEAR OF EXISTING TREE ROOTS. <u>DO NOT CUT ROOTS.</u>
 COORDINATE WITH TREE SUPPLIER AND LANDSCAPE ARCHITECT PRIOR TO ROUGH-IN.
- 4. STAINLESS STEEL EYEBOLT SCREWED DIRECTLY INTO TREE, ALL HOLES ARE TO BE PRE-DRILLED. COORDINATE ENTIRE INSTALLATION WITH LANDSCAPE ARCHITECT AND TREE SUPPLIER PRIOR TO ANY WORK. FIXTURE (CONDUCTORS) CAN NOT BE SUPPORTED BY TREE PER NEC 225.26. (ALTERNATE)

5. REFER TO SITE PLAN FOR STRING LIGHT LENGTHS AND SPECIFICATIONS. PRIOR TO ANY WORK, SUBMIT ALL MOUNTING HARDWARE TO TREE SUPPLIER / ARBORIST FOR APPROVAL TO INSURE HARDWARE IS COMPATIBLE WITH TREES AND WILL NOT HARM THE TREES IN ANYWAY. SUPPLIER/ARBORIST TO APPROVE ALL HARDWARE IN WRITING PRIOR TO ANY WORK. (ALTERNATE)

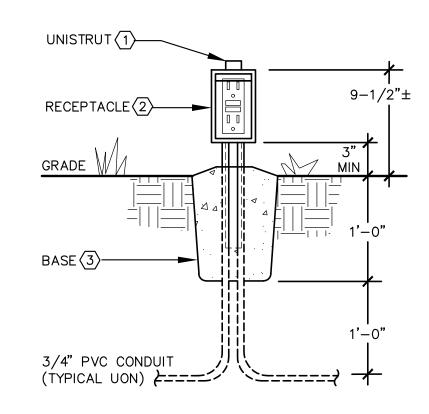
① PANEL— P			_USH STING			D	208Y/1 22K Al (, 3			125 PANEL				
SERVING	AWG SIZE	KVA LOAD	АМР	СКТ	7	PH/ A E	ASE 3 C	СКТ	АМР	KVA LOAD	AWG SIZE		SE	RVING		
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SPACE ONLY	-	_	_	29	<u> </u>		- -	30	20	0.1	12	PATIO	FIRE	PLACE	CONTRO	OL

PANEL SCHEDULE(S) NOTES:

1. EXISTING GE PANEL TO REMAIN. 2. PROVIDE (GFI) TYPE BREAKER.



EXISTING POWER RISER



NO SCALE # POWER POST DETAIL NOTES

- 1. PROVIDE GALVANIZED UNISTRUT DIRECTLY MOUNTED IN CONCRETE BASE FOR RECEPTACLE. SEE SITE PLAN FOR EXACT
- MOUNTING LOCATION. 2. PROVIDE MARINE GRADE, SINGLE-GANG JBOX MOUNTED TO UNISTRUT WITH DUPLEX GFI RECEPTACLE (NO DAISY CHAIN) AND WEATHER PROTECTED COVER (HUBBELL CATALOG
- #RW51040 OR APPROVED EQUAL). 3. PROVIDE SLOPED 3000psi CONCRETE BASE TO DRAIN WATER AWAY FROM POST. MIX CONCRETE WITH COLOR PIGMENT TO
- MATCH LANDSCAPE. 4. LOCATE PER SITE PLANS, SEE E101

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ISSUE DATES DESCRIPTION THIS DRAWING IS AN INSTRUMENT OF SERVICE AND THE PROPERTY OF ELM, NC. AND SHALL REMAIN THEIR PROPERTY. THE USE OF THIS DRAWING SHALL BE

RESTRUCTED TO THE ORIGINAL SITE FOR WHICH IT IS PREPARED, AND PUBLILCATION THEREOF IS EXPRESSLY LIMITED TO SUCH USE

CHECKED BY: _____TME SCALE: <u>AS NOTED</u> **POWER RISER** PANEL SCH.

DRAWN BY:

SPECIFICATIONS AND DETAILS SHEET NUMBER

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FUTURE LAND-USE MAP

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ZONING MAP

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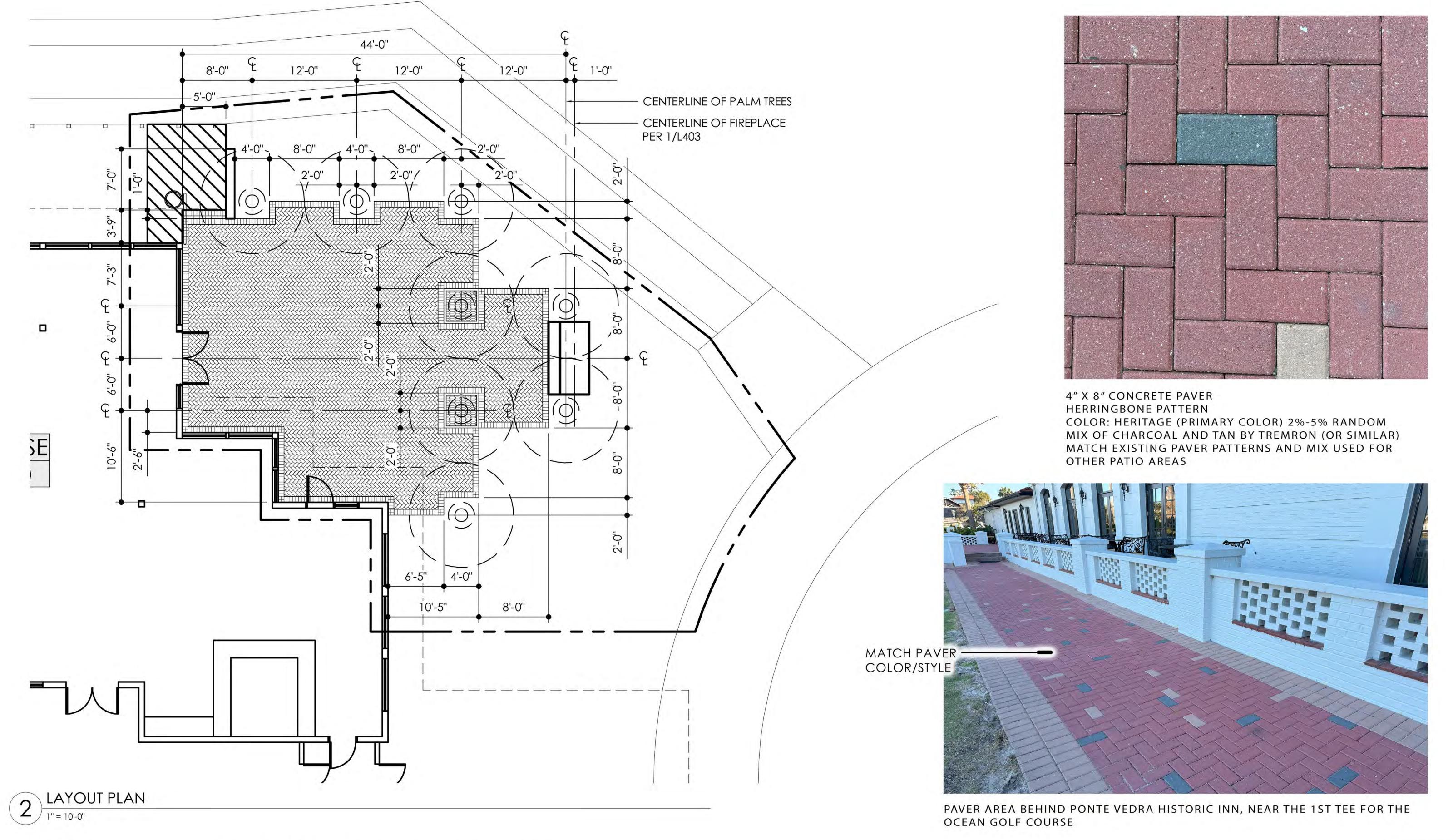
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AERIAL MAP

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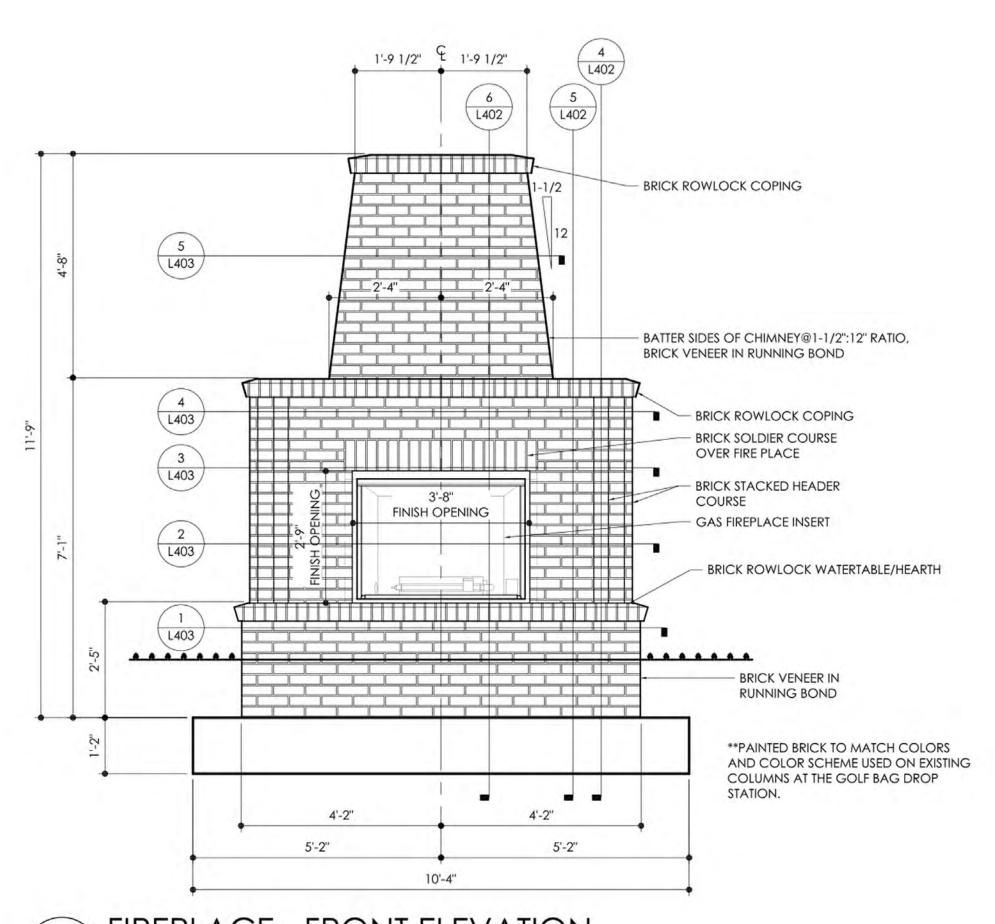
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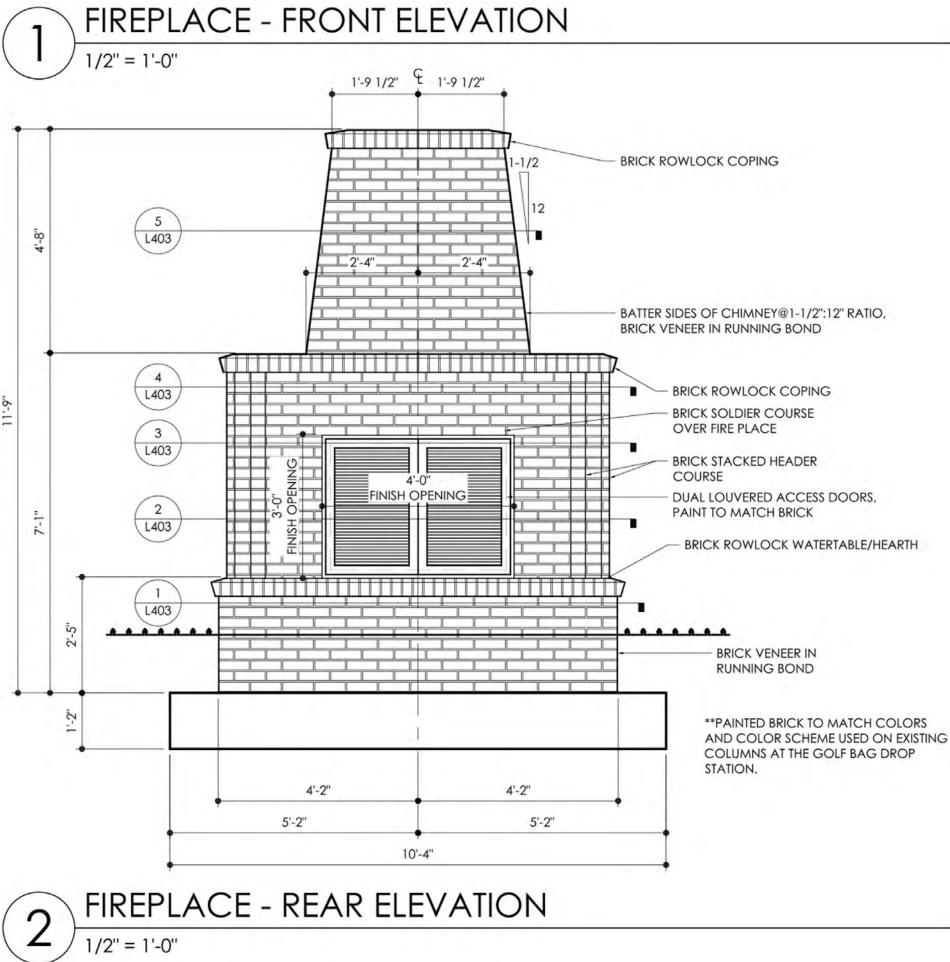


GOLF CLUB OUTDOOR BAR RENOVATION

Proposed Materials

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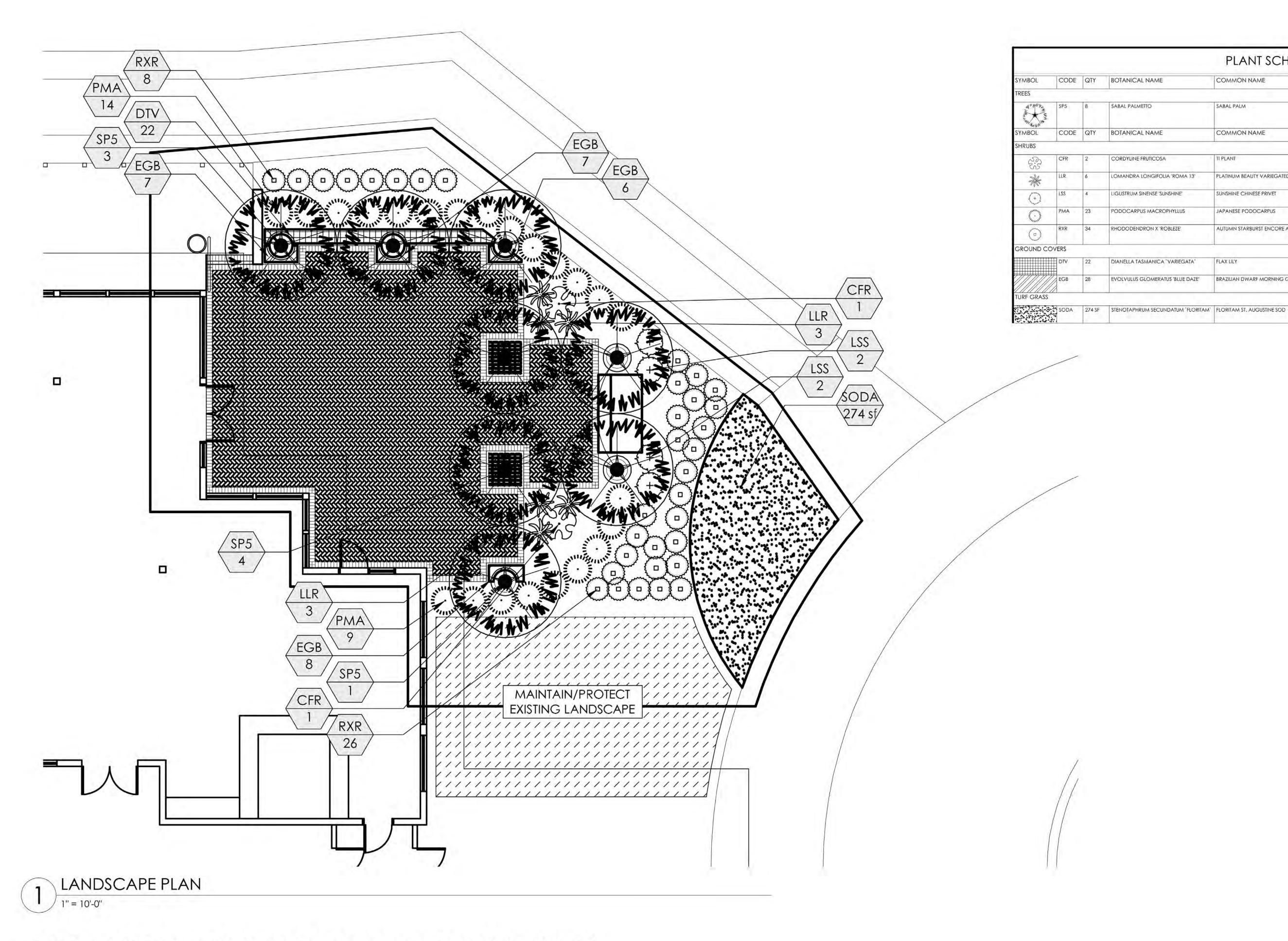
FIREPLACE PAINT TO MATCH EXISTING PAINT COLOR SCHEME FOR GOLF BAG DROP COLUMNS. CURRENTLY WHITE OR OFF-WHITE. COLOR TO BE MATCHED BY CONTRACTOR AT TIME OF PAINTING.



ADD ALTERNATE PATIO AWNING REPLACEMENT.

GOLF CLUB OUTDOOR BAR RENOVATION







Proposed Materials

PLANT SCHEDULE

PLATINUM BEAUTY VARIEGATED MAT RUSH NO

COMMON NAME

COMMON NAME

SUNSHINE CHINESE PRIVET

JAPANESE PODOCARPUS

AUTUMN STARBURST ENCORE AZALEA

BRAZILIAN DWARF MORNING GLORY

SABAL PALM

NATIVE SHADE CANOPY REMARKS

NATIVE SHADE CANOPY REMARKS

16' C.T. HEIGHT, ALL TRUNKS TO BE STRAIGHT,

36" HEIGHT, 18"-24" SPREAD, 7 GAL, 42" OC

18" - 21" HEIGHT AND SPREAD, 3 GAL, 36" OC

18" - 24" HEIGHT AND SPREAD, 3 GAL, 36" OC

30" - 36" HEIGHT, 24" SPREAD MIN, 7 GAL, 36" OC

18" X 18" HEIGHT AND SPREAD, 3 GAL, 30" OC. DWARF VARIETY OF REBLOOMING AZALEA, MATURE SIZE 3" - 4" HEIGHT AND SPREAD

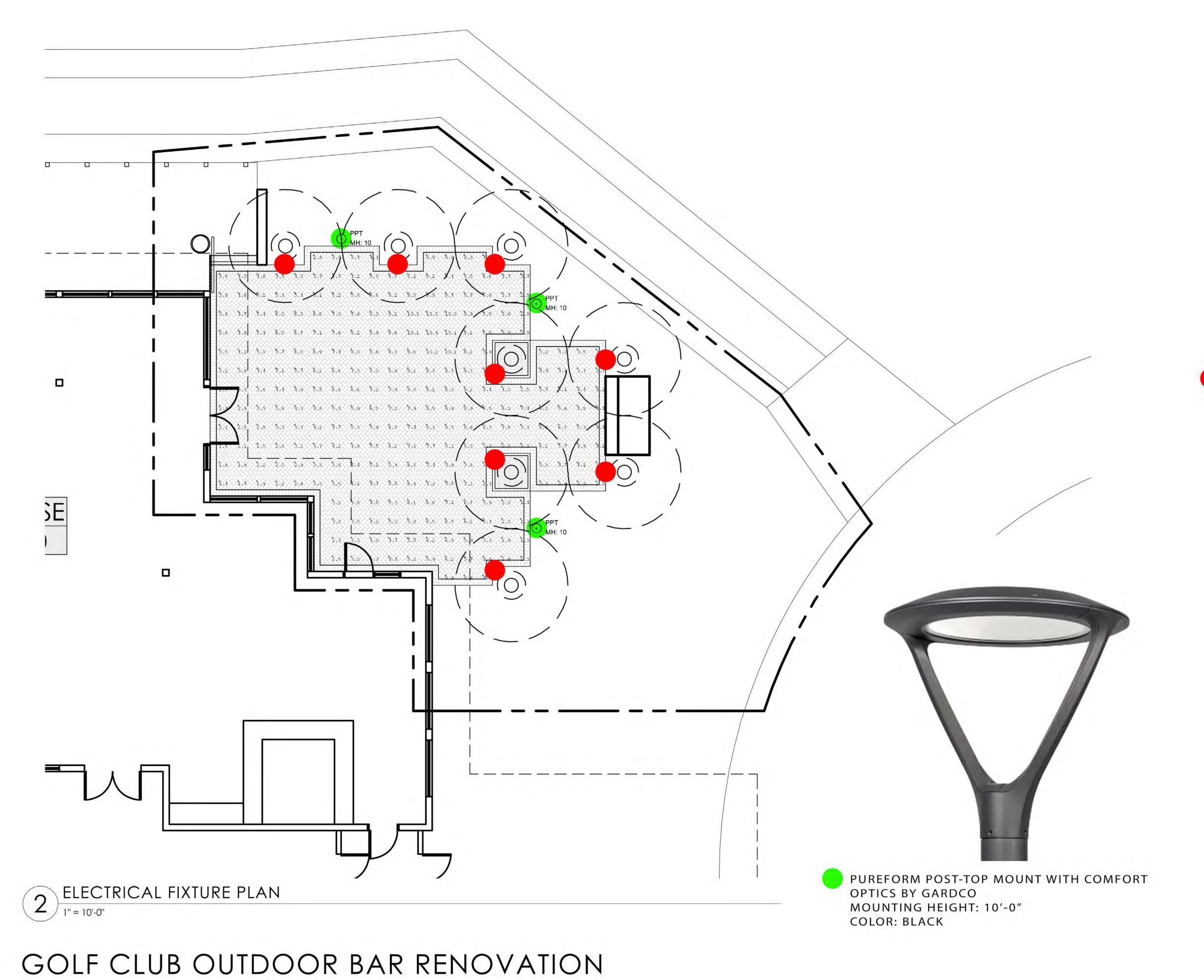
14" - 18" HEIGHT, FULL PLANT, 1 GAL, 15" OC

4" - 6" HEIGHT AND SPREAD, LINER, 9" OC

SOD - SEE SPECS

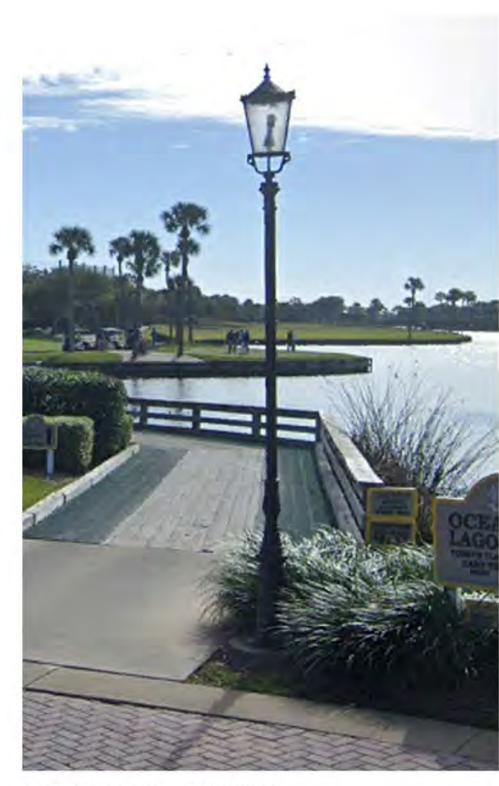
MATCHED HEADS

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BL9 FLEXSCAPE LED BY HADCO COLOR: BLACK



ALTERNATE FIXTURE MATCH EXISTING ACORN-STYLE FIXTURE MOUNTING HEIGHT: 10'-0" COLOR: MATCH EXISTING

Proposed Materials



April 10, 2024



GOLF CLUB OUTDOOR BAR RENOVATION

Proposed Materials





GOLF CLUB OUTDOOR BAR RENOVATION

Proposed Materials

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