Second Coat	ProMar 200 Zero VOC Flat B30-2600
Third Coat	ProMar 200 Zero VOC Flat B30-2600

b. Low Sheen – Acrylic

First Coat	ProMar 400 Zero VOC Primer B28W4600
Second Coat	ProMar 200 Zero VOC Low Sheen B24-2600
Third Coat	ProMar 200 Zero VOC Low Sheen B24-2600

c. Eggshell – Acrylic

First Coat	ProMar 400 Zero VOC Primer B28W4600
Second Coat	ProMar 200 Zero VOC Eg-shel B20-2600
Third Coat	ProMar 200 Zero VOC Eg-shel B20-2600

d. Semi-Gloss - Acrylic

First Coat	ProMar 400 Zero VOC Primer B28W4600
Second Coat	ProMar 200 Zero VOC Semigloss B31-2600
Third Coat	ProMar 200 Zero VOC Semigloss B31-2600

e. Gloss – Acrylic

First Coat	ProMar 400 Zero VOC Primer B28W4600
Second Coat	Sologloss Acrylic Latex Gloss A77 Series
Third Coat	Sologloss Acrylic Latex Gloss A77 Series

f. Gloss– Industrial High Performance – Waterborne Epoxy

First Coat	ProMar 200 Zero VOC Primer B28W2600
Second Coat	WB Catalyzed Epoxy Gloss B73 Series
Third Coat	WB Catalyzed Epoxy Gloss B73 Series

g. High Gloss – Industrial High Performance – Waterborne Epoxy/Urethane

First Coat	Macropoxy 646-100 B58 Series
Second Coat	High Solids Polyurethane 100 Gloss B65 Series
Third Coat	High Solids Polyurethane 100 Gloss B65 Series

2. Concrete & Plaster:

a. Flat – Acrylic Copolymer

First Coat	Epoxy Masonry Tilt Primer B42WW49
Second Coat	ProMar 200 Zero VOC Flat B30-2600
Third Coat	ProMar 200 Zero VOC Flat B30-2600

b. Low Sheen – Acrylic Copolymer

First Coat	Epoxy Masonry Tilt Primer B42WW49
Second Coat	ProMar 200 Zero VOC Low Sheen B24-2600
Third Coat	ProMar 200 Zero VOC Low Sheen B24-2600

c. Eggshell –Acrylic Copolymer

First Coat	Epoxy Masonry Tilt Primer B42WW49
Second Coat	ProMar 200 Zero VOC Eg-shel B20-2600
Third Coat	ProMar 200 Zero VOC Eg-shel B20-2600

d. Semi-Gloss –Acrylic Copolymer

First Coat	Epoxy Masonry Tilt Primer B42WW49
Second Coat	ProMar 200 Zero VOC Semigloss B31-2600
Third Coat	ProMar 200 Zero VOC Semigloss B31-2600

e. Gloss – 100% Acrylic

First Coat	Epoxy Masonry Tilt Primer B42WW49

Second Coat	Sologloss Acrylic Latex Gloss A77 Series
Third Coat	Sologloss Acrylic Latex Gloss A77 Series

f. Gloss – Industrial High Performance - Waterborne Epoxy

First Coat	Epoxy Masonry Tilt Primer B42WW49
Second Coat	WB Catalyzed Epoxy Gloss B73 Series
Third Coat	WB Catalyzed Epoxy Gloss B73 Series

g. High Gloss- Industrial High Performance - Epoxy/Urethane

First Coat	Macropoxy 646-100 B58 Series
Second Coat	High Solids Polyurethane 100 Gloss B65 Series
Third Coat	High Solids Polyurethane 100 Gloss B65 Series

3. Brick

a. Flat – Acrylic Copolymer

First Coat	Epoxy Masonry Tilt Primer B42WW49
Second Coat	ProMar 200 Zero VOC Flat B30-2600
Third Coat	ProMar 200 Zero VOC Flat B30-2600

b. Low Sheen – Acrylic Copolymer

First Coat	Epoxy Masonry Tilt Primer B42WW49
Second Coat	ProMar 200 Zero VOC Low Sheen B24-2600
Third Coat	ProMar 200 Zero VOC Low Sheen B24-2600

c. Eggshell –Acrylic Copolymer

First Coat	Epoxy Masonry Tilt Primer B42WW49
Second Coat	ProMar 200 Zero VOC Eg-shel B20-2600
Third Coat	ProMar 200 Zero VOC Eg-shel B20-2600

d. Semi-Gloss –Acrylic Copolymer

First Coat	Epoxy Masonry Tilt Primer B42WW49
Second Coat	ProMar 200 Zero VOC Semigloss B31-2600
Third Coat	ProMar 200 Zero VOC Semigloss B31-2600

e. Gloss – 100% Acrylic

First Coat	Epoxy Masonry Tilt Primer B42WW49
Second Coat	Sologloss Acrylic Latex Gloss A77 Series
Third Coat	Sologloss Acrylic Latex Gloss A77 Series

f. Gloss – Industrial High Performance - Waterborne Epoxy

First Coat	Epoxy Masonry Tilt Primer B42WW49
Second Coat	WB Catalyzed Epoxy Gloss B73 Series
Third Coat	WB Catalyzed Epoxy Gloss B73 Series

g. High Gloss- Industrial High Performance - Epoxy/Urethane

First Coat	Macropoxy 646-100 B58 Series
Second Coat	High Solids Polyurethane 100 Gloss B65 Series
Third Coat	High Solids Polyurethane 100 Gloss B65 Series

4. Concrete Block

a. Flat – Acrylic Copolymer

First Coat	PrepRite Block Filler B25W25
Second Coat	ProMar 200 Zero VOC Flat B30-2600
Third Coat	ProMar 200 Zero VOC Flat B30-2600

b. Low Sheen – Acrylic Copolymer

First Coat	PrepRite Block Filler B25W25
Second Coat	ProMar 200 Zero VOC Low Sheen B24-2600
Third Coat	ProMar 200 Zero VOC Low Sheen B24-2600

c. Eggshell –Acrylic Copolymer

First Coat	PrepRite Block Filler B25W25
Second Coat	ProMar 200 Zero VOC Eg-shel B20-2600
Third Coat	ProMar 200 Zero VOC Eg-shel B20-2600

d. Semi-Gloss –Acrylic Copolymer

First Coat	PrepRite Block Filler B25W25
Second Coat	ProMar 200 Zero VOC Semigloss B31-2600
Third Coat	ProMar 200 Zero VOC Semigloss B31-2600

e. Gloss – 100% Acrylic

First Coat	PrepRite Block Filler B25W25
Second Coat	Sologloss Acrylic Latex Gloss A77 Series
Third Coat	Sologloss Acrylic Latex Gloss A77 Series

f. Gloss – Industrial High Performance - Waterborne Epoxy

First Coat	PrepRite Block Filler B25W25
Second Coat	WB Catalyzed Epoxy Gloss B73 Series
Third Coat	WB Catalyzed Epoxy Gloss B73 Series

g. High Gloss- Industrial High Performance – Acrylic/Urethane

First Coat	Heavy Duty Block Filler B42W46
Second Coat	Macropoxy 646-100 B58 Series
Third Coat	High Solids Polyurethane 100 Gloss B65 Series

5. Ferrous Metal

a. Flat – Acrylic Copolymer

First Coat	ProCryl Universal Acrylic Metal Primer B66-310
Second Coat	ProMar 200 Zero VOC Flat B30-2600
Third Coat	ProMar 200 Zero VOC Flat B30-2600

b. Low Sheen –Acrylic Copolymer

First Coat	ProCryl Universal Acrylic Metal Primer B66-310
Second Coat	ProMar 200 Zero VOC Low Sheen B24-2600
Third Coat	ProMar 200 Zero VOC Low Sheen B24-2600

c. Eggshell –Acrylic Copolymer

First Coat	ProCryl Universal Acrylic Metal Primer B66-310
Second Coat	ProMar 200 Zero VOC Eg-shel B20-2600
Third Coat	ProMar 200 Zero VOC Eg-shel B20-2600

d. Semi-Gloss – Acylic Primer/ Acrylic Copolymer

First Coat	ProCryl Universal Acrylic Metal Primer B66-310
Second Coat	ProMar 200 Zero VOC Semigloss B31-2600
Third Coat	ProMar 200 Zero VOC Semigloss B31-2600

e. Semi-Gloss –Rust Preventative Acrylic

First Coat	ProCryl Universal Acrylic Metal Primer B66-310
Second Coat	ProIndustrial Acrylic SemiGloss
Third Coat	ProIndustrial Acrylic SemiGloss

f. Gloss – Acrylic Primer /100% Acrylic

First Coat	ProCryl Universal Acrylic Metal Primer B66-310
Second Coat	Solo Acrylic Latex Gloss A77 Series
Third Coat	Solo Acrylic Latex Gloss A77 Series

g. Gloss –Rust Preventative Acrylic

First Coat	ProCryl Universal Acrylic Metal Primer B66-310
Second Coat	ProIndustrial Acrylic Gloss
Third Coat	ProIndustrial Acrylic Gloss

h. Gloss – Industrial High Performance - Waterborne Epoxy

First Coat	ProCryl Universal Acrylic Metal Primer B66-310
Second Coat	WB Catalyzed Epoxy Gloss B73 Series
Third Coat	WB Catalyzed Epoxy Gloss B73 Series

i. High Gloss – Industrial High Performance - Epoxy/Urethane

First Coat	Macropoxy 646-100 B58 Series
Second Coat	High Solids Polyurethane 100 Gloss B65 Series
Third Coat	High Solids Polyurethane 100 Gloss B65 Series

6. Wood – Paint Finish

a. Flat – Acrylic Copolymer

First Coat	PrepRite ProBlock Primer B51W8020
Second Coat	ProMar 200 Zero VOC Flat B30-2600
Third Coat	ProMar 200 Zero VOC Flat B30-2600

b. Low Sheen – Acrylic Copolymer

First Coat	PrepRite ProBlock Primer B51W8020
Second Coat	ProMar 200 Zero VOC Low Sheen B24-2600
Third Coat	ProMar 200 Zero VOC Low Sheen B24-2600

c. Eggshell – Acrylic Copolymer

First Coat	PrepRite ProBlock Primer B51W8020
Second Coat	ProMar 200 Zero VOC Eg-shel B20-2600
Third Coat	ProMar 200 Zero VOC Eg-shel B20-2600

d. Semi-Gloss – 100% Acrylic

First Coat	PrepRite ProBlock Primer B51W20
Second Coat	Solo Acrylic Latex Semigloss A76 Series
Third Coat	Solo Acrylic Latex Semigloss A76 Series

e. Semi-Gloss – Alkyd – Class A Fire Retardant

First Coat	Please contact your Sherwin-Williams representative for
Second Coat	fire retardant wood finish information.
Third Coat	

f. Gloss – 100% Acrylic

First Coat	PrepRite ProBlock Primer B51W8020
Second Coat	Solo Acrylic Latex Gloss A77 Series
Third Coat	Solo Acrylic Latex Gloss A77 Series

7. Wood – Stain & Lacquer
(VOC Rule in SCAQMD is 275 g/L for field-applied coatings)

a. Flat

First Coat	SherWood BAC Wiping Stain S64
Filler	Jasco Paste Wood Filler
Second Coat	KemAqua Lacquer Sanding Sealer T65F520

	Third Coat	KemAqua Dull Rub Clear Lacquer T75F528
	Fourth Coat	KemAqua Dull Rub Clear Lacquer T75F528
b.	Semi-Gloss	
	First Coat	SherWood BAC Wiping Stain S64
	Filler	Jasco Paste Wood Filler
	Second Coat	KemAqua Lacquer Sanding Sealer T65F520
	Third Coat	KemAqua Semigloss Clear Lacquer T75F526
	Fourth Coat	KemAqua Semigloss Clear Lacquer T75F526
c.	Gloss	
	First Coat	SherWood BAC Wiping Stain S64
	Filler	Jasco Paste Wood Filler
	Second Coat	KemAqua Lacquer Sanding Sealer T65F520
	Third Coat	KemAqua Gloss Clear Lacquer T75C525
	Fourth Coat	KemAqua Gloss Clear Lacquer T75C525

*****END OF SECTION*****

SECTION 10100

PROJECTION SCREENS

PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS

Division 0, Contract Requirements and Division 1, General Conditions apply to this Section.

1.02 SCOPE OF WORK

A. Projection Screen.

B. All accessories and hardware for a complete and proper installation.

1.03 RELATED WORK

A. Documents affecting this Work include: General Conditions, Special Conditions, and Sections of Division 1 of these Specifications.

B. Gypsum Systems.

C. Finish Carpentry.

1.04 SUBSTITUTIONS

Substitutions will be considered per General Condition Article 3.11.4 and Section 01630.

1.05 SUBMITTALS

Provide in accordance with Article 3.11 of the General Conditions.

1.06 CLOSE-OUT: Comply with the requirements of Section 01770 – Contract Closeout.

A. Reports: None required.

B. As-Builts: Comply with the requirements of Section 01770 – Contract Closeout.

C. Operation and Maintenance Data: None required

D. Extra Materials: None required

E. Extended Warranty: Comply with the requirements of the General Condition Article 3.5 and Section 01740.

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

A. Da-lite: Model C manual projection screen.

B. Substitutions under provision of Section 01000.

2.02 FABRICATION

A. 6'-0" x 8'-0" projection screen recess ceiling mounted.

B. Screen Fabric: Flame retardant, mildew resistant fiberglass; glass beaded picture surface with black masking borders. Fabric to be permanently attached to roller.

C. Case: 22 ga. steel case with black enamel finish and end caps.

PART 3 – EXECUTION

3.01 PREPARATION

A. Examine the areas and conditions under which work of this Section will be performed.

B. Verify adequate support of wood encasement by finish carpenter.

C. Correct conditions detrimental to timely and proper complete of the Work.

D. Do not proceed until unsatisfactory conditions are corrected.

E. Beginning of installation means acceptance of conditions.

3.02 INSTALLATION

A. Coordinate with other Sections to provide necessary support during the proper sequence of Work.

B. Install in accordance with manufacturer's instructions.

C. Install case and screen level and plumb.

D. Verify smooth operation of all components.

3.03 CLEANING

A. Leave work clean and operating smoothly.

B. Wipe clean case after installation.

C. Clean screen of any marring during installation.

***** END OF SECTION *****

SECTION 10155

SOLID PLASTIC TOILET PARTITIONS

PART 1 -- GENERAL

1.01 DESCRIPTION

A. Work included: Provide Floor-supported, overhead-braced, plastic toilet partitions where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.

B. Furnish all labor and materials necessary for the completion of work in this section as shown on the contract drawings and specified herein.

1.02 QUALITY ASSURANCE

Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods for proper performance of the work of this Section.

1.03 SUBSTITUTIONS

Substitutions will be considered per General Conditions Article 3.11.4 and Section 01630.

1.04 SUBMITTALS

Provide in accordance with Article 3.11 of the General Conditions.

1.05 PRODUCT HANDLING

Adhere to requirements of Section 01770.

1.06 CLOSE-OUT: Comply with the requirements of Section 01770 – Contract Closeout.

A. Reports:

None required.

B. As-Builts:

Comply with the requirements of Section 01770 – Contract Closeout.

C. Operation and Maintenance Data:

None required

D. Extra Materials:

None required

E. Extended Warranty:

Comply with the requirements of the General Condition Article 3.5 and Section 01740.

1. Warranties listed in this Section shall be in addition to, and not a limitation of other rights the owner may have under the contract documents.
2. Provide manufacturer's fifteen year warranty against corrosion, breakage and delamination of panels.
3. Provide manufacturer's five year warranty for chrome hardware and lifetime warranty for stainless steel hardware.

PART 2 -- PRODUCTS

2.01 MANUFACTURER

The Mills Company, a subsidiary of Bradley Corporation, P.O. Box 309, Menomonee Falls, WI 53052-0309. Phone 800-BRADLEY (800-272-3539), FAX 262-251-5817.

http://www.bradleycorp.com

2.02 MATERIALS

Doors, panels, and pilasters to be 1" thick with homogeneous color throughout, constructed from high-density polyethylene (HDPE) resins that are waterproof, non-absorbent, and have a self-lubricating surface that resists markings from pens, pencils, and other writing instruments.

2.03 CONSTRUCTION

A. Panels, doors and pilasters, 1 inch (25 mm) thick, constructed from high density polyethylene resins compounded under high pressure to form a single component, waterproof, non-absorbent, with a self-lubricating surface.

1. Edges: Rounded to a 3/16 inch (5 mm) radius.
2. Doors and panels 55 inches (1397 mm) high mounted 14 inches (356 mm) above finished floor, with aluminum heat sink fastened to bottom edge of doors.

B. Pilasters 82 inches (2083 mm) high, [minimum 5 inches (127 mm) wide for integral hinges], same construction as panels and doors, supported by pilaster shoe anchored to floor.

2.01 ACCESSORIES

A. One-piece pilaster shoes, 3 inch (76 mm) high type 304 satin stainless steel, anchored in place with stainless steel screws.

B. Head Rails: 1 x 1-1/2 inch (25 x 38 mm) extruded anodized aluminum with anti-grip profile and cast socket wall brackets.

C. Brackets: Continuous 54 inch (1372 mm) long heavy-duty aluminum, double ear style.

D. Fasteners, screws and bolts: Tamper proof stainless steel.

E. Hardware: Extruded aluminum 6463-T alloy and chrome-plated non-ferrous cast metal.

1. Hinge system integrated with doors and pilasters with no exposed metal parts. Hinge mechanism integrated into door and pilaster as a ½ inch (13 mm) diameter gravity cam unit with 3/16 inch (5 mm) stainless steel pin at door bottom and ½ inch (13 mm) nylon pin at top.
2. Latches fabricated from extruded aluminum with a satin finish for the housing and a black anodized finish for the slide bolt.
3. Door strike and keeper, 6 inches (152 mm) long fabricated from heavy-duty extruded aluminum with satin finish and wraparound flanges. Bumper is black rubber.
4. Coat hook with wall bumper, chrome-plated; one per compartment, mounted on door.
5. Door pull and door stop for each out swinging door.

2.04 OTHER MATERIALS

Provide other materials not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the acceptance of the Architect.

PART 3 -- EXECUTION

3.01 EXAMINATION

A. Examine the areas and conditions under which work of this Section will be performed.

B. Correct conditions detrimental to timely and proper completion of the Work.

C. Do not proceed until unsatisfactory conditions are corrected.

D. Take complete and accurate measurements of complete toilet and urinal compartment

locations.

E. Beginning of installation means acceptance of conditions.

3.02 INSTALLATION

A. Coordinate as required with other trades to assure proper and adequate provision in the work of those trades for interface with the work of this Section.

B. Install the work of this Section in strict accordance with the original design, the accepted Shop Drawings, pertinent requirements of governmental agencies having jurisdiction, and the manufacturer's recommended installation procedures as accepted by the Architect, anchoring all components firmly into position for long life under hard use.

C. Adjust doors, except doors to handicapped compartments, to remain at a uniformly open position when unlocked. Handicap compartment doors shall be hung so as to remain closed.

D. Touch-up scratches and abrasions to be completely invisible to the unaided eye from a distance of five feet.

E. Coordinate with General Contractor overhead bracing and wall backing and blocking required for all partitions and grab bars.

1. All such expenses are to be borne by the buyer.

*****END OF SECTION*****

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SECTION 10155

SOLID PLASTIC TOILET PARTITIONS

PART 1 -- GENERAL

1.01 DESCRIPTION

A. Work included: Provide Floor-supported, overhead-braced, plastic toilet partitions where shown on the Drawings, as specified herein, and as needed for a complete and proper installation.

B. Furnish all labor and materials necessary for the completion of work in this section as shown on the contract drawings and specified herein.

1.02 QUALITY ASSURANCE

Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods for proper performance of the work of this Section.

1.03 SUBSTITUTIONS

Substitutions will be considered per General Conditions Article 3.11.4 and Section 01630.

1.04 SUBMITTALS

Provide in accordance with Article 3.11 of the General Conditions.

1.05 PRODUCT HANDLING

Adhere to requirements of Section 01770.

1.06 CLOSE-OUT: Comply with the requirements of Section 01770 – Contract Closeout.

A. Reports:

None required.

B. As-Builts:

Comply with the requirements of Section 01770 – Contract Closeout.

C. Operation and Maintenance Data:

None required

D. Extra Materials:

None required

E. Extended Warranty:

Comply with the requirements of the General Condition Article 3.5 and Section 01740.

1. Warranties listed in this Section shall be in addition to, and not a limitation of other rights the owner may have under the contract documents.
2. Provide manufacturer's fifteen year warranty against corrosion, breakage and delamination of panels.
3. Provide manufacturer's five year warranty for chrome hardware and lifetime warranty for stainless steel hardware.

PART 2 -- PRODUCTS

2.01 MANUFACTURER

The Mills Company, a subsidiary of Bradley Corporation, P.O. Box 309, Menomonee Falls, WI 53052-0309. Phone 800-BRADLEY (800-272-3539), FAX 262-251-5817.

http://www.bradleycorp.com

2.02 MATERIALS

Doors, panels, and pilasters to be 1" thick with homogeneous color throughout, constructed from high-density polyethylene (HDPE) resins that are waterproof, non-absorbent, and have a self-lubricating surface that resists markings from pens, pencils, and other writing instruments.

2.03 CONSTRUCTION

A. Panels, doors and pilasters, 1 inch (25 mm) thick, constructed from high density polyethylene resins compounded under high pressure to form a single component, waterproof, non-absorbent, with a self-lubricating surface.

1. Edges: Rounded to a 3/16 inch (5 mm) radius.

2. Doors and panels 55 inches (1397 mm) high mounted 14 inches (356 mm) above finished floor, with aluminum heat sink fastened to bottom edge of doors.

B. Pilasters 82 inches (2083 mm) high, [minimum 5 inches (127 mm) wide for integral hinges], same construction as panels and doors, supported by pilaster shoe anchored to floor.

2.01 ACCESSORIES

A. One-piece pilaster shoes, 3 inch (76 mm) high type 304 satin stainless steel, anchored in place with stainless steel screws.

B. Head Rails: 1 x 1-1/2 inch (25 x 38 mm) extruded anodized aluminum with anti-grip profile and cast socket wall brackets.

C. Brackets: Continuous 54 inch (1372 mm) long heavy-duty aluminum, double ear style.

D. Fasteners, screws and bolts: Tamper proof stainless steel.

E. Hardware: Extruded aluminum 6463-T alloy and chrome-plated non-ferrous cast metal.

1. Hinge system integrated with doors and pilasters with no exposed metal parts. Hinge mechanism integrated into door and pilaster as a ½ inch (13 mm) diameter gravity cam unit with 3/16 inch (5 mm) stainless steel pin at door bottom and ½ inch (13 mm) nylon pin at top.

2. Latches fabricated from extruded aluminum with a satin finish for the housing and a black anodized finish for the slide bolt.

3. Door strike and keeper, 6 inches (152 mm) long fabricated from heavy-duty extruded aluminum with satin finish and wraparound flanges. Bumper is black rubber.

4. Coat hook with wall bumper, chrome-plated; one per compartment, mounted on door.

5. Door pull and door stop for each out swinging door.

2.04 OTHER MATERIALS

Provide other materials not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the acceptance of the Architect.

PART 3 -- EXECUTION

3.01 EXAMINATION

A. Examine the areas and conditions under which work of this Section will be performed.

B. Correct conditions detrimental to timely and proper completion of the Work.

C. Do not proceed until unsatisfactory conditions are corrected.

D. Take complete and accurate measurements of complete toilet and urinal compartment

locations.

E. Beginning of installation means acceptance of conditions.

3.02 INSTALLATION

A. Coordinate as required with other trades to assure proper and adequate provision in the work of those trades for interface with the work of this Section.

B. Install the work of this Section in strict accordance with the original design, the accepted Shop Drawings, pertinent requirements of governmental agencies having jurisdiction, and the manufacturer's recommended installation procedures as accepted by the Architect, anchoring all components firmly into position for long life under hard use.

C. Adjust doors, except doors to handicapped compartments, to remain at a uniformly open position when unlocked. Handicap compartment doors shall be hung so as to remain closed.

D. Touch-up scratches and abrasions to be completely invisible to the unaided eye from a distance of five feet.

E. Coordinate with General Contractor overhead bracing and wall backing and blocking required for all partitions and grab bars.

1. All such expenses are to be borne by the buyer.

*****END OF SECTION*****

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SECTION 10263

CORNER GUARDS

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

Division 0, Contract Requirements and Division 1, General Requirements apply to this Section

1.02 SUMMARY

This section includes the following types of wall protection systems: Corner Guards.

1.03 REFERENCES

American Society for Testing and Materials (ASTM)

1.03 QUALITY ASSURANCE

A. Installer qualifications: Engage an installer who has no less than 3 years experience in installation of systems similar in complexity to those required for this project.

B. Manufacturer's qualifications: Not less than 5 years' experience in the production of specified products and a record of successful in-service performance.

C. Single source responsibility: Provide all components of the wall protection system manufactured by the same company to ensure compatibility of color, texture and physical properties.

D. Fire performance characteristics: Provide engineered PETG wall protection system components with UL label indicating that they are identical to those tested in accordance with ASTM E84 for Class 1 characteristics listed below:

1. Flame spread: 25 or less.
2. Smoke developed: 450 or less.

E. Impact Strength: Provide assembled wall protection units that have been tested in accordance with the applicable provisions of ASTM F476.

F. Chemical and stain resistance: Provide wall protection system components with chemical and stain resistance in accordance with ASTM D543.

G. Color match: Provide wall protection components that are color matched in accordance with the following:

Delta Ecmc of no greater than 1.0 using CIELab color space. (Specifier note: Construction Specialties' colors are matched under cool white fluorescent lighting and computer controlled within manufacturing tolerances. Color may vary if alternate lighting sources are present).

H. Single source responsibility: Provide all components of the wall protection system manufactured by the same company to ensure compatibility of color, texture and physical properties.

1.04 SUBSTITUTIONS

Substitutions will be considered per General Condition Article 3.11.4 and Section 01630.

1.05 SUBMITTALS

A. Provide in accordance with Article 3.11 of the General Conditions.

B. Product data and detailed specifications for each system component and installation accessory required, including installation methods for each type of substrate.

C. Shop drawings showing locations, extent and installation details of corner guards. Show methods of attachment to adjoining construction.

D. Samples for verification purposes: Submit the following samples, as proposed for this work, for verification of color, texture, pattern and end cap attachment and alignment.

12" (304.8mm) long sample of each model specified including end cap and mounting hardware.

E. Product test reports from a qualified independent testing laboratory showing compliance of each component with requirements indicated.

1.06 DELIVERY, STORAGE AND HANDLING

A. Comply with the requirements of Section 01620.

B. Deliver materials to the project site in unopened original factory packaging clearly labeled to show manufacturer.

C. Store materials in original, undamaged packaging in a cool, dry place out of direct sunlight and exposure to the elements. A minimum room temperature of 40°F (4°C) and a maximum of 100°F (38°C) should be maintained.

D. Material must be stored flat.

1.07 PROJECT CONDITIONS

A. Materials must be acclimated in an environment of 65°-75°F (18°-24°C) for at least 24 hours prior to beginning the installation.

B. Installation areas must be enclosed and weatherproofed before installation commences.

1.08 CLOSE-OUT: Comply with the requirements of Section 01770 – Contract Closeout.

A. Reports: None required.

B. As-Builts: Comply with the requirements of Section 01770 – Contract Closeout.

C. Operation and Maintenance Data: None required

D. Extra Materials: None required

E. Extended Warranty: Comply with the requirements of the General Condition Article 3.5 and Section 01740.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

Interior surface protection products specified herein and installed on the submittal drawings shall be manufactured by Construction Specialties, Inc. or approved equal.

2.02 MATERIALS

A. Engineered PETG: Extruded material should be high impact Acrovyn 4000 with shadow-grain texture, nominal .078" (1.98mm) thickness. Chemical and stain resistance should be per ASTM D543 standards as established by the manufacturer. Colors to be indicated in the finish schedule from one of manufacturer's standard color range.

B. Recycled PETG: PVC-free regrind retainer.

C. Fasteners: All fasteners to be non-corrosive and compatible with aluminum retainers. All necessary fasteners to be supplied by the manufacturer.

2.03 CORNER GUARDS

A. Engineered PETG Corner Guards to be Acrovyn 4000 by Construction Specialties: Surface mounted guards consisting of continuous retainer with snap-on Acrovyn 4000 cover. Color matched end caps to be provided for both partial and full height applications. Attachment hardware shall be appropriate for wall construction.

Model SSM-20N 90° surface mounted corner guard with 2" (51mm) legs, ¼" radiused cover and recycled PETG retainer. See Interior Material Schedule for Color.

2.04 FABRICATION

A. General: Fabricate wall protection systems to comply with requirements indicated for design, dimensions, detail, finishes and member sizes. All based upon required field verified dimensions.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine the areas and conditions under which work of this Section will be performed.

B. Verify that specified items may be installed in accordance with the approved design.

C. Correct conditions detrimental to timely and proper completion of the Work.

D. Do not proceed until unsatisfactory conditions are corrected.

E. Beginning of installation means acceptance of conditions.

3.02 PREPARATION

A. Surface preparation: Prior to installation, clean substrate to remove dirt, debris and loose particles. Perform additional preparation procedures as required by manufacturer's instructions.

B. Protection: Take all necessary steps to prevent damage to material during installation as required in manufacturer's installation instructions.

3.03 INSTALLATION

A. Install the work of this section in strict accordance with the manufacturer's recommendations and the required field verified dimensions.

B. Use only approved mounting hardware, and locating all components firmly into position, level and plumb.

C. Temperature at the time of installation must be between 65°-75°F (18°-24°C) and be maintained for at least 48 hours after the installation.

3.04 CLEANING

A. General: Immediately upon completion of installation, clean rails and accessories in accordance with manufacturer's recommended cleaning method.

B. Remove surplus materials, rubbish and debris resulting from installation as work progresses and upon completion of work.

3.05 PROTECTION

Protect installed materials to prevent damage by other trades. Use materials that may be easily removed without leaving residue or permanent stains.

*****END OF SECTION*****

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SECTION 10400

IDENTIFYING DEVICES

PART 1 -- GENERAL

1.01 GENERAL REQUIREMENTS

Division 0, Contract Requirements and Division 1, General Requirements apply to this Section.

1.02 SECTION INCLUDES

A. Molded plastic signs.

B. Aluminum free-standing signs.

C. Aluminum channel letters.

D. Dedication Plaque

1.03 SUBSTITUTIONS

Substitutions will be considered per Article 3.3 of the Instruction to Bidders of the Bid Package Section 00003.

1.04 SUBMITTALS

A. Provide in accordance with Article 3.11 of the General Conditions.

B. Submit the following:

1. samples illustrating full size sample sign, of type, style and color specified including method of attachment.

2. manufacturer's installation instructions.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Package signs, labeled in name groups.

B. Store adhesive tape at ambient room temperatures.

1.06 ENVIRONMENTAL REQUIREMENTS

Do not install signs when ambient temperature is below 70 degrees F. Maintain this minimum during and after installation of signs.

1.07 PRODUCT HANDLING

Adhere to requirements of Section 01770.

1.08 CLOSE-OUT: Comply with the requirements of Section 01770 – Contract Closeout.

A. Reports: None required.

B. As-Builts: Comply with the requirements of Section 01770 – Contract Closeout.

C. Operation and Maintenance Data: None required

D. Extra Materials: None required

E. Extended Warranty: Comply with the requirements of the General Condition Article 3.5 and Section 01740.

PART 2 -- PRODUCTS

2.01 MATERIALS – EXTERIOR BUILDING SIGNAGE

A. Basis of Design: A.R.K. Ramos Architectural Signage Systems; Aluminum Channel Letter

B. Letters and/or Numbers – Font/Size/Finish/Color: as indicated on the Drawings.

C. Brackets: PPM-1 bracket sleeved stud.

1. Set in adhesive in masonry.
2. Attach to support in framed wall.

2.02 MATERIALS – ROOM ID SIGNAGE

A. 1/8" thick ES Plastic. Color to be selected by Architect.

B. Graphics to be vinyl die-cut. 3/4" Helvetica Medium caps.

C. Adhesive mounting.

D. All signs to have 1/2" Radius corners.

E. See Schedule for types.

F. All signs installed on glass shall have a full size backing plate adhered to the opporsite side of the glass of the same color as the sign.

2.03 MATERIALS – OTHER INTERIOR SIGNAGE

A. Products: See Drawings for types.

B. Material: 1/8" thick ES Plastic. Size and color as indicated on the drawings. All signs to have 1/2" Radius corners.

C. Graphics: to be vinyl die-cut. Text, Font, size and color as indicated on the drawings.

D. Mounting: Adhesive mounting.

2.04 MATERIALS -- ALUMINUM FREE-STANDING SIGN

A. See Drawings for types and locations.

B. Provide 1/8" thick aluminum sign, on 1-3/4" x 1-3/4" x 1/8" x 7' post; black duranodic aluminum tubing and sign.

C. Letters are to be vinyl die-cut. Test shall conform to access requirements of the CBC.

D. Color to be black anodized with white lettering.

E. Signs are to be sleeve mounted in concrete footings.

2.05 DEDICATION PLAQUE

See Drawings for: location at Flagpole, size, text, and material details.

2.06 ACCESSORIES

A. Mounting Hardware: Chrome screws; base sleeve and studs per manufacturer's recommendations.

B. Tape Mount: Double sided tape, permanent adhesive.

C. Adhesive: Silastic adhesive as recommended by manufacturer.

PART 3 -- EXECUTION

3.01 EXAMINATION

A. Examine the areas and conditions under which work of this Section will be performed.

B. Verify adequate support for Building Signs. Coordinate footings with other trades.

C. Correct conditions detrimental to timely and proper completion of the Work.

D. Do not proceed until unsatisfactory conditions are corrected.

E. Beginning of installation means acceptance of conditions.

3.02 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install signs after doors and surfaces are finished, in locations indicated.

1. Furnish and install all anchorage devices required to install the item and its appurtenances complete. Provide anchorage in ample time when required to be built in by other trades.

2. All wall-mounted items shall be securely fastened to solid backing or blocking.

C. Center plastic signs on doors, level.

D. Anchor all components firmly into position for long life under hard use.

E. Clean and polish.

*****END OF SECTION*****

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SECTION 10520

FIRE PROTECTION SPECIALTIES

PART 1 -- GENERAL

1.01 GENERAL REQUIREMENTS

Division 0, Contract Requirements and Division 1, General Requirements apply to this Section.

1.02 SCOPE OF WORK

A. Provide and install all Fire extinguishers and Cabinets as shown on the documents and as required by the local Fire Marshall.

B. Accessories as required for a complete and proper project.

1.03 QUALITY ASSURANCE

A. Conform to NFPA 10 requirements for extinguishers.

B. Provide fire extinguishers, cabinets, and accessories by single manufacturer.

1.04 SUBSTITUTIONS

Substitutions will be considered per Article 3.3 of the Instruction to Bidders of the Bid Package Section 00003.

1.05 SUBMITTALS

A. Provide in accordance with Article 3.11 of the General Conditions

B. Submit the following:

1. Physical dimensions, operational features, color and finish, wall-mounting brackets with mounted measurements, anchorage details, rough-in measurements, location, and details.
2. Manufacturer's installation instructions.
3. Manufacturer's operation and maintenance data.
4. Include test, refill or recharge schedules, procedure, and re-certification requirements.

1.06 ENVIRONMENTAL REQUIREMENTS

Do not install extinguishers when ambient temperatures may cause freezing.

1.07 PRODUCT HANDLING

Comply with the requirements of Section 01640.

1.08 CLOSE-OUT: Comply with the requirements of Section 01770 – Contract Closeout.

A. Reports: None required.

B. As-Builts: Comply with the requirements of Section 01770 – Contract Closeout.

C. Operation and Maintenance Data: None required

D. Extra Materials: None required

E. Extended Warranty: Comply with the requirements of the General Condition Article 3.5 and Section 01740.

PART 2 -- PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

Larsen's Manufacturing Company or Architect approved equal.

2.02 EXTINGUISHERS

Multi-Purpose Chemical Type: Larsen's Steel tank, Model MP 5, with pressure gage, and UL Rating 2A-10B:C or approved equal.

2.03 CABINETS

Typical Extinguisher Cabinet:

A. Provide Larsen's 2409-5R Vertical Duo Panel cabinet.

B. Primer finish.

2.04 ACCESSORIES

A. Mounting Hardware: Appropriate to cabinet - see manufacturer's installation instructions.

B. Provide other materials, not specifically described but required for a complete and proper installation, as selected by the Contractor subject to the approval of the Architect.

2.05 FABRICATION

A. Form body of cabinet with tight inside corners and seams.

B. Pre-drill holes for anchorage.

C. Form perimeter trim and door stiles by welding, filling, and grinding smooth.

D. Hinge doors for 180 degree opening.

E. Glaze doors with resilient channel gasket glazing.

2.06 FINISHES

A. Extinguisher: Red enamel.

B. Cabinet Trim and Door: Primed to be painted to match adjacent surface.

C. Cabinet Interior: Enamel white.

PART 3 -- EXECUTION

3.01 INSPECTION

A. Examine the areas and conditions under which work of this Section will be performed.

B. Verify that rough openings for cabinet are correctly sized and located.

C. Correct conditions detrimental to timely and proper completion of the Work.

D. Do not proceed until unsatisfactory conditions are corrected.

E. Beginning of installation means acceptance of conditions.

3.02 INSTALLATION

A. Install cabinets plumb and level in wall openings so that there is 54 inches from finished floor to door handle.

B. Secure rigidly in place in accordance with manufacturer's instructions.

***** END OF SECTION *****

SECTION 10655

OPERABLE PARTITIONS

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

Division 0, Contract Requirements and Division 1, General Requirements apply to this Section.

1.02 SUMMARY

Single panel partitions, 4 inch thick, operable panel partitions.

1.03 REFERENCES

A. ASTM E 90 - Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.

B. ASTM E 557 - Standard Practice for the Installation of Operable Partitions.

1.04 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who is certified in writing by the operable partition manufacturer, as qualified to install the manufacturer's partition systems for work similar in material, design, and extent to that indicated for this Project.

B. Acoustical Performance: Test operable partitions in accordance with ASTM E 90 test procedure to attain no less than the STC rating specified. Provide a complete and unedited written test report by the testing laboratory upon request.

C. Preparation of Opening: Conform to ASTM E 557.

1.05 SUBSTITUTIONS

Substitutions will be considered per General Conditions Article 3.11.4 and Section 01630.

1.06 SUBMITTALS

A. Provide in accordance with Article 3.11 of the General Conditions.

B. Product Data: Material descriptions, construction details, finishes, installation details, and operating instructions for each type of operable partition, component, and accessory specified.

C. Shop Drawings: Show location and extent of operable partitions. Include plans, elevations, sections, details, attachments to other construction, and accessories. Indicate dimensions, weights, conditions at openings, and at storage areas, and required installation, storage, and operating clearances. Indicate location and installation requirements for hardware and track, including floor tolerances required and direction of travel. Indicate blocking to be provided by others.

D. Setting Drawings: Show imbedded items and cutouts required in other work, including support beam punching template.

E. Samples: Color samples demonstrating full range of finishes available to Architect. Verification samples shall be available in same thickness and material indicated for the work.

1.07 PRODUCT HANDLING

A. Adhere to requirements of Section 01640.

B. Clearly mark packages and panels with numbering systems used on Shop Drawings. Do not use permanent markings on panels.

C. Protect panels during delivery, storage, and handling to comply with manufacturer's

instructions and as required to prevent damage.

1.08 CLOSE-OUT: Comply with the requirements of Section 01770 – Contract Closeout.

A. Reports:

None required.

B. As-Builts:

Comply with the requirements of Section 01770 – Contract Closeout.

C. Operation and Maintenance Data:

None required

D. Extra Materials:

None required

E. Extended Warranty:

Comply with the requirements of the General Condition Article 3.5 and Section 01740.

A. Warranties listed in this Section shall be in addition to, and not a limitation of other rights the owner may have under the contract documents.

B. Provide operable partition manufacturer's written warranty agreeing to repair or replace components with manufacturing defects:

1. Partition: (2) Two years
2. Suspension System: (5) Five years
3. Hinges: Lifetime

PART 2 - PRODUCTS

2.01 MANUFACTURER

A. Basis of design Manufacturer: Modernfold, Inc.,

Location: 215 W. New Road, Greenfield, IN 46140;

Toll Free Tel: 800-869-9685; Tel: 317-468-6700;

Fax: 866-410-5016;

Email: info@modernfold.com;

Web: www.modernfold.com

2.02 PRODUCT

Subject to compliance with the requirements, provide the following product: OP-01: Acousti-Seal # 932 manually operated paired panel operable partition.

2.03 OPERATION

A. OP-01: Acousti-Seal #932: Series of paired flat panels hinged together in pairs, manually operated, top supported with operable floor seals.

B. Final Closure: Horizontally expanding panel edge with removable crank.

2.04 PANEL CONSTRUCTION

A. Nominal 3-inch thick panels in manufacturer's standard 48-inch widths. All panel horizontal and vertical framing elements fabricated from 18-gage formed steel with overlapped and

welded corners for rigidity. Top channel is reinforced to support suspension system components. Frame is designed so that full vertical edges of panels are of formed steel and provide concealed protection of the edges of the panel skin.

B. Panel skin shall be: 0.50-inch Tackable 100% recycled gypsum board, class "A" rated single material or composite layers continuously bonded to panel frame. Acoustical ratings of panels with this construction are a minimum of 50 STC.

C. Hinges for Panels, Closure Panels, and Pocket Door shall be: Full leaf butt hinges, attached directly to the panel frame with welded hinge anchor plates within panel to further support hinge mounting to frame. Hinges mounted into panel edge or vertical astragal are not acceptable.

D. Panel Trim: no vertical trim required or allowed on edges of panels; minimal groove appearance at panel joints.

E. Panel Weights: 8 lbs/square foot.

2.05 PANEL FINISH

A. Panel finish shall be factory applied, Class "A" rated material. Finish shall be: wall covering and upholstery fabric with surface treatment to resist stains.

B. Panel Trim: exposed panel trim of one consistent color: to be selected by the Architect.

1. Panel Finish:.

2. Exposed Panel Trim Color: Dark bronze.

2.06 SOUND SEALS

A. Vertical Interlocking Sound Seals Between Panels: Roll-formed steel astragals, with reversible tongue and groove configuration in each panel edge for universal panel operation. Rigid plastic or aluminum astragals or astragals in only one panel edge are not acceptable.

B. Horizontal Top Seals: continuous contact extruded vinyl bulb shape with pairs on non-contacting vinyl fingers to prevent distortion without the need for mechanically operated parts.

C. Horizontal bottom Floor Seals shall be: Modernfold IA2 Bottom Seal. Automatic operable seals providing nominal 2 inches (51 mm) operating clearance with an operating range of plus 0.50 inches (13 mm) to minus 1.50 inches (38 mm), which automatically drop as panels are positioned, without the need for tools or cranks.

2.07 SUSPENSION SYSTEM

A. Suspension Tracks: Minimum 11-gauge, 0.12 roll-formed steel track, suitable for either direct mounting to wood header or supported by adjustable steel hanger brackets, supporting the load-bearing surface of the track, connected to structural support by pairs of 0.38 inches (10 mm) diameter threaded rods. Aluminum track is not acceptable.

B. Exposed Track Soffit: Steel, integral to track bracket without exposed fasteners and pre-painted off-white.

C. Carriers: One all-steel trolley with steel tired ball-bearing wheels per panel (except hinged panels). Non-steel tires are not acceptable.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine flooring, structural support, and opening, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of operable partitions.

B. Verify that specified items may be installed in accordance with the approved design.

C. Correct conditions detrimental to timely and proper completion of the Work.

D. Do not proceed until unsatisfactory conditions are corrected.

E. Beginning of installation means acceptance of conditions.

3.02 INSTALLATION

A. General: Comply with ASTM E557, operable partition manufacturer's written installation instructions, Drawings and approved Shop Drawings .

B. Install operable partitions and accessories after other finishing operations, including painting have been completed.

C. Match operable partitions by installing panels from marked packages in numbered sequence indicated on Shop Drawings.

D. Broken, cracked, chipped, deformed or unmatched panels are not acceptable.

3.03 CLEANING AND PROTECTION

A. Clean partition surfaces upon completing installation of operable partitions to remove dust, dirt, adhesives, and other foreign materials according to manufacturer's written instructions.

B. Provide final protection and maintain conditions in a manner acceptable to the manufacturer and installer that insure operable partitions are without damage or deterioration at time of Substantial Completion.

3.04 ADJUSTING

Adjust operable partitions to operate smoothly, easily, and quietly, free from binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Lubricate hardware and other moving parts

3.05 DEMONSTRATION

A. Demonstrate proper operation and maintenance procedures to Owner's representative.

B. Provide Operation and Maintenance Manual to Owner's representative.

*****END OF SECTION*****

SECTION 10800

TOILET AND BATH ACCESSORIES

PART 1 -- GENERAL

1.01 GENERAL REQUIREMENTS

Division 0, Contract Requirements and Division 1, General Requirements apply to this Section.

1.02 QUALITY ASSURANCE

A. Manufacturer: Provide products manufactured by a company with a minimum of 10 years successful experience manufacturing similar products.

B. Single Source Requirements: To the greatest extent possible provide products from a single manufacturer.

C. Accessibility Requirements: Comply with requirements applicable in the jurisdiction of the project, including but not limited to ADA and ICC/ANSI A117.1 requirements as applicable.

D. Hazardous Materials: Comply with EU Directive "Restrictions of Hazardous Substances (RoHS) requirements."

1.03 SUBSTITUTIONS

Substitutions will be considered per General Condition Article 3.11.4 and Section 01630.

1.04 SUBMITTALS

Provide in accordance with Article 3.11 of the General Conditions.

1.05 KEYING

Supply two (2) keys for each accessory to Owner. Master Key all accessories.

1.06 REGULATORY REQUIREMENTS

Conform to Title 24 and City codes for installing work in conformance with ANSI A117.1.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Comply with the requirements of Section 01620.

B. Deliver, store and handle materials and products in strict compliance with manufacturer's instructions and recommendations. Protect from damage.

1.08 SEQUENCING AND SCHEDULING

Coordinate the work of this Section with the placement of internal wall reinforcement and reinforcement of toilet partitions to receive anchor attachments.

1.09 CLOSE-OUT: Comply with the requirements of Section 01770 – Contract Closeout.

A. Reports:

None required.

B. As-Builts:

Comply with the requirements of Section 01770 – Contract Closeout.

C. Operation and Maintenance Data:

None required

D. Extra Materials:

None required

E. Extended Warranty:

Comply with the requirements of the General Condition Article 3.5 and Section 01740.

PART 2 -- PRODUCTS

2.01 MANUFACTURER

Basis of Design Products: Based on the quality and performance requirements of the project, specifications are based solely on the products of Bobrick Washroom Equipment, Inc.. www.bobrick.com. Location of manufacturing shall be the United States

2.02 TOILET ACCESSORY SCHEDULE

As indicated on the Drawings.

2.03 MATERIALS

A. Stainless Steel Sheet: ASTM A167, Type 304.

B. Tubing: ASTM A269, stainless steel.

C. Fasteners, Screws, and Bolts: Hot dip galvanized as recommended by manufacturer.

D. Expansion Shields: Fiber, lead, or rubber as recommended by accessory manufacturer for component and substrate.

2.04 PRODUCTS

As indicated on the Drawings.

2.05 FACTORY FINISHING

Stainless Steel: No. 4 satin luster finish.

PART 3 -- EXECUTION

3.01 EXAMINATION

A. Examine the areas and conditions under which work of this Section will be performed.

B. Verify that site conditions are ready to receive work and dimensions are as instructed by the manufacturer.

C. Correct conditions detrimental to timely and proper completion of the Work.

D. Do not proceed until unsatisfactory conditions are corrected.

E. Beginning of installation means acceptance of conditions.

3.02 PREPARATION

A. Deliver inserts and rough-in frames to site at appropriate time for building-in.

B. Provide complete information, diagrams, templates, and instructions for the installation of all items, in sufficient time so that all backing, blocking, framing and formwork can be properly installed, and so that the work of other trades will not be delayed.

C. Verify exact location of accessories for installation.

3.03 INSTALLATION

A. Install products in strict compliance with manufacturer's written instructions and recommendations, including the following:

1. Verify blocking has been installed properly.

2. Verify location does not interfere with door swings or use of fixtures.
3. Comply with manufacturer's recommendations for backing and proper support.
4. Use fasteners and anchors suitable for substrate and project conditions
5. Install units rigid, straight, plumb, and level, in accordance with manufacturer's installation instructions and approved shop drawings.
6. Conceal evidence of drilling, cutting, and fitting to room finish.

B. Test for proper operation

3.04 CLEANING AND PROTECTION

A. Clean exposed surfaces of compartments, hardware, and fittings using methods acceptable to the manufacturer.

B. Touch-up, repair or replace damaged products until Substantial Completion.

***** END OF SECTION *****

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SECTION 11027

KNOX BOXES

PART 1 -- GENERAL

1.01 GENERAL REQUIREMENTS

Division 0, Contract Requirements and Division 1, General Requirements apply to this Section.

1.02 SCOPE OF WORK

This Section describes the requirements for furnishing and installing lock boxes.

1.03 QUALITY ASSURANCE

Coordinate ordering lock boxes with local Fire District.

1.04 SUBSTITUTIONS

Substitutions will be considered per Article 3.3 of the Instruction to Bidders of the Bid Package Section 00003.

1.05 SUBMITTALS

A. Provide in accordance with Article 3.11 of the General Conditions.

B. Product Data: Manufacturer's descriptive and technical data and installation details.

1.06 CLOSE-OUT: Comply with the requirements of Section 01770 – Contract Closeout.

A. Reports: None required.

B. As-Builts: Comply with the requirements of Section 01770 – Contract Closeout.

C. Operation and Maintenance Data: None required

D. Extra Materials: None required

E. Extended Warranty: Comply with the requirements of the General Condition Article 3.5 and Section 01740.

PART 2 -- PRODUCTS

2.01 LOCK BOXES

A. Basis of Design: Knox Company

1. Construction: Heavy-duty, high security
2. Door: ⅝-inch solid steel with gasket
3. Size: 9½-inches high x 9½-inches wide x 5-inches deep
4. Mounting: Recessed
5. Finish: Aluminum Finish

B. Model:

1. Model #4400 at Doors
2. Model #3770 at Gates
3. Vehicular Gate Key Control Switch: Knox #3502

C. Fastenings: Non-ferrous, type to suit installation conditions

PART 3 -- EXECUTION

3.01 EXAMINATION

A. Examine the areas and conditions under which work of this Section will be performed.

B. Verify that specified items may be installed in accordance with the approved design.

C. Correct conditions detrimental to timely and proper completion of the Work.

D. Do not proceed until unsatisfactory conditions are corrected.

E. Beginning of installation means acceptance of conditions.

3.02 INSTALLATION

A. Install lock boxes at locations indicated in accordance with manufacturer's instructions.

B. Securely fasten in place with sides plumb and level.

C. Exposed surfaces shall be free from scratches, tool marks, and other damage and defects.

***** END OF SECTION *****

SECTION 11450

APPLIANCES

PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS

Division 0, Contract Requirements and Division 1, General Conditions apply to this Section.

1.02 SECTION INCLUDES

A. Residential appliances of the following types:

1. Refrigerators.
2. Cooking appliances.
3. Microwave ovens.
4. Exhaust Hood.

1.03 REFERENCES

A. ANSI A117.1 - Guidelines for Accessible and Useable Buildings and Facilities.

B. EPA - Energy Star Appliances.

C. Public Law 101-336 - Americans with Disabilities Act.

1.04 QUALITY ASSURANCE

A. Regulatory Requirements: Comply with referenced standards and the Americans with Disabilities Act as applicable for fixtures for the disabled.

B. Energy Rating: Provide appliances with the EPA Energy Star label where applicable.

C. Coordinate rough-in requirements with adjacent construction. Coordinate components and fittings to ensure compatible parts are installed.

1.05 SUBSTITUTIONS

Substitutions will be considered per General Condition Article 3.11.4 and Section 01630.

1.06 SUBMITTALS

A. Provide in accordance with Article 3.11 of the General Conditions.

B. Product Data: Manufacturer's data sheets on each product to be used, including:

1. Model number and selected options for each appliance.
2. Preparation instructions and recommendations.
3. Storage and handling requirements and recommendations.
4. Installation methods.
5. List of maintenance parts.

C. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.

D. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Comply with the requirements of Section 01620.

B. Store products in manufacturer's unopened packaging until ready for installation.

1.08 PROJECT CONDITIONS

Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.09 CLOSE-OUT: Comply with the requirements of Section 01770 – Contract Closeout.

A. Reports:

None required.

B. As-Builts:

Comply with the requirements of Section 01770 – Contract Closeout.

C. Operation and Maintenance Data:

None required

D. Extra Materials:

None required

E. Extended Warranty:

Comply with the requirements of the General Condition Article 3.5 and Section 01740.

PART 2 -- PRODUCTS

2.01 MANUFACTURERS

Acceptable Manufacturer: GE Appliances, which is located at: Appliance Park AP4-109 ; Louisville, KY 40225; Toll Free Tel: 800-626-2000; Tel: 502-452-3346; Fax: 502-452-0620; Email: request info; Web: www.geappliances.com

2.02 APPLIANCES

A. Refrigerator:

1. Top-Freezer Refrigerators: GE Energy Star 17.9 Cu. Ft., model no. GTH18ISXSS.
2. Appearance: Stainless steel.

B. Cooking Appliances:

1. Ranges: GE 30" Built-in Clean Design Electric Cooktop, model no.JP356WMBB
2. Appearance: Black on black

C. Microwave Ovens:

1. Microwave Ovens: GE 1.3 Cu. Ft. Countertop Microwave Oven, model no. JES1344SK.
2. Appearance: Stainless steel.

D. Exhaust Hood:

1. Model: GE 30" Energy Star Qualified Ventilation Hood, model number PV970NSS
2. Appearance: Stainless steel.

PART 3-- EXECUTION

3.01 EXAMINATION

A. Examine the areas and conditions under which work of this Section will be performed.

B. Do not begin installation until substrates have been properly prepared. Coordinate rough-in with appliance sizes and utility requirements.

C. Correct conditions detrimental to timely and proper completion of the Work.

D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

E. Do not proceed until unsatisfactory conditions are corrected.

F. Beginning of installation means acceptance of conditions.

3.02 PREPARATION

A. Clean surfaces thoroughly prior to installation.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.03 INSTALLATION

Assemble appliances and trim and install in accordance with manufacturer's instructions and the following:

1. Securely mount to substrate.
2. Install appliances plumb and level and in proper relationship to adjacent construction.
3. Connect appliances to building utility, supply and waste systems as applicable.
4. Test for proper operation and drainage. Adjust until proper operation is achieved.

3.04 PROTECTION

A. Protect installed products until completion of project.

B. Touch-up, repair or replace damaged products before Substantial Completion.

*****END OF SECTION*****

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SECTION 12500

WINDOW TREATMENT - MANUAL ROLLER SHADES

PART 1 – GENERAL

1.01 SCOPE

Furnish and install Manual Roller Shades (Premium Quality)

1.02 REFERENCES

Flame-Resistant materials shall pass or exceed the following tests:

- National Fire Protection Association (NFPA) 701 (small scale for horizontal applications)
- California Administrative Code Title 19

1.03 QUALITY ASSURANCE

A. Manufacturer, subsidiary or licensed agent shall be approved to supply the products specified, and to honor any claims against product presented in accordance with warranty.

B. Installer or agent shall be qualified to install specified products by prior experience, demonstrated performance and acceptance of requirements of manufacturer, subsidiary, or licensed agent. Installer shall be responsible for an acceptable installation.

C. Provide Manual Roller Shades of only one manufacturer for entire project.

1.04 SUBSTITUTIONS

Substitutions will be considered per General Conditions Article 3.11.4 and Section 01630.

1.05 SUBMITTALS

A. Provide in accordance with Article 3.11 of the General Conditions

B. Product Data: Manufacturer's descriptive literature shall be submitted indicating materials, finishes, construction and installation instructions and verifying that product meets requirements specified. Manufacturer's recommendations for maintenance and cleaning shall be included.

C. Drawings and Diagrams: Wiring diagrams of any motorized components or units, working and assembly drawings shall be supplied as requested.

D. Samples: Responsible contracting officer or agent shall supply one sample shade of each type specified in this contract for approval. Supplied units shall be furnished complete with all required components, mounting and associated hardware, instructions and warranty.

1.06 PRODUCT HANDLING

A. Adhere to requirements of Section 01770.

B. Product shall be delivered to site in manufacturer's original packaging.

C. Product shall be handled and stored to prevent damage to materials, finishes and operating mechanisms.

1.07 JOB CONDITIONS

A. Prior to shade installation, building shall be enclosed.

B. Interior temperature shall be maintained between 60° F. and 90° F. during and after installation; relative humidity shall not exceed 80%. Wet work shall be complete and dry.

1.08 OPERATION AND MAINTENANCE DATA

Submit operation and maintenance data maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning.

1.09 CLOSE-OUT: Comply with the requirements of Section 01770 – Contract Closeout.

A. Reports: None required.

B. As-Builts: Comply with the requirements of Section 01770 – Contract Closeout.

C. Operation and Maintenance Data: See 1.08 for Information.

D. Extra Materials: None required

E. Extended Warranty: Comply with the requirements of the General Condition Article 3.5 and Section 01740.

1. Warranties listed in this Section shall be in addition to, and not a limitation of other rights the owner may have under the contract documents.

2. Lifetime Limited Warranty. Fabrics warranted for 5 years. Specific product warranties available from manufacturer or its authorized agent.

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURER

As indicated on the Drawings

2.02 MANUAL ROLLER SHADES

As indicated on the Drawings

2.03 FABRICATION

Shade measurements shall be accurate to within ± 1/8" or as recommended in writing by manufacturer.

2.04 FABRICS

Fabric selection by Architect.

PART 3 - EXECUTION

3.01 INSPECTION

A. Examine the areas and conditions under which work of this Section will be performed.

B. Verify that specified items may be installed in accordance with the approved design.

C. Correct conditions detrimental to timely and proper completion of the Work.

D. Do not proceed until unsatisfactory conditions are corrected.

E. Beginning of installation means acceptance of conditions.

3.02 INSTALLATION

A. Installation shall comply with manufacturer's specifications, standards and procedures as detailed on contract drawings.

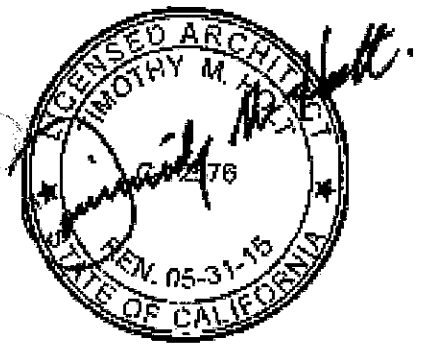
B. Adequate clearance shall be provided to permit unencumbered operation of shade and hardware.

C. Clean finish installation of dirt and finger marks. Leave work area clean and free of debris.

3.03 DEMONSTRATION

Demonstrate operation method and instruct owner's personnel in the proper operation and maintenance of the blinds.

*****END OF SECTION*****



SPECIFICATIONS
FOR

INDIO
DEPARTMENT OF PUBLIC SOCIAL SERVICES
COLLEGE OF THE DESERT SPACE REMODEL

Project No. FM05510006649

COUNTY OF RIVERSIDE
EDA
ECONOMIC DEVELOPMENT AGE

HOLT ARCHITECTURE

Prepared by
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JULY, 2015

SECTION 00010

PROJECT DIRECTORY

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SECTION 01025

ALTERNATES

PART 1 -- GENERAL

1.01 SUMMARY

Division 0, Contract Requirements and Division 1, General Conditions apply to this Section.

1.02 DESCRIPTION

A. Work Included: Provide alternative bid proposals as described in this Section.

B. Procedures:

1. Provide alternative proposals to be added to or deducted from the amount of the Base Bid if the Owner accepts the corresponding change in scope.

2. Include within the alternative bid prices all costs, including labor, materials, installations, and fees.

3. Show the proposed alternative amounts opposite their proper description on the Contractor's Proposal.

C. Acceptance or Rejection:

1. Acceptance or rejection of Alternate Bids is subject to Owner's discretion. The Owner reserves the right to award any or none of the Alternate Proposal items as the Owner may deem to be in its best interests and without regard to the order in which such items are listed in the Proposal.

***** END OF SECTION *****

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SECTION 01040

PROJECT COORDINATION

PART 1 -- GENERAL

1.01 SUMMARY

Division 0, Contract Requirements and Division 1, General Conditions apply to this Section.

1.02 DESCRIPTION

A. Provide coordination required to ensure orderly progress and timely completion of the Work in conformance with the reviewed design and schedule.

B. Interfacing: It shall be solely the responsibility of the Contractor to make sure that each Subcontractor completes in a timely manner the assigned Work and that interfaces are prepared, are connected, and function as required.

1.03 QUALITY ASSURANCE

A. Familiarity with Contract Documents:

1) Contractor and Subcontractors shall conduct a study necessary to become completely familiar with requirements. Applicable requirements indicated or described in the Contract Documents, and the publications referred to, are a part of the Work required as though repeated in each such Section.

2) In the event discrepancies or conflicts are encountered, notify the Architect immediately. Where there is a discrepancy between different parts of the Contract Documents, including referenced codes and standards, the documents requiring the higher quality, the greater quantity, or the more difficult Work shall govern, unless determined otherwise by the Architect.

3) Promptly distribute required information to parties concerned and ensure the needed actions are taken.

B. Reporting: The Contractor's data transmittals to the Architect for the Architect's review, unless otherwise noted by the Contractor in his transmittals, will be construed as stipulating that the Contractor has thoroughly and completely reviewed and coordinated the data prior to transmittal.

1.04 SUBSTITUTION

Substitutions will be considered per Article 3.11.4 of the General Conditions, Project Manual Section 00600.

1.05 SUBMITTALS

In accordance with Article 3.11 of the General Conditions, Project Manual Section 00600.

1.06 REQUEST FOR INFORMATION

A. The General Contractor shall plan, schedule, coordinate and sequence Work so "Request for Information" (RFI's), if necessary, may be submitted to the Architect in a timely manner so as not to delay progress of Work. Submission of and responses to RFI's, with copies to Owner, shall be transmitted via FAX equipment.

B. No RFI will be answered until Contractor submits a "Construction Schedule". The Construction Schedule shall be based on the Specification Sections. The Construction Schedule shall establish starting and ending dates for Work in each Section. The Construction Schedule shall be updated monthly and delivered to Architect and Owner at the "Request for Payment" meeting. If Architect and Owner do not receive the

Construction Schedule by that date, Architect's response to pending RFI's will be delayed by the same number of days as the days the Construction Schedule is late.

C. The Architect shall endeavor to respond to a RFI within five (5) working days after receipt of RFI. If RFI requires consultant's acknowledgment, an additional five days shall be allowed for review. The Contractor shall accommodate this time frame in his timely submission of RFI's.

D. No damages for delay due to RFI response beyond allotted time will be allowed, unless Contractor can show that RFI was not foreseeable with proper planning, scheduling, coordination, and sequencing and the Architect's late response delayed timely purchase or delivery of equipment or material, or limited construction personnel from proceeding with their task(s), within previously listed Construction Schedule activity period(s).

PART 2 -- PRODUCTS

(None required)

PART 3 -- EXECUTION

3.01 PLANNING THE WORK

By thorough advance planning of activities, coordinate the following in addition to other coordination activities required:

1. Materials, services, and equipment purchasing.
2. Shipping.
3. Receipt and storage at the site.
4. Installation, including interface with related items.
5. Inspection and testing, to the extent required under the Contract.
6. Assistance in initial start-up and operational tests.
7. Completion of the Work, including removal and disposal of Contractor's surplus material and equipment, and final cleaning of structures and sites.

3.02 METHODS

Coordination methods, means and techniques used by the Contractor are at the Contractor's option, except that the Architect may disapprove Work completed by the Contractor or data submitted by the Contractor when, in the Architect's judgment, coordination has been inadequate to ensure the specified quality.

***** END OF SECTION *****

SECTION 01045

CUTTING AND PATCHING

PART 1 -- GENERAL

1.01 SUMMARY

Division – Contract Requirements and Division 1, General Conditions apply to this Section.

1.02 DESCRIPTION

A. Work Included: This Section establishes general requirements pertaining to cutting (including excavating), fitting, and patching of the Work. The Contractor shall do all cutting, fitting, or patching of Work as required to make its several parts come together properly and fit to receive or be received by work of other contractors shown upon, or reasonably implied by, the drawings and specifications for the completed structure as Architect may direct. In addition, the Contractor shall do the following:

1. Uncover work to provide for installing, inspecting, or both, of ill-timed work.
2. Remove and replace work not conforming to requirements of the Contract Documents.
3. Remove and replace defective work.

B. All cost caused by defective or ill-timed work shall be borne by Contractor.

C. Contractor shall not endanger any work by cutting, excavating, or otherwise altering work and shall not cut or alter work of any other contractor except with consent of Architect.

D. Related work:

1. Documents affecting work of this Section include, but are not necessarily limited to, Special Conditions, and Sections in Division 1 of these Specifications.
2. In addition to other requirements specified, upon the Architect's or Owner's request uncover work to provide for inspection of the covered work, and remove samples of installed materials for testing.

1.03 QUALITY ASSURANCE

Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.

1.04 SUBSTITUTIONS

Substitutions will be considered per Article 3.11 of the General Conditions, Project Manual Section 00600.

1.05 SUBMITTALS

Request for Architect's consent:

1. In accordance with Article 3 of the General Conditions, Project Manual Section 00600.
2. Prior to cutting which effects structural safety, submit written request to the Architect for permission to proceed with cutting. Obtain Structural Engineer approval prior to cutting.
3. Should conditions of the Work, or schedule, indicate a required change of materials or methods for cutting and patching, so notify the Architect and secure his written permission and the required Change Order prior to proceeding.

PART 2 - PRODUCTS

2.01 MATERIALS

For replacement of items removed, use materials complying with pertinent Sections of these Specifications.

PART 3 -- EXECUTION

3.01 SURFACE CONDITIONS

A. Inspection:

1. Inspect existing conditions, including elements subject to movement or damage during cutting, excavating, patching, and backfilling.

2. After uncovering the work, inspect conditions affecting installation of the new work.

B. Discrepancies:

1. If uncovered conditions are not as anticipated, immediately notify the Architect and secure needed directions.

2. Do not proceed until unsatisfactory conditions are corrected.

3.02 PREPARATION PRIOR TO CUTTING

Provide required protection including, but not necessarily limited to, shoring, bracing, and support to maintain structural integrity of the Work.

3.03 PERFORMANCE

Perform required excavating and backfilling as required under pertinent other Sections of these Specifications.

1. Perform cutting and demolition by methods, which will prevent damage to other portions of the Work and provide proper surfaces to receive installation of repair and new work.

2. Perform fitting and adjusting of products to provide finished installation complying with the specified tolerances and finishes.

***** END OF SECTION *****

SECTION 01200

PROJECT MEETINGS

PART 1 -- GENERAL

1.01 SUMMARY

A. Contract Requirements and General Conditions of Division Zero apply to this Section.

B. Purpose: To enable orderly review during progress of the Work, and to provide for systematic discussion of problems, the Architect will conduct project meetings throughout the construction period.

C. For those persons designated by the Contractor to attend and participate in project meetings, provide required authority to commit the Contractor to solutions agreed upon in the project meetings.

PART 2 -- PRODUCTS

(No products are required in this Section.)

PART 3 -- EXECUTION

3.01 MEETING SCHEDULE

A. Progress Review Meetings will be held every other week, except for the Pre-Construction Meeting, which will occur as described below. Additional meetings will be held as needed in order to accomplish the Project Schedule.

B. Progress Review Group will coordinate as necessary to establish mutually acceptable schedule for meetings.

3.02 MEETING LOCATION

The Architect will establish meeting location. To the maximum extent practicable, meetings will be held at the job site.

3.03 MEETING MINUTES

A. The Architect will compile minutes of each project meeting, and will furnish copies to the Contractor and to the Owner.

B. Recipients of copies may make and distribute such other copies as they wish.

C. Revisions to minutes:

1. Unless published minutes are challenged in writing prior to the next regularly schedule progress meeting, they will be accepted as properly stating the activities and decisions of the meeting.

2. Persons challenging published minutes shall reproduce and distribute copies of the challenge to all indicated recipients of the particular set of minutes.

3. Challenge to minutes shall be settled as priority portion of "old business" at the next regularly scheduled meeting.

3.04 PRE-CONSTRUCTION MEETING

A. A Pre-Construction Meeting will be held within 15 working days after the Owner has issued the Notice to Proceed.

1. Provide attendance by authorized representatives of the Contractor and major subcontractors.

2. The Architect will advise other interested parties, including the Owner, and request their attendance.

B. Minimum agenda: Data will be distributed and discussed on at least the following items:

1. Organizational arrangement of Contractor's forces and personnel, and those of subcontractors, materials, suppliers, and Architect.

2. Channels and procedures for communication.

3. Construction schedule, including sequence of critical work. (To be presented by Contractor)

4. Contract Documents, including distribution of required copies of original Documents and revisions.

5. Processing of Shop Drawings and Submittals to the Architect.

6. Processing of Requests for Information (RFI's).

7. Processing of Requests for Proposal, field decisions, and Change Orders.

8. Rules and regulations governing performance of the work.

9. Procedures for safety and first aid, security, quality control, housekeeping, and related matters.

10. Format and procedures for submitting "Application and Certificate for Payment" and "Schedule of Values" forms.

3.05 PROJECT MEETINGS

A. Attendance:

1. To the maximum extent practicable, assign the same person or persons to represent the Contractor at project meetings throughout progress of the Work.

2. Subcontractors, materials suppliers, and others may be invited to attend those project meetings in which their aspect of the Work is involved. The Contractor's relations with his subcontractors and materials suppliers and discussions relative thereto, are the Contractor's responsibility and normally are not part of project meetings content.

B. Minimum agenda:

1. Review, revise as necessary, and approve minutes of previous meetings.

2. Review progress of the Work since last meeting, including status of submittals for review.

3. Identify problems that will impede planned progress.

4. Develop corrective measures and procedures to regain planned schedule.

5. Complete other current business.

6. New items: To the maximum extent practicable, advise the Architect at least 24 hours in advance of project meetings regarding items to be added to the agenda.

***** END OF SECTION *****

SECTION 01410

TESTING LABORATORY SERVICES

PART 1 -- GENERAL

1.01 SUMMARY

Division 0, Contract Requirements and Division 1, General Conditions apply to this Section.

1.02 DESCRIPTION

A. Work Included:

1. Cooperate with the Owner's selected testing agency and all others responsible for testing and inspecting the Work.

2. The Contractor shall provide other testing and inspecting as in this Section and/or elsewhere in the Contract Documents.

B. Related Work:

1. Requirements for testing may be described in other Sections of the Project Manual.

2. Where no testing requirements are described, but the Owner decides that testing is required, the Owner may require the testing to be performed under current pertinent standards. Payment for testing will be made as described in this Section.

C. Work Not Included:

1. Selection of testing laboratory: The Owner will select a pre-qualified independent testing laboratory.

2. Payment for initial testing: The Owner will pay for all initial services of the testing laboratory except as further described in Article 2.01 of this Section.

1.03 QUALITY ASSURANCE

A. The testing laboratory will be qualified to the Owner's approval in accordance with ASTM E329.

B. Testing will be in accordance with all pertinent codes and regulations, and with selected standards of the American Society for Testing and Materials.

1.04 SUBSTITUTIONS

Substitutions will be considered per Article 3.11 of the General Conditions, Project Manual Section 00600.

1.05 SUBMITTALS

In accordance with Article 3 of the General Conditions, Project Manual Section 00600.

PART 2 -- PRODUCTS

2.01 PAYMENTS FOR TESTING INVOLVING NON-COMPLIANCE

When initial tests indicate non-compliance with the Contract Documents, the costs of initial tests as well as costs of subsequent retesting occasioned by the non-compliance will be paid by the Owner and the amount deducted from the Contract Sum.

2.02 SPECIFIC TESTS AND INSPECTIONS

A. Provide all tests and inspections required by the 2007 California Building Code, required by provisions of the Contract Documents, and such other tests and inspections as are dictated by the Architect.

B. Tests include, but are not necessarily limited to, those described in detail in Part 3 of this Section.

PART 3 -- EXECUTION

3.01 TAKING SPECIMENS

The testing personnel, unless otherwise provided in the Contract Documents, shall take all specimens and samples for testing. The testing laboratory will provide all sampling equipment and personnel. The testing laboratory will perform all deliveries of specimens and samples to the testing laboratory.

3.02 COOPERATION WITH TESTING LABORATORY

Provide access to the Work at all times and at all locations where the Work is in progress. Provide facilities for such access to enable the laboratory to perform its functions properly.

3.03 OWNER NOTIFICATION

A. The Contractor shall notify the Owner's representative a sufficient time in advance of the manufacture of material to be supplied by him under the Contract Documents, which must be tested according to the terms of the Contract, in order that the Owner may arrange for the testing of same at the source of supply.

B. Any material shipped by the Contractor from the source of supply prior to having satisfactorily passed such testing and inspection or prior to the receipt of notice from said representative that such testing and inspection will not be required and shall not be incorporated in the job.

3.04 TEST REPORTS

A copy of all test reports shall be forwarded to both the Owner and the Architect by the testing agency. Such reports shall include all tests made, regardless of whether such tests indicate that the material is satisfactory or unsatisfactory. Samples taken but not tested shall also be reported. Records of special sampling operations as required shall also be reported. The reports shall show that the material or materials were sampled and tested in accordance with the requirements of California Building Code and with the approved specifications. Test reports shall show the specified design strength. They shall also state definitely whether or not the material or materials tested comply with requirements of the Contract Documents.

3.05 SOIL INSPECTING AND TESTING

A. Make required inspections and tests including, but not limited to:

1. Visually inspect on-site and imported fill and backfill, making such tests and retests as are necessary to determine compliance with the Contract requirements and suitability for the proposed purpose.

2. Make field density tests on samples from in-place material as required.

3. As pertinent, inspect and test the scarifying and recompacting of cleaned subgrade; inspect the progress of excavating, filling, and grading; make 90% density tests at fills and backfills; and verify compliance with provisions of the Contract Documents and governmental agencies having jurisdiction.

B. Make and distribute necessary reports and certificates.

3.06 CONCRETE TESTING AND INSPECTIONS

A. General: Concrete testing and inspection shall comply with Chapter 19 requirements for "Testing and Inspection," CBC, Current Edition.

B. Portland cement:

1. Secure from the cement manufacturer Certificates of Compliance delivered directly to the concrete producer for further delivery directly to the testing laboratory.

2. Require the Certificates of Compliance to positively identify the cement as to production lot, bin or silo number, dating and routing of shipment, and compliance with specified standards.

3. If so required by the Architect, promptly provide such other specific physical and chemical data as requested.

4. One sample shall be taken for each 100 tons of cement except that when used in bulk loading ready-mix plants where separate bins for pre-tested cement are not available, grab samples shall be taken for each shipment of cement placed in the bin with not less than one sample being taken for each day's pour and such samples shall be subsequently tested if required by the Architect, Structural Engineer (or the Office of the State Architect.)

C. Aggregate:

1. Provide on test unless character of material changes, material is substituted, or additional test as requested by the Architect.

2. Sample from conveyor belts or batching gates at the ready-mix plant:

a. Sieve analysis to determine compliance with specified standards and grading;

b. Specific gravity test for compliance with specified standards.

D. Laboratory design mix:

1. Laboratory design mix shall comply with Structural Engineers requirements as stated in Section 02550 and 03300 as found in these specifications.

2. After acceptance of aggregate, and whenever character or source of materials is changed, provide mix design in accordance with ACI 613.

3. Provide designs for all mixes prepared by a licensed Civil Engineer registered in the State of California.

E. Molded concrete cylinders:

1. Provide three test cylinders for each 50 cubic yards, or fraction thereof, of each class of concrete of each day's placement.

2. Test one cylinder at seven days, one at 28 days, and one when so directed.

3. Report the mix, slump, gage, location of concrete in the structure, and test results.

4. Take specimens and make tests in accordance with the applicable ASTM standard specifications.

F. Core tests:

1. Provide only when specifically so directed by the Architect because of low cylinder test results.

2. Cut from locations directed by the Architect, securing in accordance with ASTM C42, and prepare and test in accordance with ASTM C39.

3. Cores shall be of a diameter determined by the Testing Laboratory but no less than 4" in diameter.

G. Placement inspections:

1. The Owner's Inspector shall inspect placement of concrete.

2. Throughout progress of concrete placement, make slump tests to verify conformance with specified slump.

3. Using all required personnel and equipment, throughout progress of concrete placement verify that finished concrete surfaces will have the level or slope that is required by the Contract Documents.

4. A project record shall be kept on the time and date of placing concrete in each portion of the structure. Such record shall be kept until the completion of the structure and shall be open to inspection by the Owner and his Representatives.

H. Batch plant inspections:

1. The quality and quantity of materials used in transit mixed concrete and in batched aggregate shall be continuously inspected at the location where materials are measured by a specifically approved inspector.

3.07 MORTAR AND GROUT TESTS

A. General: Mortar and grouts tests shall comply with Chapter 21 requirements of the CBC, Current Edition, for "Tests and Inspections."

B. At the beginning of all masonry work, at least one test sample of the mortar and grout shall be taken on three successive working days and at least one-week intervals thereafter. The samples shall be continuously stored in moist air until tested. They shall meet the minimum strength requirement given in Section 04100 of these Specifications.

C. Additional samples shall be taken whenever any change in materials or job conditions occur, or whenever in the judgment of the Architect, Structural Engineer (or the Division of the State Architect), such tests are necessary to determine the quality of the material.

3.08 CONCRETE REINFORCEMENT INSPECTION AND TESTING

A. General: Concrete reinforcement inspection and testing shall comply with Chapter 19 requirements for "Inspections of Welded Reinforcement Bars," CBC 1998.

B. Prior to use, test all reinforcement steel bars for compliance with the specified standards.

1. Where samples are taken from bundles delivered from the mill, with the bundles identified as to heat number, and provided the mill analysis accompanies the report, then, one tensile test and one bend test shall be made on a specimen from each 10 tons or fraction thereof for each size of reinforcing steel.

2. Tag identified steel at the supplier's shop. When steel arrives at the job site without such tags, test it as unidentified steel.

C. Unidentified Steel:

1. Have the testing laboratory select samples consisting of two pieces, each 18" long, of each size.

2. Have the testing laboratory make one tensile test and one bend test for each 2-1/2 tons or fraction thereof of each size of unidentified steel.

3. Costs of tests for unidentified steel will be paid by the Owner and deducted from the Contract sum.

D. Provide continuous inspection for all welding of reinforcement steel.

3.09 STRUCTURAL STEEL INSPECTING AND TESTING

A. Prior to use, test all structural steel for compliance with the specified standards.

1. Material identified by mill test reports, and certified by the testing laboratory, does not require additional testing. Require the supplier to furnish mill test reports to the laboratory for certification.

2. Tag identified steel at the supplier's shop. When steel arrives at the job site without such tags, test it as unidentified steel.

B. Unidentified Steel:

1. Have testing laboratory make one tensile test and one bend test for each five tons or fraction thereof of each shape and size of unidentified structural steel.

2. Costs of tests for unidentified steel will be paid by the Owner and deducted from the Contract sum.

C. Shop Welding:

1. Provide qualified testing laboratory inspector. The jurisdictional authority shall approve inspector.

2. On single pass welds, inspect after completion of welding prior to painting.

3. On multiple pass welds, and on butt welds with cover pass on the backside, provide continuous inspection.

D. Field Welding: Provide continuous inspection by a qualified testing laboratory inspector. The jurisdictional authority shall approve inspector.

3.010 ROOFING AND WATERPROOFING INSPECTING AND TESTING

A. Prior to start of membrane waterproofing and roofing installation, conduct a job site meeting attended by representatives of the installing subcontractors, the Contractor's field superintendent, the testing laboratory inspector, and the Architect, to agree upon procedures to be followed.

B. Prior to start of installation, verify that the materials at the job site comply with the specified standards, that the subcontractor is qualified to the extent specified, and that the installing personnel are fully informed as to procedures to be followed.

C. During installation, verify that materials are installed in strict accordance with the manufacturers' recommendations as accepted by the Architect.

D. When so directed by the Architect, make test cuts to verify conformance with the specified requirements.

3.011 SCHEDULES FOR TESTING

A. Establishing schedule:

1. By advance discussion with the testing laboratory selected by the Owner, determine the time required for the laboratory to perform its tests and to issue each of its findings.

2. Provide all required time within the construction schedule.

B. Adherence to schedule: When the testing laboratory is ready to test according to the established schedule, but is prevented from testing or taking specimens due to incompleteness of the Work, all extra charges for testing attributable to the delay may be back-charged to the Contractor and shall not be borne by the Owner.

3.012 INSPECTION BY THE OWNER

The Owner or his representative shall at all times have access to the shops wherein Work is being fabricated or assembled and inspection is required. The Contractor shall provide safe access for such inspection.

3.013 OWNER'S INSPECTOR

An inspector employed by the Owner in accordance with the requirements of California Building Code Amendments will be assigned to the Work. The work of construction in all stages of progress shall be subject to the personal continuous observation of the inspector. He shall have free access to any or all parts of the work at any time. The Contractor shall furnish the inspector reasonable facilities for obtaining such information as may be necessary to keep him fully informed respecting the progress and manner of the work and the character of the materials. Inspection of the work shall not relieve the Contractor from any obligation to fulfill this contract. The inspector and/or Owner shall have authority to stop the work whenever the provisions of the Contract Documents are not being complied with and the Contractor shall instruct his employees accordingly.

3.014 OWNER'S INSPECTOR -- FIELD OFFICE

The Contractor shall provide for the use of the Owner's Inspector a temporary office to be located as directed by the Inspector and to be maintained until the Owner authorizes removal. This office shall be of substantial waterproof construction with adequate natural light and ventilation by means of stock design windows. The door shall have a lock. The Contractor shall provide a table satisfactory for the study of plans and two chairs. The Contractor shall provide and pay for adequate electric lights, private local telephone service with a loud exterior bell, and adequate heat or air conditioning for this field office until completion of the Contract. Minimum area of field office shall be 144 square feet.

***** END OF SECTION *****

SECTION 01500

TEMPORARY FACILITIES AND CONTROLS

PART 1 -- GENERAL

1.01 SUMMARY

Division 0, Contract Requirements and Division 1, General Conditions apply to this Section.

1.02 DESCRIPTION

A. Work Included: Provide temporary facilities and controls needed for the Work including, but not necessarily limited to:

1. Temporary utilities such as heat and air conditioning, water, electricity, and telephone.
2. Field offices for the Contractor's personnel and the Owner's Inspector.
3. Sanitary facilities.
4. Enclosures such as tarpaulins, barricades, and canopies.
5. Temporary fencing of the construction site.
6. Project sign.

B. Related Work:

1. Documents affecting work of this Section include, but are not necessarily limited to, Special Conditions, and Sections in Division 1 of these Specifications.
2. Except that equipment furnished by subcontractors shall comply with requirements of pertinent safety regulations, such equipment normally furnished by the individual trades in execution of their portions of the Work is not part of this Section.
3. Permanent installation and hook-up of the various utility lines are described in other Sections.

1.03 PRODUCT HANDLING

Maintain temporary facilities and controls in proper and safe condition throughout progress of the work.

1.04 SUBSTITUTIONS

Substitutions will be considered per Article 3.11 of the General conditions, Project Manual Section 00600.

1.05 SUBMITTALS

In accordance with Article 3 of the General Conditions, Project Manual Section 00600.

PART 2 -- PRODUCTS

2.01 UTILITIES

A. Water:

1. Provide necessary temporary piping and water supply connections to existing systems on site so as not to disrupt current users and, upon completion of the Work, remove such temporary facilities.

B. Electricity:

1. Provide necessary temporary wiring and, upon completion of the Work, remove such temporary facility.
2. Provide area distribution boxes so located that the individual trades may furnish and

use 100 ft. maximum length extension cords to obtain power and lighting at points where needed for work, inspection and safety.

3. Provide for separate metering and pay for electricity used in construction.

C. Heating or Air Conditioning: Provide and maintain heat or air conditioning necessary for proper conduct of operations needed in the Work.

D. Telephone:

1. Make necessary arrangements and pay costs for installation and operation of telephone service to the Contractor's and Owner's Inspector offices at the site.

2. Make the telephone available to the Architect for use in connection with the Work.

2.02 FIELD OFFICES AND SHEDS

A. Contractor's Facilities:

1. Provide field office within the existing building construction areas adequate in size and accommodation for Contractor's offices, supply, and storage.

2. Within the Contractor's facilities, provide enclosed space adequate for holding project meeting. Furnish with table, chairs, facsimiles (FAX) Equipment and utilities.

B. Owner's Inspector Facilities:

1. Provide an office for the exclusive use by the Owner's Inspector. Office is to be a minimum of 144 sq. ft., equipped with electric lights, heating, air conditioning, a window and a secure, lockable door.

2. Furnish room with a plan table, desk, chair and bookcase. A telephone shall be installed using a separate, private line.

3. The cost of providing and furnishing the Inspector's office, complete with utilities, phone and phone service, will be paid by the Contractor.

2.03 ENCLOSURES

Provide and maintain for the duration of construction all scaffolds, tarpaulins, canopies, warning signs, steps, platforms, bridges, and other temporary construction necessary for proper completion of the Work in compliance with pertinent safety and other regulations.

2.04 TEMPORARY FENCING

Provide and maintain for the duration of construction a temporary fence of design and type needed to prevent entry onto the Work by the public.

2.05 PROJECT SIGNS

A. Provide a 4 foot x 8 foot project sign of exterior plywood mounted on two 4" x 4" posts. See Drawings for location and depiction of the Project Sign.

B. Except as otherwise specifically accepted by the Architect, do not permit other signs or advertising on the job site.

PART 3 -- EXECUTION

3.01 MAINTENANCE AND REMOVAL

A. Maintain temporary facilities and controls as long as needed for safe and proper completion of the Work.

B. Remove such temporary facilities and controls as rapidly as progress of the Work will permit, or as directed by the Architect.

***** END OF SECTION *****

SECTION 01710

CLEANING

PART 1 -- GENERAL

1.01 SUMMARY

Division 0, Contract Requirements and Division 1, General Conditions apply to this Section.

1.02 DESCRIPTION

Work Included: Throughout the construction period, maintain the buildings and site in a standard of cleanliness as described in this Section.

1.03 QUALITY ASSURANCE

A. Conduct daily inspection, and more if necessary, to verify that requirements for cleanliness are being met.

B. In addition to the standards described in this Section, comply with pertinent requirements of governmental agencies having jurisdiction.

1.04 SUBSTITUTIONS

Substitutions will be considered per Article 3.11 of the General Conditions, Project Manual Section 00600.

1.05 SUBMITTALS

In accordance with Article 3 of the General Conditions, Project Manual Section 00600.

PART 2 -- PRODUCTS

2.01 CLEANING MATERIALS AND EQUIPMENT

Provide required personnel, equipment, and materials needed to maintain the specified standard of cleanliness.

2.02 COMPATIBILITY

Use only the cleaning materials and equipment that are compatible with the surface being cleaned, as recommended by the manufacturer of the material.

PART 3 -- EXECUTION

3.01 PROGRESS CLEANING

A. General:

1. Retain stored items in an orderly arrangement allowing maximum access, not impeding traffic or drainage, and providing required protection of materials.

2. Do not allow accumulation of scrap, debris, waste material, and other items not required for construction of this work.

3. At least twice each month, and more often if necessary, completely remove all scrap, debris, and waste material from the job site.

4. Provide adequate storage for all items awaiting removal from the job site, observing requirements for fire protection and protection of the ecology.

B. Site:

1. Daily, and more often if necessary, inspect the site and pick up all scrap, debris, and waste material. Remove such items to the place designated for their storage.

2. Weekly, and more often if necessary, inspect all arrangements of materials stored on site. Re-stack, tidy, or otherwise service arrangements to meet the requirements above.

3. Maintain the site in a neat and orderly condition at all times.

C. Structures:

1. Weekly, and more often if necessary, inspect the structures and pick up all scrap, debris, and waste material. Remove such items to the place designated for their storage.

2. Weekly, and more often if necessary, sweep interior spaces clean.

a. "Clean," for the purpose of this subparagraph, shall be interpreted as meaning free from dust and other material capable of being removed by use of reasonable effort and a hand-held broom.

3. As required preparatory to installation of succeeding materials, clean the structures or pertinent portions thereof to the degree of cleanliness recommended by the manufacturer of the succeeding material, using equipment and materials required to achieve the necessary cleanliness.

4. Following the installation of finish floor materials, clean the finish floor daily (and more often if necessary) at all times while work is being performed in the space in which finish materials are installed.

a. "Clean," for the purpose of this subparagraph, shall be interpreted as meaning free from foreign material that, in the opinion of the Architect, may be injurious to the finish floor material.

3.02 FINAL CLEANING

A. "Clean," for the purpose of this article, and except as may be specifically provided otherwise, shall be interpreted as meaning the level of cleanliness generally provided by skilled cleaners using commercial quality building maintenance equipment and materials.

B. Prior to completion of the Work, remove from the job site all tools, surplus materials, equipment, scrap, debris, and waste. Conduct final progress cleaning as described in Article 3.01 above.

C. Site:

1. Unless otherwise specifically directed by the Architect, broom clean paved areas on the site and public paved areas adjacent to the site.

2. Completely remove resultant debris.

D. Structures:

1. Exterior:

a. Visually inspect exterior surfaces and remove all traces of soil, waste materials, smudges, and other foreign matter.

b. Remove all traces of splashed materials from adjacent surfaces.

c. If necessary to achieve a uniform degree of cleanliness, hose down the exterior of the structure.

d. In the event of stubborn stains not removable with water, the Architect

may require light sandblasting or other cleaning at no cost to the Owner.

2. Interior:

   a. Visually inspect interior surfaces and remove all traces of soil, waste materials, smudges, and other foreign matter.

   b. Remove all traces of splashed material from adjacent surfaces.

   c. Remove paint drippings, spots, stains, and dirt from finished surfaces.

3. Glass: Clean inside and outside.

4. Polished surfaces: To surfaces requiring routine application of buffed polish, apply the polish recommended by the manufacturer of the material being polished.

E. Schedule final cleaning as accepted by the Architect to enable the Owner to accept a completely clean Work.

3.03 CLEANING DURING OWNER'S OCCUPANCY

A. Prior to the Owner occupying the Work or any portion thereof prior to the completion of the total project by the Contractor, the Contractor shall perform final cleaning for the area to be turned over in accordance with the General Requirements of the Contract.

B. The Owner and Architect shall walk the limits of the area to be occupied and determine a punch list with expressly identified limits of area to be released. Once the area is accepted and occupied, the contractor shall be released from general cleaning except as required by the completion of the punch list items.

***** END OF SECTION *****

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SECTION 01720

PROJECT RECORD DOCUMENTS

PART 1 -- GENERAL

1.01 SUMMARY

Division 0, Contract Requirements and Division 1, General Conditions apply to this Section.

1.02 DESCRIPTION

Work Included:

1. Throughout the construction period, maintain an accurate record of changes in the Contract Documents, as described in Article 3.01 below.
2. Upon completion of the Work, transfer the recorded changes to a set of Record Documents, as described in Article 3.02 below.

1.03 QUALITY ASSURANCE

A. Delegate the responsibility for maintenance of Record Documents to one person on the Contractor's staff as accepted by the Architect.

B. Accuracy of records:

1. Thoroughly coordinate changes within the Record Documents, making adequate and proper entries on each page of Specifications and each sheet of Drawings and other Documents where such entry is required to show the change properly.
2. Accuracy of records shall be such that future searches for items shown in the Contract Documents may rely reasonably on information obtained from the accepted Project Record Documents.

C. Make entries within 24 hours after receipt of information that the change has occurred.

1.04 SUBSTITUTIONS

Substitutions will be considered per Article 3.11 of the General Conditions, Project Manual Section 00600.

1.05 SUBMITTALS

A. In accordance with Article 3 of the General Conditions, Project Manual Section 00600.

B. The Architect's acceptance of the current status of Project Record Documents may be a prerequisite to the Architect's approval of requests for progress payment and request for final payment under the Contract.

C. Prior to submitting request for final payment, submit the final Project Record Documents to the Architect and secure his acceptance.

1.06 PRODUCT HANDLING

A. Maintain the job set Record Documents completely protected from deterioration and from loss and damage until completion of the Work and transfer all recorded data to the final Project Record Documents.

B. In the event of loss of recorded data, use means necessary to again secure the data to the Architect's approval.

1. Such means shall include, if necessary in the opinion of the Architect, removal and replacement of concealing materials.
2. In such case, provide replacements to the standards originally required by the

Contract Documents.

PART 2 -- PRODUCTS

2.01 RECORD DOCUMENTS

A. Job Set: Promptly following receipt of the Owner's Notice to Proceed, secure from the Architect at no charge to the Contractor one complete set of all Documents comprising the Contract.

B. Final Record Documents of As-Built Conditions List: See Section 01900 – List of Project Close-Out Items for summary of Sections that require submittal of As-Built Documents.

C. Summary List of Reports of Tests: See Section 01900 – List of Project Close-Out Items for summary of Sections that require submittal of Tests by the Contractor.

PART 3 -- EXECUTION

3.01 MAINTENANCE OF JOB SET

A. Immediately upon receipt of the job set described in Paragraph 2.01-A above, identify each of the Documents with the title, "RECORD DOCUMENTS - JOB SET".

B. Preservation:

1. Considering the Contract completion time, the probable number of occasions upon which the job set must be taken out for new entries for examination, and the conditions under which these activities will be performed, devise a suitable method for protecting the job set to the acceptance of the Architect.
2. Do not use the job set for any purpose except entry of new data and for review by the Architect, until start of transfer of data to final Project Record Documents.
3. Maintain the job set at the Project Site unless otherwise requested by the Architect.

C. Making entries on Drawings:

1. Using an erasable colored pencil (not ink or indelible pencil), clearly describe the change by graphic line and note as required.
2. Date all entries.
3. Call attention to the entry by a "cloud" drawn around the area or areas affected.
4. In the event of overlapping changes, use different colors for the overlapping changes.

D. Make entries in the pertinent other Documents as accepted by the Architect.

E. Conversion of schematic layouts:

1. In some cases on the Drawings, arrangements of conduits, circuits, piping, ducts, and similar items, are shown schematically and are not intended to portray precise physical layout.
    a. Contractor shall determine final arrangement, subject to the Architect's acceptance.
    b. However, design of future modifications of the facility may require accurate information as to the final physical layout of items that are shown only schematically on the Drawings.
2. Show on the job set of Record Drawings, by dimension accurate to within one inch,

the centerline of each run of items such as are described in subparagraph 3.01-E-1 above.

a. Clearly identify the item by accurate note such as "cast iron drain", "galvanized water", and the like.

b. Show, by symbol or note, the vertical location of the item ("under slab", "in ceiling plenum", "exposed", and the like).

c. Make all identification sufficiently descriptive that it may be related reliably to the Specifications.

3. The Architect may waive the requirements for conversion of schematic layouts where, in the Architect's judgment, conversion serves no useful purpose. However, do not rely upon waivers being issued except as specifically issued in writing by the Architect.

3.02 FINAL PROJECT RECORD DOCUMENTS

A. The purpose of the final Project Record Documents is to provide factual information regarding all aspects of the Work, both concealed and visible, to enable future modification of the Work to proceed without lengthy and expensive site measurement, investigation, and examination.

B. Acceptance of recorded data prior to transfer:

1. Following receipt of the transparencies described in Paragraph 2.01-b above, and prior to start of transfer of recorded data thereto, obtain the Architect's acceptance of all recorded data.

2. Make required revisions.

C. Transfer of data to Drawings:

1. Carefully transfer change data shown on the job set of Record Drawings to the corresponding transparencies, coordinating the changes as required.

2. Clearly indicate at each affected detail and other Drawing a full description of changes made during construction, and the actual location of items described in subparagraph 3.01-E-1 above.

3. Call attention to each entry by drawing a "cloud" around the area or areas affected.

4. Make changes neatly, consistently, and with the proper media to assure longevity and clear reproduction.

D. Transfer of data to other Documents:

1. If the Documents other than Drawings have been kept clean during progress of the Work, and if entries thereon have been orderly to the acceptance of the Architect, the job set of those Documents other than Drawings will be accepted as final Record Documents.

2. If any such Document is not so accepted by the Architect, secure a new copy of that Document from the Architect at the Architect's cost for reproduction and handling, and carefully transfer the change data to the new copy to the acceptance of the Architect.

E. Review and Submittal:

1. Submit the completed set of Project Record Documents to the Architect as described in Paragraph 1.03-C above.

2. Participate in review meetings as required.

3. Make required changes and promptly deliver the final Project Record Documents to the Architect.

3.03 CHANGES SUBSEQUENT TO ACCEPTANCE

The Contractor has no responsibility for recording changes in the Work subsequent to Final Completion, except for changes resulting from work performed under Warranty.

***** END OF SECTION *****

SECTION 01730

OPERATION AND MAINTENANCE ITEMS

PART 1 -- GENERAL

1.01 SUMMARY

A. Division 0, Contract Requirements and Division 1, General Conditions apply to this Section.

B. Work Included: To aid the continued instruction of operating and maintenance personnel, and to provide a positive source of information regarding the products incorporated into the Work, furnish and deliver the data described in this Section and in pertinent other Sections of these Specifications.

1.02 QUALITY ASSURANCE

In preparing data required by this Section, use only personnel who are thoroughly trained and experienced in operation and maintenance of the described items, completely familiar with the requirements of this Section, and skilled in technical writing to the extent needed for communicating the essential data.

1.03 SUBTITUTIONS

Substitutions will be considered per Article 3.11 of the General Conditions, Project Manual Section 00600.

1.04 SUBMITTALS

A. In accordance with Article 3 of the General Conditions, Project Manual Section 00600.

B. Submit two copies of a preliminary draft of the proposed Manual or Manuals to the Architect for review and comments.

C. Unless otherwise directed in other Sections, or in writing by the Architect, submit (3) three copies of the final Manual to the Architect prior to indoctrination of operation and maintenance personnel.

PART 2 -- PRODUCTS

2.01 OPERATION MANUALS

A. Where instruction Manuals are required to be submitted under other Sections of these Specifications, prepare in accordance with the provisions of this Section.

B. Reference Chart: See Section 01900 – List of Project Close-Out Items for summary of Sections that require submittal of Operation Manuals.

C. Format:

1. Size: 8-1/2" x 11"
2. Paper: White bond, at least 20 lb. weight
3. Text: Neatly written or printed
4. Drawings: 11" in height preferable; bind in with text; fold-out acceptable; larger drawings acceptable but fold to fit within the Manual and provide a drawing pocket inside rear cover or bind in with text.
5. Flysheets: Separate each portion of the Manual with neatly prepared flysheets briefly describing contents of the ensuing portion; flysheets may be in color.
6. Binding: Use heavy-duty plastic or fiberboard covers with binding mechanism

concealed inside the Manual; 3-ring binders will be acceptable; all binding is subject to the Architect's acceptance.

7. Measurements: Provide all measurements in U.S. standard units such as feet-and-inches, lbs., and cfm.

D. Provide front and back covers for each Manual, using durable material accepted by the Architect, and clearly identified on or through the cover with at least the following information:

OPERATING AND MAINTENANCE INSTRUCTIONS:

_____

Name and Address of Work

_____

Name of Contractor

_____

General Subject of this Manual

_____

Space for Signature of the Architect and Date

E. Contents: Include at least the following:

1. Neatly typewritten index near the front of the Manual, giving immediate information as to location within the Manual of all emergency information regarding the installation.
2. Complete instructions regarding operation and maintenance of all equipment involved including lubrication, disassembly, and reassembly.
3. Complete nomenclature of all parts of all equipment.
4. Complete nomenclature and part number of all replacement parts, name and address of nearest vendor, and all other data pertinent to procurement procedures.
5. Copy of all guarantees and warranties issued.
6. Manufacturer's bulletins, cuts, and descriptive data, where pertinent, clearly indicating the precise items included in this installation and deleting, or otherwise clearly indicating, all manufacturer's data with which this installation is not concerned.
7. Such other data as required in pertinent Sections of these Specifications.

2.02 INSTRUCTION MANUALS

A. Preliminary:

1. Prepare a preliminary draft of each proposed Manual.
2. Show general arrangement, nature of contents in each portion, probable number of drawings and their size, and proposed method of binding and covering.
3. Secure the Architect's acceptance prior to proceeding.

B. Final: Complete the Manuals in strict accordance with the accepted preliminary drafts and the Architect's review comments.

C. Revisions: Following the indoctrination and instruction of operation and maintenance personnel, review all proposed revisions of the Manual with the Architect.

***** END OF SECTION*****

SECTION 02050

DEMOLITION & SALVAGE

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

Division 0, Contract Requirements and Division 1, General Requirements apply to this Section.

1.02 SECTION INCLUDES

A. The Contractor shall provide demolition and removal of existing structural materials, piping, fencing, electrical gear, equipment and structures in accordance with the requirements of the Contract Documents. The Contractor shall conduct demolition operations so that the existing facilities to remain and new work to be completed will not be damaged or disturbed.

B. It is vital that the existing utility system remains in operation at all times. Any proposed shut-down of any one of the systems facilities shall be coordinated and approved by the Construction Manager.

C. The Contractor shall repair or replace, without cost to the Owner and to the satisfaction of the Construction Manager, existing facilities disturbed or damaged during demolition and removal operations.

D. Immediately upon removal of demolition items, the Contractor shall legally dispose of demolished items not to be salvaged. Demolished items not to be salvaged shall be removed from the Site within two (2) calendar days of the commencement of demolition activities. Unless noted in the Plans, the Owner reserves the right to salvage any of the existing material or equipment. The Contractor, upon being notified by the Construction Manager, shall salvage and relocate to an Owner-designated, on-site storage area any materials or equipment the Owner desires to keep. The cost of the removal and relocation of the items shall be included in the contract price. No demolished items shall be sold while on the Owner's property.

E. The Contractor shall patch and seal abandoned openings and holes left as a result of removal and demolition to match the existing surrounding structure. Openings in concrete shall be patched with a non-shrink grout and if necessary grouted openings in floors shall be supported in a manner approved by the Construction Manager. Large openings shall be supported by ¾-inch minimum treated plywood bolted to the structure underneath the opening prior to the placement of the non-shrink grout.

F. Existing concrete structures exhibiting spalls or holes not related to previously installed mechanical equipment shall be patched with a non-shrink grout.

1.03 SUBMITTALS

Provide in accordance with Article 5 of the General Conditions.

1.04 PRODUCT HANDLING

Comply with the requirements of Section 01620.

1.05 WARRANTY:

Comply with the requirements of General Conditions Article 5.

END OF SECTION

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SECTION 02200

EARTHWORK

PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS

Division 0, Contract Requirements and Division 1, General Requirements apply to this SectioN.

1.02 SECTION INCLUDES

The Work of this Section includes all earthwork required for construction of the Work. Earthwork shall include, but not be limited to the loosening, removing, loading, transporting, depositing and compacting in its final location of all materials wet and dry, as required for the purposes of completing the work specified in the Contract Documents which shall include, but not be limited to: the sawcutting and removal of A.C. pavement, P.C.C. concrete and underlying material to a subbase design grade indicated on the Plans, the installation of subbase material to a subbase grade beneath A.C. pavement and concrete infrastructure, the excavation of pipeline trenches, the installation of backfill material within pipeline trenches, excavations for above-grade and below-grade structures, backfill requirements for material to be placed beneath above-grade and below-grade structures, backfill requirements for the areas surrounding above-grade and below-grade structures, backfilling of manholes and catch basins, construction of earth embankments, backfilling of depressed areas, abandoned ponds or depressed areas resultant from demolition, the disposal of excess excavated materials, borrow of materials to make up deficiencies for fills; and all other incidental earthwork, all in accordance with the requirements of the Contract Documents.

Principal work items included in this Section are:

A. Site preparation, clearing and grubbing.

B. Preparation of fill areas.

C. Excavation and controlled fill construction.

D. Structural excavation and backfills.

E. Disposal of surplus and/or unsuitable materials.

F. Dust control and drainage control.

G. Grading

H. Clean-up.

1.03 REFERENCE STANDARDS

ASTM C 131	Test Method for Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM D 75	Practice for Sampling Aggregates
ASTM D 422	Method for Particle-Size Analysis of Soils
ASTM D 698	Test Methods for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using 5.5-lb (2.49-kg) Rammer and 12-in (304.8-mm) Drop
ASTM D 1556	Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method
ASTM D 1557	Test Method for Moisture-Density Relations of Soils Using Rammer and Drop
ASTM D 1682	Test method for Breaking Load and Elongation of Textile Fabrics

ASTM D 2419	Test method for Sand Equivalent Values of Soil and Fine Aggregate
ASTM D 2487	Classification of Soils for Engineering Purposes
ASTM D 2922	Test Method for Density of Soil in Places by Nuclear Methods (Shallow Depth)
ASTM D 3017	Test method for Water Content of Soil and Rock in Place by Nuclear Methods
ASTM D 3776	Test Method for Mass Per Unit Area (Weight) of Woven Fabric
ASTM D 4253	Test Methods for Maximum Index Density and Unit Weight of Soils Using a Vibratory Plate
ASTM D 4254	Test Methods for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density
ASTM D 4751	Test Method for Determining the Apparent Opening Size of a Geotextile
CAL-OSHA	Title 8 General Industry Safety Orders

1.04 DEFINITIONS

A. Site: The property owned by the County of Riverside.

B. Controlled Fill: Compacted suitable fill material in all areas of the site requiring filling to grade as shown on the Plans.

C. Structural Fill: Compacted suitable fill material which will support a structure or some part of a structure. This includes support material for P.C.C. structures and pads

D. Structural Backfill: Compacted suitable material placed between the wall of a structure and construction excavation slope up to finished grade.

E. Suitable Material: As specified herein shall be any material imported or excavated from the cut areas that is, in the opinion of the Engineer, suitable for use in constructing fills.

F. Waste Excavation: Also Surplus Material. Material from project excavations which is not suitable for use in backfill or compacted fills or is in excess of that required to be used for backfill or to construct fills.

G. Pipe Zone Backfill: Material suitable for placement below or surrounding the pipe to a given vertical distance above the pipe as required by the pipe section.

H. Pipe Trench Backfill: Material suitable for placement from the pipe zone to finish grade or to pavement subbase material.

1.05 SITE INVESTIGATION

A. Soil Investigation Report: A Geotechnical Report has been prepared for this project and is available for review at the Construction Manager's office. The Soils Report is not a part of the Contract Documents and is for information only.

B. Contractor's Responsibility: The Contractor shall carefully examine the site and make all inspections necessary in order to determine the full extent of the work required to make the completed Work conform to the Plans and Specifications. The Contractor shall satisfy himself/herself as to the nature and location of the Work, conditions, the conditions of the existing ground surface, and the character of equipment and facilities needed prior to and during prosecution of the Work. The Contractor shall satisfy himself/herself as to the character, quality and quantity of surface and subsurface materials or obstacles to be encountered. The Contractor shall review water table conditions. Any inaccuracies or discrepancies between the actual field conditions and the Plans, or between the Plans and Specifications must be brought to the Engineer's attention in order to clarify the exact nature of the Work to be performed.

C. Existing Elevations: All existing elevations illustrated on the Plans are approximate. The Contractor shall recognize and acknowledge the condition that the bid lump sum price shall include all earthwork activities irrespective of the possible localized difference in contour elevations and actual ground; and that there will be no additional compensation from the Owner for earthwork changes, engineering, or field staking in this regard.

1.06 SAFETY

The Contractor shall familiarize himself/herself with, and shall at all times conform to, the regulations of the "OSHA General Industry Occupational Safety and Health Standards", and "OSHA Safety and Health Regulations for Construction Safety Orders" and "Trench Construction Safety Orders" of the State of California, Department of Industrial Relations, Division of Occupational Health and Safety. A copy of these documents shall be kept on the job site.

1.07 ENVIRONMENTAL SAFEGUARDS AND REGULATIONS

The Contractor shall comply with regulations in force at all times to prevent pollution of air and water. The Contractor shall be responsible for the construction of Project Environmental Control facilities in accordance with Section 01560 of Division 1, as applicable.

1.08 GEOTECHNICAL TESTING

The County of Riverside shall provide the services of a qualified Geotechnical Consultant to perform the required earthwork geotechnical testing specified within the contents of the Plans and Specifications. The cost for the Geotechnical Testing shall be borne by the County of Riverside. A copy of all tests shall be forwarded to the Engineer within four (4) days after the testing is complete. Geotechnical Earthwork Testing shall include in-situ native soil compaction testing, moisture-density soils testing, compaction testing, gradation testing, sand equivalent testing and similar testing. The Contractor shall bear the cost of retest and re-inspection of re-worked material due to faulty work.

1.09 STANDARDS FOR SOIL CLASSIFICATION, PROPERTIES AND TESTS

A. Earthwork and Embankment:

1. Classification - ASTM D 2487.
2. Physical Properties - ASTM D 854, D 2216.
3. Compaction - Modified Proctor ASTM D 1557-91.

B. Backfill for Trench:

1. Classification - ASTM D 2487.
2. Compaction - Modified Proctor ASTM D 1557-91.
3. Field Density Test - ASTM 1556-82; D 2937-83, D 2922-81 (as approved by Engineer).

C. Structural Fill and Backfill:

1. Classification - ASTM D 2487.
2. Attenberg Limits - PlastiOwner Index and Liquid Limit ASTM D 4318.
3. Compaction - Modified Proctor ASTM D 1557-91.
4. Physical Properties - ASTM D 854, D 2216.
5. Field Density Test - ASTM D 1556-82, D 2937-83, D 2922-81 (as approved by Engineer).

D. Controlled Fills:

1. Classification - ASTM D 2487.

2. Physical Properties - ASTM D 854, D 2216.
3. Compaction - Modified Proctor ASTM D 1557-91.
4. CBR - ASTM D 1883 (R-Value - ASTM 2844).
5. Field Density Test - ASTM D 1556-82, D 2937-83, D 2922-81 (as approved by Engineer).

E. Earth Embankments and Berms:

1. Classification - ASTM D 2487.
2. Physical Properties - ASTM D 854, D 2216.
3. Compaction - Modified Proctor ASTM D 1557-91
4. CBR - ASTM D 1883.
5. Field Density Test - ASTM D 1556-82, D 2937-83, D 2922-81 (as approved by Engineer).

F. Borrow:

1. Classification - ASTM D 2487.
2. Other properties - as determined by requirements at point of use.

G. Pipe Trenches:

1. Classification - ASTM D 2487.
2. Physical Properties - ASTM D 854, D 2216.
3. Compaction - Modified Proctor ASTM D 1557-91.
4. CBR - ASTM D 1883.
5. Field Density Test - ASTM D 1556-82, D 2937-83, D 2922-81 (as approved by Engineer).

1.10 COMPACTION

The maximum dry density, optimum moisture content and field density of each soil type used in the controlled compacted fill shall be determined as stated in Section 1.09 above.

1.11 INSPECTION

Observation and compaction tests shall be obtained by the Geotechnical Consultant engaged by the City of Yucaipa during the filling and compacting operations.

The Geotechnical Consultant shall be required to be present at the site on a full-time basis for several work activities and conduct intermittent testing for other work activities. The following chart indicates the earthwork items which will require full time or intermittent geotechnical testing.

ITEM NO.	ITEM	GEOTECHNICAL TESTING
1.	Excavation and scarification process	Full-time Inspection

ITEM NO.	ITEM	GEOTECHNICAL TESTING
2.	Backfill for Water Pipe, Storm Drainage Pipe, Sanitary Sewer Pipe and Irrigation Pipe Trenches. The Specification requires that the backfill be compacted in lifts. Additional lifts shall not be allowed to be placed until previous lifts have been satisfactorily tested for compaction.	Intermittent Testing
3.	Backfill for Electrical Conduit Trenches. The specification requires that the backfill be compacted in lifts. Additional lifts shall not be allowed to be placed until previous lifts have been satisfactorily tested for compaction. This requirement shall be strictly enforced and the Contractor shall be required to remove all backfill from the electrical conduit trench if this specification is violation.	Intermittent Testing
4.	Over excavation and recompaction of subgrade material	Intermittent Testing
5.	Installation of Class 2 Base for Site Grading.	Intermittent Testing
6.	Installation of Granular Sand for P.C.C. Infrastructure Subbase Material	Intermittent Testing
7.	Installation of Granular Sand for Water Pipelines, Stormwater Drainage Pipelines and Sanitary Sewer pipelines.	Intermittent Testing
8.	Existing Retention Basin Preparation	Intermittent Testing
9.	Building Pad Preparation	Intermittent Testing

1.12 WARRANTY

Comply with the requirements of General Condition Article 3.5 and Section 01740.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Engineered Fill Material: Materials for engineered fill shall consist of any material imported or excavated from the *cut areas* that, in the opinion of the Engineer, is appropriate for use in

constructing fills. The on-site soils are suitable for use as compacted fill. Native and imported materials should be placed in lifts no greater than 8 inches in loose thickness, uniformly moisture conditioned to between optimum moisture and 4% over optimum moisture, and re-compacted to at least 90% of ASTM D1557 maximum density, except in the building pad when it shall be at least 95%.

Imported fill soils should consist of non-expansive (Expansion Index less than 10) granular soils that meet the USCS classifications of SM, SP-SM, with a maximum rock size of 3 inches, and 5 to 35% passing the No. 200 sieve. The geotechnical engineer should approve the fill soils prior to importing.

In areas other than the building pad which are to receive concrete slabs and asphalt concrete pavement, the ground surface should be over-excavated to a depth of 12 inches, uniformly moisture conditioned to ±2% over optimum moisture, and re-compacted to at least 90% of ASTM D1557 maximum density.

Trench Backfill: On-site soil free of debris, vegetation, and other deleterious matter may be suitable for use as utility trench backfill. Backfill within roadways should be placed in layers not more than 6 inches in thickness, uniformly moisture conditioned to between optimum moisture and 4% over optimum moisture, and mechanically compacted to a minimum of 90% of the ASTM D1557 maximum dry density except for the top 12 inches of the trench which shall be compacted to at least 95%. Trench backfill should only be placed and compacted after encapsulating buried pipes with suitable bedding and pipe envelope material.

Representative samples of material to be used for fill shall be tested in the laboratory by the Geotechnical Engineer in order to determine the maximum density, optimum moisture content, sand equivalent and classification of the soil. In addition, the Geotechnical Engineer shall determine the approximate bearing value of a recompacted saturated sample by direct shear tests or other tests applicable to the particular soil.

During grading operations, soil types other than those analyzed in the report of the soil investigation may be encountered by the Contractor. The Geotechnical Engineer shall be consulted to determine the suitability of these soils. The Contractor shall bear the expenses of the Geotechnical investigation.

B. Structural Fill Material: Materials shall consist of crushed rocks, Class 2 Base, granular sand, decomposed granite (crusher fines) or fine gravel either imported or manufactured from excavated onsite rocky material.

The crushed aggregate, granular sand, decomposed granite (crusher fines) or fine gravel shall be uniformly graded. The following gradations shall apply:

1. Granular Sand:

   Clean granular sand free of clay, shale and deleterious material. Sand shall be compacted to 95 percent of maximum density at optimum water content per ASTM D 1557 unless otherwise noted on the Plans. The material shall conform to a sand equivalent of 30 or greater. The maximum amount of material passing the Number 200 sieve shall be 5 percent. The sand shall conform to the following gradation percentages:

SIEVE SIZE	GRANULAR SAND % PASSING
3/8"	100
No. 4	98-90

No. 8	90-75
No. 10	75-60
No. 16	60-50
No. 30	50-38
No. 40	38-29
No. 50	29-19
No. 100	19-7
No. 200	5-0

The Contractor shall supply a 5-gallon sample of sand material to the material testing laboratory within five (5) days after the Notice to Proceed is issued. The gradation, sand equivalent and maximum density of the sand material shall be determined. The test results shall be forwarded to the Engineer. The cost of testing shall be incurred by the Contractor. The gradation of the granular sand shall be determined and the test results forwarded to the Engineer prior to the delivery of the granular sand material to the Site. Prior to the placement of sand the native subbase grade shall be checked and approved by the Engineer.

Crusher fines shall be allowed to be utilized in lieu of sand if approved by the Engineer.

2. Crusher Fines:

Crusher fines shall consist of decomposed granite indigenous to the Imperial Valley. Crusher fines utilized for this project shall conform to the following gradation requirements:

SIEVE SIZE	PERCENT PASSING
5/8"	100
No. 4	80-100
No. 8	50-85
No. 30	30-50
No. 200	4-15

The sand equivalent shall be 20 or greater.

The Contractor shall supply a five-gallon sample of crusher fines material to the material testing laboratory within five (5) days after the Notice to Proceed is issued. The Gradation and Maximum Density of the crusher fines material shall be determined. The test results shall be forwarded to the Engineer for approval prior to the delivery of the material to the Site. The cost of the testing shall be incurred by the Contractor.

3. Fine Gravel:

Clean fine gravel free of clay, shale and deleterious material. Fine gravel shall be compacted with a plate compactor with one pass in maximum 1 foot lifts. Additional lifts shall not be added until previous lifts shall have been passed over by the plate

compactor. The maximum amount of material passing the ¼" Sieve shall be 2 percent. The fine gravel shall conform to the following gradation percentages:

SIEVE SIZE	PERCENT PASSING
3/8"	100
1/4"	0-2

The Contractor shall supply a five-gallon sample of fine gravel material to the material testing laboratory within five (5) days after the Notice to Proceed is issued. The Gradation and Maximum Density of the fine gravel material shall be determined. The test results shall be forwarded to the Engineer for approval prior to the delivery of the material to the Site. The cost of the testing shall be incurred by the Contractor.

4. Class 2 Base:

The Class 2 Base material shall conform to Caltrans Section 26, Latest Edition, for 25mm maximum base material. The gradation requirements are as follows:

SIEVE SIZE	CLASS 2 BASE % PASSING
1"	100
¾"	87-100
No. 4	30-65
No. 30	5-35
No. 200	0-12

The sand equivalent shall be 25 or greater. An angular aggregate is to be used. Class 2 Base material shall be compacted to 95 percent of maximum density according to ASTM D 1557, unless otherwise noted on the Plans or Details. The tolerance for the Class 2 Base between design subgrade elevation and actual subgrade elevation as constructed in the field shall be plus or minus 0.02 feet as referenced from the design subgrade. Prior to the placement of Class 2 Base, the native subbase grade shall be checked and approved by the Engineer. The native subbase grade shall be within plus or minus 0.05 feet of native subbase design grade prior to the placement of Class 2 Base.

The Contractor shall supply a 5-gallon sample of the Class 2 Base to the material testing laboratory within four (4) days of the Notice to Proceed. The material shall be delivered to the testing laboratory to determine the maximum density, gradation, R-value, sand equivalent and durability index of the Class 2 Base. A copy of the test results shall be forwarded to the Engineer by the Geotechnical Consultant for review. The gradation of the Class 2 Base shall be determined and the test results forwarded to the Engineer for approval prior to the delivery of the Class 2 Base material to the Site. *Class 2 Base utilizing recycled materials shall not be allowed.*

C. Structural Backfill Material: Structural Backfill Material shall consist of the same material listed with the Structural Fill Material item above.

PART 3 – EXECUTION

3.01 GENERAL

The Work performed under this Specification shall be constructed to the lines, grades, elevations, slopes and cross-sections indicated on the Plans, specified herein, and/or directed by the Owner. Slopes, graded surfaces, and drainage features shall present a neat uniform appearance upon completion of the Work.

It shall be the Contractor's responsibility (1) to maintain adequate safety measures and working conditions; and (2) to take all measures necessary during the performance of the Work to protect the entire project area and adjacent properties which would be affected by this Work from storm damage, flood hazard, caving of trenches and embankments, and sloughing of material, until final acceptance by the Owner. It shall be the Contractor's responsibility to maintain completed areas until the entire project area is in satisfactory compliance with the job specification.

Utility lines and structures indicated on the Plans which are to remain in service shall be protected by the Contractor from any damage as a result of his/her operation. Where utility lines or structures not shown on the Plans are encountered, the Contractor shall report them to the Owner before proceeding with the Work. The Contractor shall bear the cost of repair or replacement of any utility lines or structures which are broken or damaged by his/her operations.

3.02 REMOVALS, CLEARING AND GRUBBING

A. Clearing: Clearing consists of the complete removal of objectionable materials and obstructions above and below the ground surface including tree stumps, brush, grass, vegetative matter and other objectionable materials within the project limits. All brush and organic material shall be removed before placing any earth fills. It shall be the Contractor's responsibility to save and protect all trees that lie outside the construction area.

B. Grubbing: Grubbing consists of the complete removal of stumps, including tap roots or lateral roots 1-1/2 inches or more in diameter, and the removal of brush, grass or weeds to depths below the natural ground as specified herein. Stumps shall be grubbed to a depth of 3 feet and grass or weeds shall be grubbed to a depth of 6 inches below the natural ground surface, or to the depths as determined in the field by the Engineer at the time of construction.

C. Protection: Existing items not designated to be demolished or removed shall be protected from damage. Any such item damaged by the Contractor shall be restored or replaced immediately at the Contractor's expense.

D. Debris and Waste Material: All debris and waste material resulting from demolition, clearing and grubbing shall be removed from the site and disposed of by the Contractor.

3.03 DUST CONTROL

The Contractor shall take all steps possible to prevent and reduce dust arising from the construction activity. Section 01560 Project Environmental Controls elaborates on dust control requirements.

3.04 CARE OF DRAINAGE WATER

Contractor shall take care of drainage water from the construction operations, and of stormwater and/or wastewater reaching the construction area from any source, so that damage is not incurred to the excavation, pipe or structures. The Contractor shall be responsible for any damages to persons or property on or off the Site due to such drainage water or to the interruption or diversion of such stormwater or wastewater on account of his/her operation.

Such grading shall be accomplished as may be necessary to prevent surface water from flowing into excavations, and any water accumulating therein shall be removed by pumping or by other reviewed methods.

Protection of the site during construction shall be the responsibility of the Contractor. Completion of a portion of the project shall not preclude that portion or adjacent areas from the requirements for site protection until such time as the entire project is complete.

3.05 EXCAVATION

A. General: The Contractor shall perform all excavation necessary or required as illustrated on the Plans. The excavation shall include the removal and disposal of all earth materials of whatever nature encountered, which shall include both rock excavation and common excavation when both are present, and shall include the furnishing, placing and maintaining of shoring and bracing necessary to safely support the sides of the excavations. The Work shall also include all pumping, ditching and other required methods for the removal or exclusion of water. See Division 2 Section 02150 Sheeting, Shoring and Bracing.

B. Excavation for Structures: Structure excavation shall include the removal of all materials of whatever nature encountered, including all obstructions of any nature that would interfere with the proper execution and completion of the Work. The removal of such materials shall conform to the lines and grades shown on the Plans and/or herein specified. Temporary structure excavations shall at all times conform to the Requirements of the State of California, Division of Occupational Health and Safety, and pertinent requirements contained in referenced Geotechnical Investigation Report and Specification Section 02150 - Sheeting, Shoring and Bracing.

All trench excavations should conform to CalOSHA requirements for Type C soil. The contractor is solely responsible for the safety of workers entering trenches. Temporary excavations with depths of 4 feet or less may be cut nearly vertical for short duration. Temporary slopes should be no steeper than 1.5H:1V. Sandy soil slopes should be kept moist, but not saturated, to reduce the potential of raveling or sloughing.

Trench excavations deeper than 4 feet will require shoring or slope inclinations in conformance to Cal/OSHA regulations for Type C soil. Surcharge loads of stockpiled soil or construction materials should be set back from the top of the slope a minimum distance equal to the height of the slope. All permanent slopes should not be steeper than 3:1 to reduce wind and rain erosion. Protected slopes with ground cover may be as steep as 2:1. However, maintenance with motorized equipment may not be possible at this inclination.

Existing Retention Basin Preparation: Loose soils at the bottom of the retention basin should be removed. The exposed natural sub-grade should be scarified to a depth of 8 inches, uniformly moisture conditioned to ±2% over optimum moisture, and re-compacted to at least 90% of ASTM D1557 maximum density. Fill should be placed and compacted on benches cut into the side slopes of the basin.

Building Pad Preparation: The existing surface soils within the building pad area, outside the top of the basin side slopes, should be removed to 4 feet below the lowest foundation grade or 5 feet below the existing grade (whichever is deeper), extending five feet beyond all exterior wall/column lines. The exposed sub-grade should be scarified to a depth of 8 inches, uniformly moisture conditioned to ±2% over optimum moisture, and re-compacted to at least 90% of ASTM D1557 maximum density.

Loose soils existing below depths of 5 feet, such as those found to a depth of 10 feet within the south-east corner of the proposed building pad area (refer to soil boring B-4 location of the Geotechnical Investigation Report), will require removal and replacement with compacted fill. After the over-excavation of the loose soils, a minimum related compaction of 85% of the exposed soils in the building limits and five feet laterally beyond, should be present prior to placement of engineered fill. If 85% relative compaction is not encountered, then additional removals will be required until 85% relative compaction is attained. After verification of 85%

relative compaction of the exposed sub-grade soils, the engineered building pad should be constructed in accordance with above paragraph.

Moisture Control and Drainage: The moisture condition of the building pad should be maintained during trenching and utility installation until concrete is placed or should be rewetted before initiating delayed construction. If soil drying is noted, a 2 to 3 inch depth of water may be used in the bottom of footings to restore footing subgrade moisture and reduce potential edge left.

Auxiliary Structures Foundation Preparation: Auxiliary structures such as free standing or retaining walls should have the existing soil beneath the structure foundation prepared in the manner recommended for the building pad except the preparation needed only to extend 3 feet below and beyond the footing.

Contingent upon locations, all surfaces to receive compacted fill shall be scarified, brought to near optimum moisture content and compacted to required percentage of relative compaction as specified herein unless otherwise indicated on the Plans.

Rough grade excavations for structures and footings will be inspected by the Geotechnical Engineer to verify that the excavations extend into satisfactory soils and are free of loose and disturbed materials.

3.06 CONTROLLED FILL

A. General: Controlled fill shall consist of native material, granular sand, Class 2 Base, crusher fines or other material as indicated on the Plans. The subbase grade shall be excavated to within plus or minus 0.05 feet of design grade prior to the placement of controlled fill. The design subbase grade shall be field verified and approved by the Engineer prior to the placement of the controlled fill material. The Engineer shall determine the number and location of points to check for the subbase grade elevation compliance. Prior to the Engineer's inspection of the subbase grade, the Contractor shall establish bluetop stakes on a 20-foot by 20-foot grid across the area controlled fill is to be placed.

   If the controlled fill consists of native material it shall be placed in maximum 8-inch lifts and compacted to 90 percent of maximum density (except in the building pad when it shall be at least 95%) at optimum water content per ASTM D 1557 unless otherwise required by the Geotechnical Report. Additional native soil lifts shall not be placed until previous lifts have attained the specified compaction requirement and are approved by both the on-site geotechnical representative and the Engineer.

   Granular sand, Class 2 Base and crusher fine controlled fill material shall be placed in maximum 8-inch lifts and compacted to 95 percent of maximum density at optimum water content per ASTM D 1557. Additional granular sand, Class 2 Base or crusher fine lifts shall not be placed until previous lifts have attained the specified compaction requirement and are approved by both the on-site geotechnical representative and the Engineer.

B. Preparing Areas To Be Filled: All vegetation and objectionable material shall be removed by the Contractor from the surface upon which the fill is to be placed and any loose and porous soils shall be removed or compacted to a depth specified by the Geotechnical Engineer. The surface shall then be plowed or scarified to a minimum depth of 6 inches until the surface is free from uneven features that would tend to prevent uniform compaction by the equipment to be used.

   When placing fill in horizontal lifts adjacent to areas sloping steeper than 5:1 (horizontal:vertical), horizontal keys and vertical benches shall be excavated into the adjacent slope area. Keying and benching shall be sufficient to provide at least 6-foot wide benches and a minimum of 4 feet vertical bench height within the firm natural ground, firm bedrock or engineered compacted fill. No compacted fill shall be placed in an area subsequent to keying and benching until the area has been reviewed by the Geotechnical Engineer. Material generated by the benching operation shall be moved sufficiently away from the bench area to allow for the review of the horizontal bench prior to placement of fill.

After the foundation for the fill has been cleared, plowed or scarified, it shall be disced or bladed by the Contractor until it is uniform and free from large clods, brought to the proper moisture content and compacted as specified.

C. Placing, Spreading and Compacting Fill Material: The fill material shall be placed by the Contractor in thin layers that when compacted shall not exceed 8 inches for granular sand, Class 2 Base, crusher fines and native material. Each layer shall be spread evenly and shall be thoroughly mixed during the spreading to obtain uniformity of material in each layer.

When the moisture content of the fill material is below that required by the Geotechnical Engineer, water shall be added by the Contractor until the moisture content is increased or decreased as required for the specified compaction.

When the moisture content of the fill material is above that required by the Geotechnical Engineer, the fill material shall be aerated by the Contractor by blading, mixing, or other satisfactory methods until the moisture content is as required for the specified compaction.

After each layer has been placed, mixed and spread evenly, it shall be thoroughly compacted by the Contractor to the specified density. Compaction shall be accomplished by sheepsfoot rollers, vibratory rollers, multiple-wheel pneumatic-tired rollers or other types of acceptable compacting equipment. Equipment shall be of such design that it shall be able to compact the fill to the specified density. Compaction shall be continuous over the entire area and the equipment shall make sufficient passes over the material to ensure that the desired density has been obtained.

Compacted fill slopes shall be overbuilt and cut back to grade, exposing the firm, compacted inner core. The slopes shall be overbuilt a minimum of five feet (5'). If the desired compaction is not achieved, the existing slope shall be overexcavated and reconstructed. The amount of overbuilding shall be increased until the desired compaction is achieved on the slope. The Contractor shall provide thorough mechanical compaction to the outer edge of the overbuilt slope surface. There shall be no excessive loose soil on the slopes.

The Contractor shall provide and maintain adequate erosion control facilities during the construction of the fill areas. The erosion control facilities shall be maintained in optimum condition until the permanent drainage system and vegetation is complete. The facilities shall be inspected following significant rainfall, repairs made and excess sediment removed. It shall be the Contractor's responsibility to prevent the discharge of sediment off-site or to adjacent watercourses.

3.07. STRUCTURE FILL AND STRUCTURE BACKFILL MATERIAL

A. Placement of Structure Backfill: Before beginning backfilling, all foreign material, including water, shall be removed from the space to be backfilled and the area to be backfilled shall be inspected and approved by the Geotechnical Engineer. Sloping sides of the excavated space shall be stepped to prevent wedging action of the backfill against the structure. No backfill shall be placed around or upon any structure until it is proven that the concrete has attained satisfactory strength in accordance with the Division 3 of Technical Specifications and that the structure as a whole is adequate to receive backfill. The compressive strength shall be determined by tests on representative cylinders cured under conditions similar to those prevailing at the site.

B. General: Structure fill and structure backfill shall consist of granular sand, Class 2 Base, crusher fines or other material as indicated on the Plans. The subbase grade shall be excavated to within plus or minus 0.05 feet of design grade prior to the placement of structure fill and structure backfill. The design subbase grade shall be field verified and approved by the Engineer prior to the placement of the structure fill or structure backfill material. The Engineer shall determine the number and location of points to check for the subbase grade elevation compliance. Prior to the Engineer's inspection of the subbase grade the Contractor shall establish bluetop stakes on a 20-foot by 20-foot grid across the area which structure backfill is to be placed.

Granular sand, Class 2 Base and crusher fine structure fill and structure backfill material shall be placed in maximum 8-inch lifts and compacted to 95 percent of maximum density at optimum water content per ASTM D 1557. Additional granular sand, Class 2 Base or crusher fine lifts shall not be placed until previous lifts have attained the specified compaction requirement and are approved by both the on-site geotechnical representative and the Engineer.

C. Placing, Spreading and Compacting Fill Material: The structural fill and structural backfill material shall be placed by the Contractor in thin layers that when compacted shall not exceed 8 inches. Each layer shall be spread evenly and shall be thoroughly mixed during the spreading to obtain uniformity of material in each layer.

When the moisture content of the fill material is below that required by the Geotechnical Engineer, water shall be added by the Contractor until the moisture content is as required for the specified compaction.

When the moisture content of the fill material is above that required by the Geotechnical Engineer, the fill material shall be aerated by the Contractor by blading, mixing, or other satisfactory methods until the moisture content is as required for the specified compaction.

After each layer has been placed, mixed and spread evenly, it shall be thoroughly compacted by the Contractor to the specified density. Compaction shall be accomplished by sheepsfoot rollers, vibratory rollers, multiple-wheel pneumatic-tired rollers or other types of acceptable compacting equipment. Equipment shall be of such design that it shall be able to compact the fill to the specified density. Compaction shall be continuous over the entire area and the equipment shall make sufficient passes over the material to ensure that the desired density has been obtained.

Compacted fill slopes shall be overbuilt and cut back to grade, exposing the firm, compacted inner core. The slopes shall be overbuilt a minimum of five feet (5'). If the desired compaction is not achieved, the existing slope shall be overexcavated and reconstructed. The amount of overbuilding shall be increased until the desired compaction is achieved on the slope. The Contractor shall provide thorough mechanical compaction to the outer edge of the overbuilt slope surface. There shall be no excessive loose soil on the slopes.

The Contractor shall provide and maintain adequate erosion control facilities during the construction of the fill areas. The erosion control facilities shall be maintained in optimum condition until the permanent drainage system and vegetation is complete. The facilities shall be inspected following significant rainfall, repairs made and excess sediment removed. It shall be the Contractor's responsibility to prevent the discharge of sediment off-site or to adjacent watercourses.

3.08 ESTABLISHMENT OF SUBBASE GRADE, SUBGRADE OR FINISH GRADE

Finish Grade is defined as the finish surface grade. For instance, the top of an A.C. or P.C.C. paved surface is referred to as finish grade.

Subgrade is defined as the grade of the material beneath the finish surface. For instance, the top of Class 2 Base grade beneath an A.C. or P.C.C. paved surface is referred to as subgrade.

Subbase is defined as the grade of the material beneath the base material. For instance, the top of native material beneath the Class 2 Base subgrade material of an A.C. or P.C.C. paved roadway is the subbase grade.

Finish grade surfaces are to be graded to within plus or minus 0.02 feet from design grade as illustrated on the Grading Plans. The Contractor shall place bluetop stakes on a 20-foot x 20-foot grid across the top of the finish grade surface during final grading. A bluetop stake is defined as a stake placed at the finish grade elevation within the tolerance of plus or minus 0.02 feet of finish grade. The Engineer shall obtain elevations across finish grade surfaces at locations determined by the Engineer prior to accepting and approving the finish grade surfaces. The Contractor shall rework areas not conforming to the finish surface grade tolerance as required. Work items to

occur after the establishment of finish grade shall not occur until the Engineer has approved the finish grade.

Subgrade surfaces are to be graded to within plus or minus 0.02 feet from design grade as illustrated on the Grading Plans. Bluetop stakes shall be placed on a 20-foot x 20-foot grid pattern across rectangular or square facilities such as parking lots and access roads. The Engineer shall obtain elevations across the subgrade surfaces at locations determined by the Engineer prior to accepting and approving the subgrade surfaces. The Contractor shall rework areas not conforming to the subgrade tolerance as required. Work items to occur after the establishment of subgrade shall not occur until the Engineer has approved the finish subgrade.

Subbase surfaces are to be graded to within plus or minus 0.05 feet of subbase design grade as illustrated on the Grading Plans. Bluetop stakes shall be placed on a 20-foot x 20-foot grid pattern across rectangular or square facilities such as parking lots, access roads, sludge beds, structures, building pads, etc. The Engineer shall obtain elevations across the subbase surfaces at locations determined by the Engineer prior to accepting and approving the subbase surfaces. The Contractor shall rework areas not conforming to the subbase design grade tolerance as required. Work items to occur after the establishment of subbase grade shall not occur until the Engineer has approved the subbase grade.

3.09 COMPACTION TEST SCHEDULE

The following **compaction test(s)** shall apply to this project:

ITEM NO.	ITEM
1.	Excavation and scarification process
2.	Backfill for Water Pipe, Storm Drainage Pipe, Sanitary Sewer Pipe and Irrigation Pipe Trenches. The Specification requires that the backfill be compacted in lifts. Additional lifts shall not be allowed to be placed until previous lifts have been satisfactorily tested for compaction.
3.	Backfill for Electrical Conduit Trenches. The specification requires that the backfill be compacted in lifts. Additional lifts shall not be allowed to be placed until previous lifts have been satisfactorily tested for compaction. This requirement shall be strictly enforced and the Contractor shall be required to remove all backfill from the electrical conduit trench if this specification is violation.
4.	Over excavation and Recompaction of Subgrade Material
5.	Installation of Class 2 Base for Site Grading.
6.	Installation of Granular Sand for P.C.C. Infrastructure Subbase Material

7. Installation of Granular Sand for Water Pipelines, and Stormwater Drainage Pipelines and Sanitary Sewer pipelines.

8. Existing Retention Basin Preparation

9. Building Pad Preparation

3.10 CLEAN-UP

Upon completion of Work in this Section, all rubbish and debris shall be removed from the site. All construction equipment and implements of service shall be removed and the entire area involved shall be left in a clean, neat and acceptable condition.

*****END OF SECTION*****

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SECTION 02221

TRENCHING, BACKFILLING AND COMPACTING

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

Division 0, Contract Requirements and Division 1, General Requirements apply to this Section.

1.02 DESCRIPTION

Requirements specified in the Technical and Special Conditions form a part of this Section. The Work of this Section includes all labor, machinery, construction equipment and appliances to perform in a professional manner all trench excavation and backfill work illustrated on the Plans and herein specified. Principal items included: Trench excavation, backfill and compaction.

1.02 SAFETY

The Contractor shall be familiarized with, and shall at all times conform to all applicable regulations of "Excavations, Trenching, and Shoring" of OSHA Safety and Health Regulations for Construction, "General Construction Safety Orders" and "Trench Construction Safety Orders" of the State of California, Department of Industrial Relations, Division of Occupational Health and Safety.

1.03 INSPECTION AND CONTROL

The County of Riverside shall provide inspection and testing by a Geotechnical Engineer approved by the County of Riverside engaged and paid for by the County of Riverside. In this regard, a Geotechnical Engineer shall be engaged by the Owner, who shall act as the direct representative of the Owner in geotechnical work, to perform inspection of the removal and replacement of unsuitable materials, all excavations, and the placement and compaction of all fills and backfills within the limits of earthwork on this Project. Costs for all such inspections and tests will be paid by the County of Riverside, and Contractor shall bear the cost of retest and re-inspection of reworked fills and backfills due to compaction test failure.

1.04 REQUIREMENTS

A. General:

1. The Work performed under this Specification shall be constructed to the lines, grades, elevations, slopes and cross-sections indicated on the Plans, specified herein, and/or directed by the Engineer in writing. Slopes, graded surfaces, and drainage features shall present a neat, uniform appearance upon completion of the Work.

2. It shall be the Contractor's responsibility (1) to maintain adequate safety measures and working conditions; and (2) to take all measures necessary during the performance of the Work to protect the entire project area and adjacent properties which would be affected by this Work from storm damage, flood hazard, caving of trenches, cavings of excavations, and embankments, and sloughing of material, until final acceptance by the Owner. It shall be the Contractor's responsibility to maintain completed areas in good condition until the entire project area is in satisfactory compliance with the Project Specifications.

3. Contractor shall be responsible for the excavation and disposition of unsuitable or surplus material by approved means of conveyance away from the working area.

B. Protection of Existing Utilities:

1. Utilities: Unless otherwise illustrated on the Plans or stated in the Specifications, all utilities, both underground or overhead, shall be maintained in continuous service

throughout the entire contract period. The Contractor shall be responsible and liable for any damages to or interruption of service caused by the construction.

If the Contractor desires to simplify his operation by temporarily or permanently relocating or shutting down any utility or appurtenance, he shall make the necessary arrangements, agreements and approvals with the utility purveyor, Owner and Engineer and shall be completely responsible for all costs concerned with the relocation or shutdown and reconstruction. All property shall be reconstructed in its original or new location as soon as possible and to a condition at least as good as its previous condition. This cycle of relocation or shutdown and reconstruction shall be subject to inspection and approval by the Engineer, Owner and the utility purveyor.

The Contractor shall be entirely responsible for safeguarding and maintaining all conflicting utilities that are illustrated on the Plans. This includes overhead wires and cables and their supporting poles whether they are inside or outside of the open trench. If, in the course of work, a conflicting utility line that was not illustrated on the Plans is discovered, it shall be brought to the immediate attention of the Engineer for a determination regarding alternatives to the conflict.

2. Building, Foundations and Structures: Where trenches are located adjacent to buildings, foundations and structures, the Contractor shall take all necessary precaution against damage to them. The Contractor shall be liable for any damage caused by the construction except where authorized in the Special Conditions or in writing by the Engineer. Water settling of backfill material in trenches adjacent to structures will not be permitted.

3. Electronic, Telephonic, Telegraphic, Electrical, Oil and Gas Lines: These underground facilities shall be adequately supported by the Contractor. Support for plastic pipe shall be continuous along the bottom of the pipe. Support for metal pipe and electrical conduit may be continuous or nylon webbing may be used for suspension at no greater than ten foot (10') intervals. The Contractor shall avoid damaging the plastic pipe, pipe ways or conduits during trench backfilling and during foundation and bedding placement.

1.05 WARRANTY

Comply with the requirements of General Condition Article 5.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Granular Sand Material: Granular sand material shall consist of imported granular sand complying with Section 02200, of the specifications.

B. Crusher Fines: Crusher fines material shall consist of imported decomposed granite complying with Section 02200, of the specifications.

C. Class 2 Base Material: Class 2 Base material shall consist of imported virgin (not recycled) Class 2 Base complying with Section 02200, of the Specifications.

D. Concrete: 4000 PSI compressive strength, minimum, as specified in Division 3, Concrete, of the Specifications.

E. Pipelines: Use materials shown on the Plans and as specified in other pertinent Sections of the Specifications.

PART 3 - EXECUTION

3.01 TRENCH EXCAVATION

A. Excavation for Trenches: Shall include the removal of all material of any nature for the installation of the pipe or facility and shall include the construction of trench shoring and stabilization measures, timbering and all necessary installations for dewatering.

B. Minimum Width of Trench: The minimum width of pipe trenches, measured at the crown of the pipe, shall not be less than 12 inches greater than the exterior diameter of the pipe, exclusive of bells and the minimum base width of such trench shall be not less than 12 inches greater than the exterior diameter of the pipe, exclusive of special structures or connections, and such minimum width shall be exclusive of all trench supports.

C. Maximum Width of Trench: The maximum allowable width of trench for all pipelines measured at the top of the pipe shall be the outside diameter of the pipe (exclusive of bells or collars) plus 16 inches, and such maximum shall be inclusive of all timbers. A trench wider than the outside diameter plus 16 inches may be used without special bedding if the Contractor, at his expense, furnishes pipe of the required strength to carry the additional trench load. Such modifications shall be submitted for the Engineer's review. Whenever such maximum allowable width of trench is exceeded for any reason, except as provided for on the Plans or in the Specifications, or by the written direction of the Engineer, the Engineer may, at its discretion, require that the Contractor, at his own expense for all labor and materials, cradle the pipe in 4000 PSI compressive strength concrete, or other approved pipe bedding.

D. Maximum Length of Open Trench: Except by special permission by the Engineer only that amount of open trench shall be permitted, which shall allow for that amount of pipeline construction, including excavation, construction of pipeline, and backfill in any one location, which can be completed in one day; however, maximum length of open trench shall never exceed 600 feet. This length includes open excavation, pipe laying and appurtenant construction and backfill which has not been temporarily resurfaced.

E. Trench Side Slopes:

1. Temporary trench excavations shall at all times conform to the safety requirements hereinbefore specified in Section entitled "Safety".

2. Loose cobbles or boulders shall be removed from the sides of the trenches before allowing workmen into the excavation, or the trench slopes must be protected with screening or other methods. Trench side slopes shall be kept moist during construction to prevent local sloughing and raveling. Surcharge loads due to construction equipment shall not be permitted within 10 feet of the top of any excavated slope.

3. If the Contractor elects to shore or otherwise stabilize the trench sides, he shall file with the Engineer copies of drawings for same prepared, signed and stamped by a Civil Engineer duly registered in the State of California before commencing excavation.

F. Excess Trench Excavation: If any trench, through the neglect of the Contractor, is excavated below the bottom grade required, it shall be refilled to the bottom grade, at the Contractor's expense for all labor and material, with granular sand material compacted to a firm stable foundation.

3.02 BRACING TRENCHES

The sides of the trenches shall be supported with plank sheeting and bracing in such a manner as to prevent caving of the sides of the trench. Space left by withdrawal of sheeting or shoring shall be filled completely with dry granular material blown or rammed in place. Trench shoring shall be completed per the recommendations of the Geotechnical Report and OSHA Standards.

3.03 PIPING BEDDING

The Contractor shall excavate to four inches (4") below the bells or couplings for the full width of the trench and shall place four inches (4") of granular material upon which the pipe is to be laid, unless indicated otherwise on the Plans. Construct pipe bedding as indicated on the Plans.

At pipe subgrade, if foundation soil in trench is soft, wet, spongy, unstable or does not afford solid foundation for pipe, the Contractor shall excavate as directed by the Engineer and provide stable base by excavating any unsuitable material 18" minimum below the subgrade base or as the Engineer determines is necessary for placement of pipe bedding. A filter fabric shall be placed in the trench bottom and along the trench sidewalls in the pipe zone to the top of the pipe zone material. A crushed rock material shall be placed at the bottom of the trench and sidewalls of the pipe to a point 1 foot above the pipe. The crushed rock material shall be hand tamped in 16-inch lifts along the sidewalls. The crushed rock shall be compacted with a plate compactor in minimum 6 inch lifts beneath the pipe and over the top of the pipe.

Where rock is encountered in the trench, the Contractor shall excavate to a minimum 18 inch depth below subgrade or as the Engineer determines is necessary, and shall construct a base by placing crushed rock bedding upon which a subgrade can be prepared.

Before any pipe is lowered in place, the trench bottom shall be prepared so that each pipe shall be supported for the full length of the barrel with full bearing on the bottom segment of the pipe equal to a minimum of one-half (1/2) of the pipe OD, and a width equal to the trench width. All adjustments in line and grade shall be made by scraping away or filling and tamping in under the barrel of the pipe. Wedging or blocking is not permitted.

The pipe bedding shall be compacted to a minimum of 90 or 95 percent relative compaction as hereinafter specified or as required by the Plans.

3.04 BACKFILLING PIPE TRENCHES

A. Backfilling Pipe Zone: Backfill material for the pipe zone shall consist of imported granular material or two sack cement/sand slurry as required by the Plans. Place material in the trench simultaneously on each side of the pipe for the full width of the trench and the depth of the pipe zone in layers 6 inches in depth. Each layer shall be thoroughly compacted by tamping. In all cases, backfilling of the pipe zone must be accomplished by hand. Particular attention shall be given to underside of the pipe and fittings to provide a firm support along the full length of the pipe. The pipe zone shall be considered to extend 12 inches above the top of the pipe unless otherwise illustrated on the Plans, and shall be compacted in the trench to a relative compaction of not less than 90 or 95 percent of maximum density per ASTM D 1557 as illustrated on the Plans. Care shall be taken not to damage pipe and fittings or special coatings on the pipe and fittings.

    1. Use of material other than those specified shall be reviewed by the Engineer prior to use. The Contractor shall bear all cost of removal of rejected material, its hauling to an authorized disposal site, and cost of providing required material to complete the bedding and backfilling.

B. Backfilling Pipe Trench: After the pipe has been laid in the trench and has been inspected and approved, and backfilling in the pipe zone is complete and compacted, the remainder of the trench may be backfilled. The backfill material shall be granular sand or Class 2 Base as specified in Paragraph 2.01 and illustrated on the Plans. Care shall be taken to ensure that no voids remain under, around or near the pipe.

    1. The Contractor shall incur the expense to remove and dispose of the excess trench excavation material displaced by the trench import material and include the costs in the bid.

C. Compaction: The maximum dry density and optimum moisture content of each soil type used in the controlled compacted fill shall be determined by ASTM D 1557-91. Field density tests

shall be determined in accordance with ASTM D 1556-82, ASTM D 2937-83 and ASTM D 2922-81.

D. Placement and Compaction of Trench Backfill: The placement and compaction of all trench backfill shall be as follows:

1. Mechanically Compacted Backfill: With approval of the Engineer, backfill shall be mechanically compacted by means of tamping rollers, sheepsfoot rollers, pneumatic tire rollers, vibrating rollers, or other mechanical tampers to 90 or 95 percent relative compaction as illustrated by the Plans. Impact-type pavement breakers (stompers or hydro-hammers) shall not be permitted over any pipe. Permission to use specific compaction equipment shall not be construed as guaranteeing or implying that the use of such equipment will not result in damage to adjacent ground, existing improvements or improvements installed under the Contract. The Contractor shall make his own determination in this regard. Backfill shall be placed in horizontal layers not exceeding eight inches (8"). Each layer shall be evenly spread, the moisture content brought to near optimum condition and then tamped or rolled until the specific relative compaction has been attained. Additional backfill lifts shall not be placed until previous lifts have been satisfactorily compacted and tested and approved by the Engineer.

3.05 CENTRAL PIPELINE INSTALLATION REQUIREMENTS

A. Depth of Pipe: Unless otherwise illustrated on the Plans, all pipelines shall have coverage of at least 36 inches between the top of the pipe and the finished surface. All gravity line invert elevations and locations illustrated on the Plans are intended to be exact and any change in alignment and grade shall be reviewed in accordance with the Contract Documents to the satisfaction of the geotechnical testing representative and Engineer. All force and gravity mains shall have 1 foot vertical clearance between themselves and all other utilities. At all water main, sewer and stormwater crossings, both gravity and force mains shall have 20 linear feet of concrete encasement centered at the crossing as required by the State of California Department of Health.

B. Changes in Line and Grade: In the event obstructions not shown on the Plans, are encountered during the progress of the Work, which will require alterations to the Plans, the Engineer shall issue the necessary revisions to the Plans and order the necessary deviation from the line or grade. The Contractor shall not make any deviation from the specified line and grade without prior review and approval by the Engineer. Should any deviations in line and grade be permitted by the Engineer in order to reduce the amount of rock excavation or for other similar convenience to the Contractor, any additional costs for thrust blocks, valves, air and vacuum valve assemblies, blow-off assemblies, extra pipe footage, concrete, sewer structures, or other additional costs shall be borne by the Contractor.

1. Contractor shall include in his Bid provisions to cover any deviation from the invert grade shown on the Plans to facilitate the extra depth required to avoid possible conflicts between existing or new gravity pipelines and other utilities with new water, stormwater or sewer forcemains.

C. Pipe Installation:

All pipe and fittings, and accessories furnished by the Contractor shall be new material free from rust or corrosion. All piping and fittings shall be cleaned on the inside when installed and the Contractor shall take all necessary precautions to insure that the lines are kept free of any foreign matter and dirt until the work is completed. All pipes shall be carefully placed and supported at the proper lines and grades as shown on the Plans. Piping runs shown on the Plans shall be followed as closely as possible, except for minor adjustments as approved by the Engineer to avoid other piping or structural features. Bedding material shall first be placed so that the pipe is supported for the full length of the barrel with full bearing on the bottom segment of the pipe. Hunching of the pipe shall not be allowed. Pipe will be carefully inspected in the field before and after laying. If any cause for rejection is discovered in a pipe

after it has been laid, it shall be subject to rejection by the Engineer. Any corrective work shall be approved by the Engineer. Pipe shall be laid true to line and grade with uniform bearing under the full length of the barrel of the pipe. Suitable excavation shall be made to receive the bell or collar which shall not bear upon the subgrade or bedding. Any pipe which is not in true alignment or shows any undue settlement after laying shall be taken up and relaid at the Contractor's expense. Pipe shall be laid upgrade with the socket ends of the pipe upgrade unless otherwise authorized by the Engineer. Pipe sections shall be laid and joined in such a manner that the offset of the inside of the pipe at any joint will be held to a minimum at the invert. The maximum horizontal offset at the invert of the pipe shall be 1% of the inside diameter of the pipe or 0.02 feet, whichever is smaller. The vertical grade shall be ± 0.02 feet of the design invert. In joining socket pipe, the spigot of each pipe shall be so seated in the socket of the adjacent pipe as to give a uniform annular space all around the pipe in the socket.

The following pipe installation items shall be required:

1. No pipe shall be laid which is damaged, cracked, checked or spalled or has any other defect deemed by the Engineer to make it unacceptable, and all such sections shall be permanently removed from the Work.
2. At all times when the Work of installing pipe is not in progress, all openings into the ends of the pipelines shall be kept tightly closed with suitable plywood or sheet metal bulkheads to prevent the entrance of animals and foreign materials and to prevent water from entering the pipe.
3. Keep the pipe trench free from water at all times and take all necessary precautions to prevent the pipe from floating due to water entering the trench from any sources. Any damage is the Contractor's full responsibility. Restore and replace the pipe to its specified conditions and grade if it is displaced due to floating.
4. All pipelines adjoining concrete structures (including manholes) shall have a flexible joint, such as sleeve transition couplings, within 36 inches from the face of such concrete structures. Flexible joints shall be installed on all pipe 4" and larger whether or not a flexible joint is illustrated on the Plans. Where the flexible joint is illustrated on the Plans, install the joint at the location indicated.

3.06 COMPACTION OF PIPE BEDDING AND BACKFILL

Unless specified in the Plans or Earthwork Specification (Section 02200), the following compaction test for piping shall be required.

A. One (1) compaction test for the granular sand fill pipe bedding along each 100 lineal foot of water, sewer or stormwater pipe placed for each 8-inch lift of material installed.

B. One (1) compaction test shall be obtained for each 8-inch lift of Class 2 Base material along each 100 foot section of water, sewer or stormwater pipeline installed.

C. One (1) compaction test shall be required for each 8-inch of vertical sand fill material placed along each 100 feet of water, sewer or stormwater pipeline installed.

D. One (1) compaction test shall be obtained for each 8-inch lift of native material along each 100 foot section of water, sewer or stormwater pipeline installed.

E. One (1) compaction test shall be obtained for each 8 inch of vertical native material lift placed around stormwater or sanitary sewer manholes. A geotechnical testing representative shall be present at the time the sanitary sewer or stormwater pipeline and sanitary sewer or stormwater manholes are backfilled to monitor the placement of backfill material and complete compaction testing. Additional lifts shall not be installed until previous lifts have attained the specified compaction and is approved by the on-site geotechnical representative and Engineer.

3.07 CLEAN-UP

Immediately upon completion of Work for this Section, all rubbish and debris shall be removed from the Site. All pipe trench areas shall be finish graded with a "blade" or "motor patrol". All construction equipment and implements of service shall be removed and the entire area involved shall be left in a neat, clean and acceptable condition.

*****END OF SECTION*****

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SECTION 02510

ASPHALT CONCRETE PAVING

PART 1 – GENERAL

1.01 GENERAL REQUIREMENTS

Division 0, Contract Requirements and Division 1, General Requirements apply to this Section.

1.02 DESCRIPTION

Requirements specified in the Specifications form a part of this Section. Provide labor, equipment, tools and materials to accomplish asphalt concrete paving as indicated on the Plans and/or on the Proposal forms.

1.03 PAVEMENT REMOVAL AND REPLACEMENT

A. General: Pavement removal and replacement for all public roads, including aggregate base and temporary paving where required, shall comply with all requirements of the agency issuing the Encroachment Permit. In roads established under formation of a special road district, the specifications of the Encroachment Permit shall apply. Any private roads and streets, including driveways in which the surface is removed or damaged, shall be restored to the original grade and crown by the Contractor in accordance with the paving requirements described herein. Removed or damaged sections shall be restored with the type of improvements (or better) conforming to that which existed at the time the Contractor entered upon the work.

It shall be the responsibility of the bidder to satisfy himself as to the existing pavement sections prior to submitting his bid.

B. Pavement Cutting: Pavement shall be cut to a straight edge parallel to the pipe alignment, curb and gutter, barrier curb, pavement edge, etc., prior to excavation. Method of pavement cutting shall be sawcutting for the full depth of the pavement. Under no circumstances shall excavation be started prior to sawcutting of the pavement. If the adjacent pavement is disturbed during the Contractor's operation, the pavement shall be recut on straight lines to remove the damaged pavement before resurfacing. Portland cement concrete pavement and sidewalk shall also be saw cut full depth as required.

C. Asphalt Concrete Pipe Trench Pavement: Where required by the agency issuing the Encroachment Permit or other agency having jurisdiction, and where specified in the Contract Documents, an asphalt concrete cap shall be placed in the area of the pipe trench or pipe excavation area. The installation of the asphalt concrete pavement shall be in accordance with the specifications and policies of the agency having jurisdiction. In the event the agency requirements conflict with the Plan requirements, the most stringent will apply.

1.04 TEMPORARY PAVEMENT

Install temporary pavement in accordance with the requirements of the agency issuing the Encroachment Permit. Steel plates may be allowed to cover excavation areas within road right of ways as approved by the governing agency and Engineer.

1.05 WARRANTY

Comply with the requirements of General Condition Article 5 and Section 01740.

PART 2 – PRODUCTS

2.01 ASPHALT CONCRETE PAVING