

June 14 & 15, 2022 Wallowa County Fair 668 NW 1<sup>st</sup> St Enterprise, OR 97828 541-426-4097

#### **Draft Agenda**

#### Tuesday, June 14, 2022

#### **TOUR:**

8:00am Depart from Eagle's View Inn & Suites

- Wallowa Lake State Park Event Center
- Kent Property Acquisition
- Wallowa River Restoration Project
- Wallowa Falls Campground & Little Alps Day Use Area
- Iwetemlaykin State Heritage Site

Time: 12:30pm – 1:00 Lunch

#### WORK-SESSION / TRAINING: 1:00pm - 3:30pm

Location: Wallowa County Fair – Cloverleaf Hall

- 2023-25 Budget
- Property Acquisition Policy

#### Wednesday, June 15, 2022

#### Executive Session: 8:30am - Wallowa County Fair - Cloverleaf Hall

The Commission will meet in Executive Session to discuss acquisition priorities and opportunities, and potential litigation. The Executive Session will be held pursuant to ORS 192.660(2)(e) and (h), and is closed to the public.

#### **Business Meeting: 9:30am**

#### 1. Commission Business

- a) Welcome and Introductions (Information)
- b) Approval of April 13, 2022 Minutes (Action)
- c) Approval of June 15, 2022 Agenda (Action)
- **2. Public Comment**: Please submit written public comments no later than 5 p.m. June 13<sup>th</sup> to <a href="mailto:chris.havel@oprd.oregon.gov">chris.havel@oprd.oregon.gov</a>

#### 3. Director's Update

- a) Agency Update/COVID-19 (Information)
- b) Delegated Authority (Action)

#### 4. Budget

a) 2021-23 Budget Update (Information)

b) 2023-25 Agency Request Budget (Action)

#### 5. Real Estate

- a) Update on Floras Lake Exchange with Curry County (Information)
- b) Silver Falls SP-Access Easements to Neighbors (Information)

#### 6. Community Engagement

a) Preservation Plan Outreach (Information)

#### 7. Heritage

a) Heritage Division Updates (Information)

#### 8. Park Development Division

- a) Bullards Beach State Park Sewer Rehabilitation Project (Action)
- b) Collier State Park McGiffert Log Loader and Skelton Cars Contract (Action)

#### 9. Rulemaking

a) Adoption of OAR-736-050-0260 Committee Procedures for Review and Approval of Nominations to the National Register (Action)

#### 10. Reports

- a) Director's Expense Report (Action)
- b) Actions Taken Under Delegated Authority (Information)
  - i) Contracts and Procurement
  - ii) Ocean Shores and Scenic Waterway Permits
  - iii) Timber Harvest Revenue

#### 11. Commission Planning Calendar (Information)

The services, programs and activities of the Oregon Parks and Recreation Department are covered by the Americans with Disabilities Act (ADA). If you need special accommodations to participate in this meeting, please contact the commission assistant Denise Warburton at (503) 779-9729 or <a href="Denise.warburton@oregon.gov">Denise.warburton@oregon.gov</a> at least 72 hours prior to the start of the meeting.



April 12 & 13, 2022 The Oregon Garden 895 W Main St Silverton, OR 97381 503-874-2500

#### **Approved Minutes**

#### Tuesday, April 12, 2022

#### **TOUR:**

8:00am Depart from Oregon Garden Resort

- Silver Falls State Park
  - o North Gateway Visitor Center
  - o North Canyon Day Use area
  - North Rim Trail
  - o South water reservoir replacement

**Time: 12:30pm – 1:00** Lunch

#### WORK-SESSION / TRAINING: 1:00pm - 3:30pm

Location: Silver Falls State Park – Smith Creek Meeting Hall

- 2023-25 Budget Development
- Electric Vehicle Charging Station Pilot Project
- Oregon Coast Trail System

#### Wednesday, April 13, 2022

#### **Executive Session: 8:30am**

The commission met in executive session to discuss matters related to real estate and legal issues as permitted by ORS 192.660 (e) and (h), respectively. The meeting was closed to the public and commissioners did not take any final action or make any final decision during the executive session. After the executive session, the commission moved to its public meeting.

#### **Business Meeting: 9:30am**

Jennifer Allen, Commission Chair	Chrissy Curran, OPRD
Lisa Dawson, Commission	Tanya Crane, OPRD
Doug Deur, Commission	JR Collier, OPRD
Vicki Berger, Commission	Katie Gauthier, OPRD
Steve Grasty, Commission	Chris Havel, OPRD
Liz Hill, Commission	Dennis Comfort, OPRD
<ul> <li>Jonathan Blasher, Commission</li> </ul>	Denise Warburton, OPRD
Steve Shipsey, Counsel for Commission, DOJ	Matt Rippee, OPRD
<ul> <li>Lisa Sumption, OPRD Director</li> </ul>	Ross Kihs, OPRD
Bill Beaty, OPRD	<ul> <li>Ladd Whitcomb, OPRD</li> </ul>

#### 1. Commission Business

- a) Welcome and Introductions (Information)
- b) Approval of February 24, 2022 Minutes (Action)

ACTION: Commissioner Berger moved to approve the February 2022 minutes Commissioner Blasher seconded. Motion passed, 7-0. (Topic starts at 00:02:20 and ends at 00:02:52)

c) Approval of April 13, 2022 Agenda (Action)

ACTION: Commissioner Hill moved to approve the April 2021 Agenda with the adjustment of 9c moving to the next agenda item. Commissioner Deur seconded. Motion passed, 7-0. (Topic starts at 00:02:55 and ends at 00:04:08)

#### 9. Rulemaking

- c) Update on Rulemaking, take-off and landing of drones, OAR 736-010-0015, 736-010-0040, 736-021-0030, 736-021-0100, 736-021-0130 (Information)
- 2. Public Comment: Please submit written public comments no later than 5 p.m. April 11<sup>th</sup> to <a href="mailto:chris.havel@oregon.gov">chris.havel@oregon.gov</a>

Phillip Johnson	Chuck Sheketoff
Derek Coulter	Ed Ruttledge
Patrick Sherman	Chris Woahl
Lisa Kerr	Eric Waters
Ann Kalmiogsis	Adam Simmons
Rick Stevens	Jamie Goodwick
Bridget Flanders	Dennis White
Kenji Sugahara	Jossi Davidson
Jeff Pricher	Senator Jeff Golden

#### 3. Director's Update

- a) Agency Update/COVID-19 (Information)
- b) 2023 Legislative Concepts (Action)

ACTION: Commissioner Berger moved to approve the 2023 Legislative Concepts. Commissioner Dawson seconded. Motion passed, 7-0. (Topic starts at 01:53:13 and ends at 02:23:52)

#### 4. Budget

- a) 2021-23 Budget Update (Information)
- b) 2023-25 Budget Update (Information)
- c) 2023-25 Key Performance Measures (Action)

ACTION: Commissioner Dawson moved to approve the 2023-25 Key Performance Measures. Commissioner Hill seconded. Motion passed, 7-0. (Topic starts at 02:30:02 and ends at 02:37:19)

#### 5. Property

a) ODOT I-84 Culvert Project (Action)

ACTION: Commissioner Grasty moved to approve the ODOT I-84 Culvert Project. Commissioner Deur seconded. Motion passed, 7-0. (Topic starts at 02:37:33 and ends at 02:43:46)

b) Donation (Action)

ACTION: Commissioner Blasher moved to approve the Donation. Commissioner Dawson seconded. Motion passed, 7-0. (Topic starts at 02:44:21 and ends at 03:00:35)

#### 6. Community Engagement

a) LWCF Grant Approval (Action)

ACTION: Commissioner Blasher moved to approve the LWCF Grants. Commissioner Berger seconded. Motion passed, 7-0. (Topic starts at 03:01:06 and ends at 03:02:31)

b) ATV Grant Approval (Action)

ACTION: Commissioner Deur moved to approve the ATV Grants. Commissioner Hill seconded. Motion passed, 7-0. (Topic starts at 03:02:40 and ends at 03:05:00)

c) ATV Committee Member Appointment (Action)

ACTION: Commissioner Grasty moved to approve the ATV Committee Member Appointment. Commissioner Deur seconded. Motion passed, 7-0. (Topic starts at 03:05:03 and ends at 03:05:57)

#### 7. Heritage

a) Heritage Division Updates (Information)

#### 8. Park Development Division

a)

#### 9. Rulemaking

a) Request to open Rulemaking, Archaeological Permits, Division 51 (Action)

ACTION: Commissioner Deur moved to approve the Request to open Rulemaking, Archaeological Permits, Division 51. Commissioner Berger seconded. Motion passed, 7-0. (Topic starts at 03:12:40 and ends at 03:29:34)

b) Request to adopt Rulemaking, National Register Statement Requirements, OAR 736-050-0250 (Action)

ACTION: Commissioner Berger moved to approve the Request to adopt Rulemaking, National Register Statement Requirements, OAR 736-050-0250. Commissioner Deur seconded. Motion passed, 6-0. Commissioner Blasher left at 03:30:06 (Topic starts at 03:30:23 and ends at 03:33:05)

- c) Adjusted: Moved after 1c
- d) Request to open Rulemaking, making changes to Committee Procedures for Review and Approval of Nominations to the National Register Permanent, OAR 736-050-0260 (Action)

ACTION: Commissioner Hill moved to approve the Request to open Rulemaking, making changes to Committee Procedures for Review and Approval of Nominations to the National Register Permanent, OAR 736-050-0260. Commissioner Dawson seconded. Motion passed, 5-1. Commissioner Grasty opposed. (Topic starts at 03:33:12 and ends at 03:59:10)

e) Upcoming Rulemaking, Scenic Bikeways, OAR 736-009-025, 0030 (Information)

#### **10. Reports** (Information)

- a) Actions Taken Under Delegated Authority
  - i) Contracts and Procurement
  - ii) Ocean Shores and Scenic Waterway Permits
  - iii) Timber Harvest Revenue

#### 11. Commission Planning Calendar (Information)

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#### June 15, 2022

Agenda Item: 3b Action

Public Comment Allowed: Yes

Topic: Delegated Authority

Presented by: Chris Havel

ORS 390.117 authorizes the commission to delegate to the director the authority to exercise in the commission's name any power, duty or function vested in or imposed by law upon the commission with the exception of adopting most administrative rules and acquiring real property.

The purpose of the commission delegating authority to the director is to ensure timely operation of critical functions within the department while retaining the commission's role in focusing on higher level, strategic direction for the agency. Delegated authorities taken by the director are reported to the commission in each meeting packet.

Currently, the commission has delegated to the director the authority to sign contracts and agreements for expenditures up to \$500,000. Staff request increasing this limit to \$750,000. This amount has not changed since before 2011.

As the agency prepares for completing GO Bond projects, the current expenditure limit could create delays. Increasing the delegated authority expenditure amount would save time on additional procurement review, giving OPRD the ability to procure contracts for project work and spend the GO Bond funds in more timely manner. Project cost increases due to inflation, global supply issues and contractor availability have driven many projects that once would have been within the director's delegated authority to just outside of that limit.

As an example, below are three recent projects that have needed commission approval before moving forward for construction:

- Detroit Water Reservoir Replacement \$659,330.00
- Pilot Butte Paving \$538,007.00
- OC&E Trail Hwy Bridge \$561,046.00

It is anticipated that several of the upcoming campground expansion and utility upgrade projects could exceed \$500,000.

**Prior Action by Commission:** In November 2017, the Commission adopted a number of changes to delegated authorities including moving from approving reports to accepting reports to clarify the intent of providing reports is to communicate on action taken under delegated

authority, not seek commission approval of tasks outlined in a report. A minor modification based on changes in position titles was approved in February 2019.

**Action Requested:** Approve increasing expenditure amount delegated from the Commission to the Director from \$500,000 to \$750,000.

Attachments: Attachment A: Commission Authorities Delegated and Retained

Prepared by: Katie Gauthier

#### 3b: Attachment A

#### Oregon Parks and Recreation Commission Authorities Delegated and Retained

#### **Authorities Delegated from Commission to Director**

- 1. Prepare minutes and maintain records of the Parks and Recreation Commission.
- 2. Establish and maintain procedures for certification of documents under direct control of the Department.
- 3. Pursuant to ORS 390.124, carry out the following duties in the preparation of rules and regulations to be adopted by the Parks and Recreation Commission:
  - a. Prepare the proposed rule.
  - b. Publish notices on the proposed rule.
  - c. Conduct hearings on the proposed rule as required.
  - d. Prepare a written summary of statements given, exhibits and other data received or observed, together with a recommendation for action, and presentation to the Commission for approval.
  - e. Submit a copy of adopted rule to the Legislative Counsel.
  - f. File rules adopted by the Commission and rules for park master plans once county approval has been granted.
- 4. Financial Matters and Obligation of Funds up to \$\frac{\$500,000}{\$750,000}\$. Execution of agreements, approval for payments, contracts, Intergovernmental Agreements (IGA's) and similar.
  - a. Execute leases, rental agreements, and contracts for buildings or spaces for Department use.
  - b. Leases and land-use agreements on state park property.
  - c. Contracts subject to the Contracting Code (ORS 279a, 279b, and 279c) and Intergovernmental Cooperation subject to ORS 190 except for Agreements with American Indian Tribes. Includes Proposal Requests and Contract Change Orders.
  - d. Approval of invoices and payments against an executed contract.
  - e. Approval of invoices and payments not part of an agreement or contract.
  - f. Other agreements and financial commitments.
  - g. Agreements with American Indian Tribes.
  - h. Park, District, or Region-specific agreements, Memorandums of Understanding that are non-monetary.
  - i. Park Specific Agreements that are land use related such as special use permits, building permits, utility company agreements, county permit applications, land use compatibility statements, (subject to consultation with property unit staff).
  - j. Friends Groups and Co-operative Association agreements.
  - k. Standard grant agreements and amendments for Local Government Grant Program (LGGP), All-Terrain Vehicle (ATV), County Opportunity Grants (COG), Land and Water Conservation Fund (LWCF) Grants, and Recreational Trail Program (RTP) grants, after approval by Commission.

- State Historic Preservation Office (SHPO) Documents including, but not limited to, project notifications and reports, sub-grant agreements, Tax Act documents, National Register documents, Certified Local Government certifications, and Section 106 agreement documents.
- m. OPRD as grantee for grant programs administered by OPRD.
- n. Reimbursement of Grant Expenses.
- 5. Negotiate and authorize settlement for all cases in or pending litigation or in mediation involving the Department after consultation with and recommendation of Legal Counsel, and in consultation with Commission Chair for litigation.
- 6. Sign all contracts or other documents relating to State Parks and Recreation Department activities that are approved by the State Parks and Recreation Commission or by the Chair or Vice Chair of the commission and report to the Commission.
- 7. Determine that an emergency exists and approve expenditures for repairs and remediation of damages to property and facilities under the jurisdiction of the State Parks and Recreation Dept. when such are needed to make the property safe or to restore operations without calling for competitive bids. Actions taken under this authority will be reported to the Commission.
- 8. Take steps necessary to obtain reimbursement or collection for damages to state park property. Authorize the abandonment of damage claims.
- 9. Approve the sale, lease, exchange, other use, or disposal of property that is determined to be no longer required by the State Parks and Recreation Dept. and execute the necessary documents to complete the transaction. This does not apply to any real property rights. This does not apply to any property in excess of \$500,000 in value.
- 10. Approve the sale of publications or other printed materials or items where a charge has been established to recover costs of preparation and distribution.
- 11. Approve the sale of timber as a by- product of management activities where proceeds or value are less than \$500,000 \$750,000.
- 12. Conduct negotiations to acquire real property for the Department and approve the payment for real estate options of \$10,000 or less.
- 13. Approve scenic waterway notices, which meet the requirements of ORS 390.805 to ORS 390.925 and rules and regulations adopted pursuant thereto.
- 14. Authorize the abandonment of miscellaneous uncollectible accounts.
- 15. Approving fee reductions and waivers.

- 16. Administer and submit to the Land Conservation and Development Commission proposals or plans to alter the Department's Willamette River Greenway plan or any segment thereof as approved by the Commission.
- 17. Accept, expend, use, and acknowledge moneys and property from any public or private source made available to the Dept. in the form of grants, gifts, bequests, devices or endowments, except that gifts of over \$10,000 in value will be presented to the Commission for approval and acknowledgement.
- 18. Issue or deny permits for use of the ocean shore under ORS 390.750, 390.705 and 390.725.
- 19. Pursuant to ORS 358.617, complete all rulemaking activities necessary to change, adopt, and file rules related to responsibilities of the State Historic Preservation Officer.
- 20. Sub-delegate to subordinate staff authorities that have been granted to the Director consistent with their responsibilities.
- 21. Prepare and sign personnel documents and serve as Appointing Authority.
- 22. Sign legal documents not covered elsewhere.
- 23. Sign Archaeological Permits
- 24. Approving officer for SPOTS Card Program
- 25. Execute and Sign All-Terrain Vehicle (ATV) or Day Use Parking Permit Agent Agreements.
- 26. Execute and sign Heritage Maritime grant agreements and documents.
- 27. Section 6 Natural Heritage Grants.
- 28. Waive fees and costs for marketing and promotional purposes.
- 29. Signature of documents associated with property acquisition and/or disposal previously approved by the Commission.

#### **Authorities Retained by Commission**

- 1. Administrative Rulemaking
  - a. Approve staff action for creation of new rules or revision of rules necessary for the administration of the agency's responsibilities and solicit public comment. (Except as may be delegated for rules under ORS 358.617)
  - b. Approve or adopt administrative rules. (Except as may be delegated for rules under 358.617 and rules relating to filing of park master plans)
- 2. Real Property Transactions

- a. Approve biennial acquisition plan as part of biennial budget.
- b. Approve for sale or purchase or acceptance or placement of any easement relating to real property owned or managed by the department.
- c. Accept donations of real property.

#### 3. Budget and Legislature

- a. Approve the biennial budget and associated policy option packages.
- b. Approve requests to the legislature to re-balance the budget.
- c. Approve agency legislative concepts.
- 4. Facility and Park Improvement Program
  - a. Approve the overall scope of the biennial facility and park improvement program.
  - b. Authorize significant changes to the program and budget as may be required.
- 5. Park Master Plans and Park Naming
  - a. Approve park master plans required to obtain land use decision.
  - b. Authorize filing of master plans with local jurisdictions for incorporation into local comprehensive plans.
  - c. Approve the naming of park properties.
- 6. State Scenic Waterways
  - a. Denial of requests for improvements or actions within State Scenic Waterways.

#### 7. Grants

a. Approve staff recommendations for grants under the Local Government Grants, Recreation Trails, All Terrain Vehicle, County Opportunity, and Land and Water Conservation Fund grant programs.

#### 8. Trails

- a. Designation of Oregon Scenic Bikeways upon recommendation of the Oregon Scenic Bikeways Committee and Oregon Recreation Trails Advisory Council.
- b. Designation of Oregon Scenic Trails upon recommendation of the Oregon Recreation Trails Advisory Council.
- c. Designation of Oregon Regional Trails upon recommendation of the Oregon Recreation Trails Advisory Council.

#### 9. Advisory Councils

a. Appoint members of the Oregon Recreational Trails Advisory Council and ATV Advisory Committee.

#### 10. Reports

- a. Receive reports on actions taken by the Director under authority delegated by the Commission.
- b. Receive report on grants awarded under the Heritage, Preserving Oregon, Historic Cemeteries, and Museum Grant programs.
- c. Receive reports on budget execution.

#### June 15, 2022

Agenda Item: 4a Information

Public Comment Allowed: Yes

Topic: 2021-23 Budget Update

Presented by: Tanya Crane, Budget Manager

The June 2022 Lottery forecast was released May 18, 2022. It reflects an increase in Lottery Fund revenue for the Department of \$3,692,403. Since the close of session (June 2021), the Lottery Fund revenue forecast has increased by \$10,025,820. The Department's budget was built on a Lottery Fund revenue forecast of \$123.9 million and the June 2022 forecast is \$133.9 million. The table below reflects the change in the Lottery revenue forecast for the 2021-23 biennium and beyond.

Lottery Forecast History (2021-23, 2023-25 and 2025-27 Bienniums): OPRD's Share of PNRF							
	2021-23		2023	3-25	2025	i-27	
		Change from		Change		Change	
		Prior		from Prior		from Prior	
Forecast Date	Forecast	Forecast	Forecast	Forecast	Forecast	Forecast	
May 2021 Forecast (close of session)	\$123,859,554		\$131,901,148		\$142,152,455		
September 2021 Forecast (released 8-25-2021)	\$127,497,376	\$3,637,822	\$132,844,336	\$943,188	\$143,291,786	\$1,139,331	
December 2021 Forecast (released 11-17-2021)	\$129,180,409	\$1,683,033	\$133,486,986	\$642,650	\$143,888,933	\$597,147	
March 2022 Forecast (released 2-9-2022)	\$130,192,971	\$1,012,562	\$133,723,579	\$236,593	\$144,117,608	\$228,675	
June 2022 Forecast (released 5-18-2022)	\$133,885,374	\$3,692,403	\$136,119,213	\$2,395,634	\$146,710,874	\$2,593,266	
Total Cumulative Change		\$10,025,820		\$4,218,065		\$4,558,419	

According to the Office of Economic Analysis (OEA), long term forecasts are adjusted higher based on a stronger economic and sales outlook.

As mentioned verbally at the April meeting, the schedule for the Legislative Emergency Board has been set for the time between the short and long legislative sessions. Meetings of the Emergency Board are scheduled for June 2022, September 2022 and December 2022.

**Prior Action by Commission:** The 2021-23 Agency Request Budget was approved at the June 2020 meeting. A brief update was provided in November 2020, the Governor's Budget was presented at the February 2021 meeting and a brief update was verbally presented at the June 2021 meeting. The Legislatively Adopted budget was presented at the September 2021 meeting. A budget update was provided in February 2022 and April 2022.

Action Requested: None.

Attachments: None.

Prepared by: Tanya Crane, Budget Manager

#### Addendum to Item 4b

The Department has created the 2023-25 Agency Request Budget. This work included projecting revenue sources for the biennium, calculating the current service level budget, determining any needed policy packages, and determining necessary reserves for cash flow and possible employee compensation plan changes.

Revenue Discussion: Below is a chart that shows the Department's projected Beginning Cash Balances and projected Revenues. Dedicated Lottery fund revenues are based on the June 2022 statewide revenue forecast of \$136.1 million; non-dedicated Lottery funds are \$4.5 million for Debt Service. Other Fund revenues total \$122 million with Park User Fees providing \$65 million. Federal Fund revenues are projected to be \$22.5 million. General Fund debt service funds are \$9.25 million.

Beginning Balances:			Revenues:	
Local Govt Grants		26,173,756	Non Business License/Fees	2,314,701
RV County Grants		1,492,935	Park User Fees	64,980,074
OR Prop Mgmt Acct		77,345	Interest Income	2,012,475
Main Street		9,612,439	Sales Income	3,429,747
ATV Funds		9,957,851	Other Revenues	8,555,069
Trust/Dedicated Funds		13,334,901	General Fund	9,250,991
Cash Flow*		27,257,484	Federal Funds	22,542,959
Non Dedicated		54,652,444	From DAS - M76	136,119,213
	Total	142,559,155	From DAS - non M76	4,516,798
			From Business Oregon	280,000
*Cash flow breakdown:			From Marine Board	400,000
OR Prop Mgmt Acct		125,000	From ODOT	60,971,538
ATV Funds		5,742,000	Transfer to Counties	(16, 105, 204)
Trust/Dedicated Funds		1,290,484	Transfer to State Police	(1,001,954)
General Operations		20,100,000	Transfer to Forestry	(2,251,097)
	Total	27,257,484	Transfer to ODOT	(823,804)
			Tota	al 295,191,506

Expenditure Discussion: The Department's base budget is \$285.6 million including increases in Personal Service costs and Debt Service. Allowable inflation rates and State Government Services Charges increases add \$7.9 million to the budget; however, phasing out limitation associated with one-time expenditures reduces the budget by \$25.3 million creating a Current Service Level (CSL) budget of \$268.2 million. Policy packages costing \$96.9 million bring the total budget request to \$365.1 million.

Below are charts that show the Department's policy packages and the Department's expenditure limitation by Summary Cross Reference (SCR). The Legislature will approve the Department's budget at the SCR level.

Policy Packages:					
101 Fund Operational Costs	487,693	Budgets by SCR (including p	ackages):	Pos	FTE
102 Honor Grant Awards	13,202,893	Director's Office	2,838,067	5	5.00
103 LGGP to 25%	17,695,497	Central Services	63,987,251	93	90.90
104 LGGP 13% Carryover	17,848,188	Park Development	42,608,116		
105 Auth Federal Grants	7,924,772	Direct Services	149,430,724	747	541.71
106 Reservation System	2,275,000	Community Support/Grants	106,241,528	29	28.64
107 Inc Ranger hours	4,650,449	Total	365,105,686	874	666.25
108 Invest repair/maint	16,250,000				
109 Add S&S	1,632,868	Acquisitions	4,000,000		
110 Impl Agy Efficiency LC	214,206	Facilities Construct/Maintain	38,608,116		
111 Impl ATV Safety LC	30,620	Local Government Grants	51,877,991		
112 Add Staff - workload	1,709,335	Total	94,486,107		
113 Invest in Technology	4,310,773				
114 Customer Svc Projects	3,429,356				
115 Auth ATV grant increase	3,000,000				
116 Add new parkland	2,245,233				
Total	96,906,883				

Based on projected Beginning Balances, revenues and expenditures, the Department will continue to have an ending cash balance. The chart below shows the projected Ending Balance and the dedicated balances plus reserves.

Ending Balances:			
Local Govt Grants	8,325,568		
RV County Grants	1,271,147	*Cash flow breakdown:	
OR Prop Mgmt Acct	2,438	OR Prop Mgmt Acct	110,000
Main Street	812,439	ATV Funds	6,850,000
ATV Funds	5,389,887	Trust/Dedicated Funds	2,034,228
Trust/Dedicated Funds	8,982,584	General Operations	26,600,000
Cash Flow*	35,594,228	Total	35,594,228
Reserve - Salary/Wages	10,576,684		
Reserve - ODOT ATV	855,984		
Reserve - Parity Issue	200,000		
Non Dedicated	634,016		
Total	72,644,975		

#### Reduction Options:

The Department is required to include reduction options in the Agency Request Narrative/Budget Book. Options must equal 10% for each fund type at the Modified Current Service Level (CSL). Modified CSL is the CSL adjusted for any revenue reduction packages. Debt Service may be excluded from CSL.

This list is not entered into the budget system. It provides options for the Governor and the Legislature if reductions are necessary during those stages of budget development.

#### The table below shows the proposed list of reductions:

		GF	LF	OF	FF	TF
Current Service Level			123,805,172	119,152,134	11,473,708	254,431,014
Pkg 070 Reductions						0
Modified CSL		0	123,805,172	119,152,134	11,473,708	254,431,014
	10%	0	12,380,517	11,915,213	1,147,371	25,443,101
Reduction Options:						
Remove Inflation from budget		0	1,870,209	2,416,359	465,862	4,752,430
Reduce/Elim Small Grant limitation				3,573,680	681,509	4,255,189
Acquisition			684,037			684,037
Reduce ATV accts 10%				1,220,654		1,220,654
Reduce T&D accts 10%			54,314	861,235		915,549
Reduce S&S/CO DO, CS, DS 18.52% acro	ss board		3,320,984	3,778,791		7,099,775
Reduce S&S/SP HP, 10% across board			122,693	53,064		175,757
Reduce S&S GA 10% across board			1,206	11,430		12,636
Reduce FIP			6,327,074			6,327,074
						0
						0
						0
		0	12,380,517	11,915,213	1,147,371	25,443,101

#### June 15, 2022

Agenda Item: 4b Action

Public Comment Allowed: Yes

Topic: 2023-25 Agency Request Budget

Presented by: Tanya Crane, Budget Manager

In order to meet budget development deadlines, the 2023-25 Agency Request Budget needs to be approved at this meeting. All position actions must be in the Oregon Position Inventory Control System (ORPICS) by June 30, 2022. All policy packages must be in the Oregon Budget Tracking Information System (ORBITS) by July 31, 2022. The agency's budget narrative must be completed, combined with audited ORBITS and PICS reports, signed by the Commission Chair and submitted to DAS by September 1, 2022.

Information on revenues, expenditures, policy packages and reduction options are being finalized. The budget recommendation will be reviewed in work session with final approval requested during the business meeting.

Handouts for the work session and meeting will include the following information:

- A. Revenues
  - a. Lottery Fund
  - b. Other Fund
  - c. Federal Fund
- B. Expenditures
  - a. Base Budget
  - b. Personal Services
  - c. Phase In and Out
  - d. Standard Inflation, Exceptions
  - e. Current Service Level
  - f. Reductions to available funding (if necessary)
  - g. Policy Packages
- C. Ending Balance
  - a. Appropriate Reserves (Cash Flow, Salary/Benefits)
  - b. Unobligated Balances
- D. Reduction Options (10% by fund type required by law)
- E. Next Steps
  - a. Input to Budget System
  - b. Budget Narrative

**Prior Action by Commission:** A budget workshop on the process was provided at the November 2021 meeting; a workshop on revenues was presented at the February 2022 meeting; a workshop on expenditures was presented at the April 2022 meeting.

Action Requested: Approve the 2023-25 Agency Request Budget.

Attachments: None.

Prepared by: Tanya Crane, Budget Manager

#### Addendum to Item 4b

The Department has created the 2023-25 Agency Request Budget. This work included projecting revenue sources for the biennium, calculating the current service level budget, determining any needed policy packages, and determining necessary reserves for cash flow and possible employee compensation plan changes.

Revenue Discussion: Below is a chart that shows the Department's projected Beginning Cash Balances and projected Revenues. Dedicated Lottery fund revenues are based on the June 2022 statewide revenue forecast of \$136.1 million; non-dedicated Lottery funds are \$4.5 million for Debt Service. Other Fund revenues total \$122 million with Park User Fees providing \$65 million. Federal Fund revenues are projected to be \$22.5 million. General Fund debt service funds are \$9.25 million.

Beginning Balances:			Revenues:	
Local Govt Grants		26,173,756	Non Business License/Fees	2,314,701
RV County Grants		1,492,935	Park User Fees	64,980,074
OR Prop Mgmt Acct		77,345	Interest Income	2,012,475
Main Street		9,612,439	Sales Income	3,429,747
ATV Funds		9,957,851	Other Revenues	8,555,069
Trust/Dedicated Funds		13,334,901	General Fund	9,250,991
Cash Flow*		27,257,484	Federal Funds	22,542,959
Non Dedicated		54,652,444	From DAS - M76	136,119,213
	Total	142,559,155	From DAS - non M76	4,516,798
			From Business Oregon	280,000
*Cash flow breakdown:			From Marine Board	400,000
OR Prop Mgmt Acct		125,000	From ODOT	60,971,538
ATV Funds		5,742,000	Transfer to Counties	(16, 105, 204)
Trust/Dedicated Funds		1,290,484	Transfer to State Police	(1,001,954)
General Operations		20,100,000	Transfer to Forestry	(2,251,097)
	Total	27,257,484	Transfer to ODOT	(823,804)
			Tota	al 295,191,506

Expenditure Discussion: The Department's base budget is \$285.6 million including increases in Personal Service costs and Debt Service. Allowable inflation rates and State Government Services Charges increases add \$7.9 million to the budget; however, phasing out limitation associated with one-time expenditures reduces the budget by \$25.3 million creating a Current Service Level (CSL) budget of \$268.2 million. Policy packages costing \$96.9 million bring the total budget request to \$365.1 million.

Below are charts that show the Department's policy packages and the Department's expenditure limitation by Summary Cross Reference (SCR). The Legislature will approve the Department's budget at the SCR level.

Policy Packages:					
101 Fund Operational Costs	487,693	Budgets by SCR (including p	ackages):	Pos	FTE
102 Honor Grant Awards	13,202,893	Director's Office	2,838,067	5	5.00
103 LGGP to 25%	17,695,497	Central Services	63,987,251	93	90.90
104 LGGP 13% Carryover	17,848,188	Park Development	42,608,116		
105 Auth Federal Grants	7,924,772	Direct Services	149,430,724	747	541.71
106 Reservation System	2,275,000	Community Support/Grants	106,241,528	29	28.64
107 Inc Ranger hours	4,650,449	Total	365,105,686	874	666.25
108 Invest repair/maint	16,250,000				
109 Add S&S	1,632,868	Acquisitions	4,000,000		
110 Impl Agy Efficiency LC	214,206	Facilities Construct/Maintain	38,608,116		
111 Impl ATV Safety LC	30,620	Local Government Grants	51,877,991		
112 Add Staff - workload	1,709,335	Total	94,486,107		
113 Invest in Technology	4,310,773				
114 Customer Svc Projects	3,429,356				
115 Auth ATV grant increase	3,000,000				
116 Add new parkland	2,245,233				
Total	96,906,883				

Based on projected Beginning Balances, revenues and expenditures, the Department will continue to have an ending cash balance. The chart below shows the projected Ending Balance and the dedicated balances plus reserves.

Ending Balances:			
Local Govt Grants	8,325,568		
RV County Grants	1,271,147	*Cash flow breakdown:	
OR Prop Mgmt Acct	2,438	OR Prop Mgmt Acct	110,000
Main Street	812,439	ATV Funds	6,850,000
ATV Funds	5,389,887	Trust/Dedicated Funds	2,034,228
Trust/Dedicated Funds	8,982,584	General Operations	26,600,000
Cash Flow*	35,594,228	Total	35,594,228
Reserve - Salary/Wages	10,576,684		
Reserve - ODOT ATV	855,984		
Reserve - Parity Issue	200,000		
Non Dedicated	634,016		
Total	72,644,975		

#### Reduction Options:

The Department is required to include reduction options in the Agency Request Narrative/Budget Book. Options must equal 10% for each fund type at the Modified Current Service Level (CSL). Modified CSL is the CSL adjusted for any revenue reduction packages. Debt Service may be excluded from CSL.

This list is not entered into the budget system. It provides options for the Governor and the Legislature if reductions are necessary during those stages of budget development.

#### The table below shows the proposed list of reductions:

		GF	LF	OF	FF	TF
Current Service Level			123,805,172	119,152,134	11,473,708	254,431,014
Pkg 070 Reductions						0
Modified CSL		0	123,805,172	119,152,134	11,473,708	254,431,014
	10%	0	12,380,517	11,915,213	1,147,371	25,443,101
Reduction Options:						
Remove Inflation from budget		0	1,870,209	2,416,359	465,862	4,752,430
Reduce/Elim Small Grant limitation				3,573,680	681,509	4,255,189
Acquisition			684,037			684,037
Reduce ATV accts 10%				1,220,654		1,220,654
Reduce T&D accts 10%			54,314	861,235		915,549
Reduce S&S/CO DO, CS, DS 18.52% acro	ss board		3,320,984	3,778,791		7,099,775
Reduce S&S/SP HP, 10% across board			122,693	53,064		175,757
Reduce S&S GA 10% across board			1,206	11,430		12,636
Reduce FIP			6,327,074			6,327,074
						0
						0
						0
		0	12,380,517	11,915,213	1,147,371	25,443,101

#### June 15, 2022

Agenda Item: 5a Information

Public Comment Allowed: Yes

Topic: Update on Floras Lake Exchange with Curry County

Presented by: Chris Havel

In September 2019, the Commission approved a property trade between the Oregon Parks and Recreation Department and Curry County. The county received an undeveloped 32 acre parcel next to US 101 and OPRD received property of equivalent value between the existing Floras Lake State Natural Area and the namesake lake. The incoming property has natural features and added a 90-acre buffer to the 1,500 acre natural area. The park is home to unusual plant and soil communities, including the protected western bog lily (*Lilium occidentale* Purdy), and is adjacent to a county park on the north side, and the Cape Blanco airport to the south. Trails run through the park, leading to ocean overlooks and the beach as part of the Oregon Coast Trail.

As part of the trade, OPRD also agreed to two conditions:

- [By December 2022] begin the process of preparing a five (5) year plan, execution of which completes improvement and development of a trail system that connects the County property around Floras Lake Property with State's adjacent property.
- [By December 2022] begin the process of evaluating possible additional land exchange(s) between the Parties, including, without limitation, the County Floras Lake Property and the Departments current ownership of McVay Rock State Recreation Site.

OPRD had originally planned to incorporate both obligations in a master plan refresh scheduled for the 2019-21 biennium, but that project was put on hold due to staff and spending reductions prompted by the pandemic. As positions are being refilled and workloads rebalanced, staff have resumed conversations with the county to meet the deadline. The projects will produce plans and proposals, some of which may come back to the commission for approval. OPRD will engage in public conversations about concepts as the joint state-county team develops them.

**Prior Action by Commission:** Sept. 2019, approved Item 5a "Port Orford Cedar Wayside - Floras Lake Curry County Property exchange.

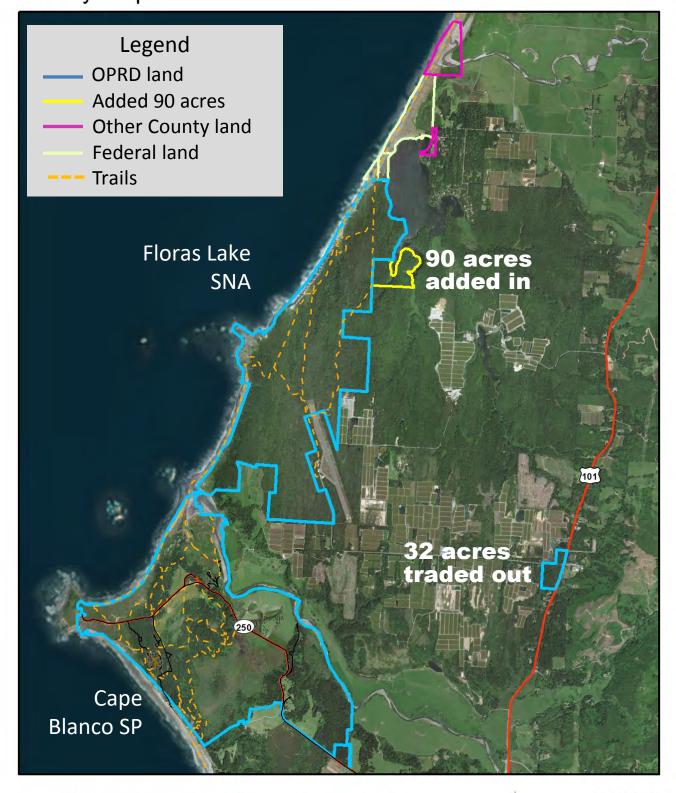
**Action Requested:** None.

**Attachments:** Property map

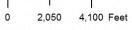
**Prepared by:** Chris Havel

Oregon Parks and Recreation Dept. 725 Summer St. NE, Suite C Salem OR, 97301





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NMOB-02965 never E:6/4/2018

#### June 15, 2022

Agenda Item: 5b Information

Public Comment Allowed: Yes

Topic: Silver Falls SP-Access Easements to Neighbors

Presented by: Alice Beals, Right of Way Agent

As staff proceed with the activities needed to go forward with the Silver Falls North Gateway project which involves the potential vacation of a section of County Road right of way running in a west to east direction through OPRD lands (Hult Road), a condition of the County is for OPRD to provide an access easement to any property that is currently served by this section of road. (see Attachment A).

There is currently a primitive road along the east boundary of OPRD lands, running in a north to south direction that is planned to be improved as an emergency fire access road. This road could also serve to provide access to neighbors to the east that are served by Hult Road.

Engineering and Survey work being done as a condition of the proposed road vacation will provide the necessary information needed to finalize the requirements for the easements needed.

Staff will be requesting Commission approval to grant these access easements at a future meeting.

**Prior Action by Commission:** None

**Action Requested:** None

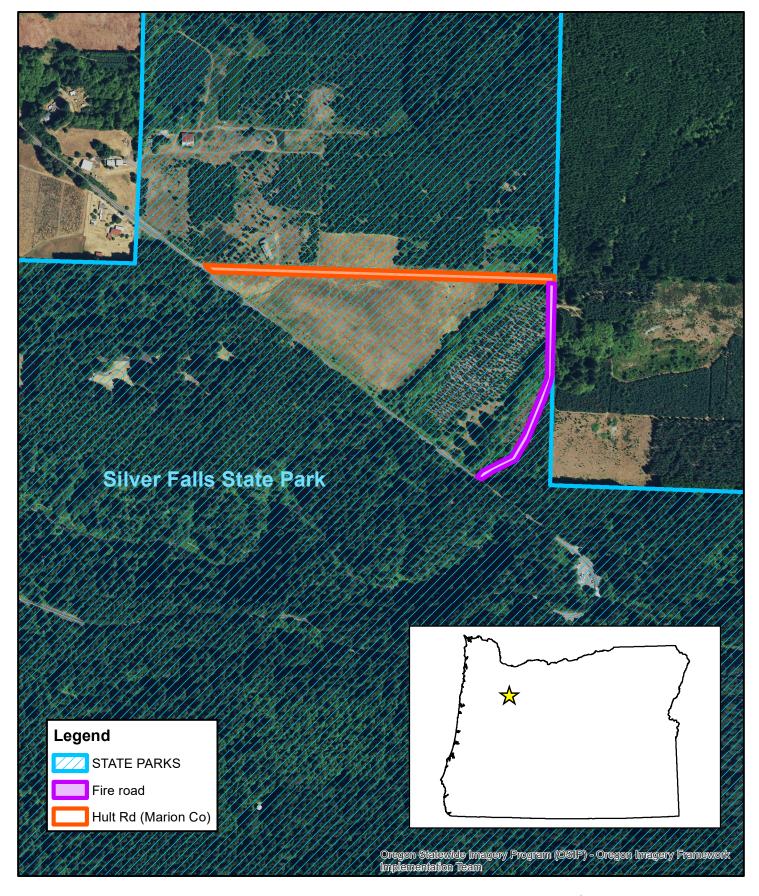
**Attachments:** 5a - Attachment A – Map-Proposed Easement Location

**Prepared by:** Alice Beals

# 5b. Silver Falls SP - Access Easements to Neighbors (Information)

Oregon Parks and Recreation Dept. 725 Summer St. NE, Suite C Salem OR, 97301





NAD 1983 2011 Oregon Statewide Lambert Ft Intl

June 15, 2022

Agenda Item: 5c Action

Public Comment Allowed: Yes

Topic: Gleason Park and Pool

Presented by: Tabitha Henricksen

On November 17<sup>th</sup>, 2022, the Oregon State Parks and Recreation Commission voted to approve acquisition of Gleason Park in John Day, OR. The agenda item included mention that the City of John Day would be responsible for a conversion of use with National Parks Service's Land and Water Conservation Fund (LWCF). It has been determined by staff supporting the LWCF grant program that a conversion of use is not necessary or advised.

We request approval of this acquisition with the grant obligation to National Parks Service to remain in place after ownership transfer to Oregon Parks and Recreation Department (OPRD). OPRD will become grant sponsor at the time of deed transfer.

**Prior Action by Commission:** Approved acquisition 11/17/2022

**Action Requested:** Approval of revised acquisition of Gleason Park from City of John Day

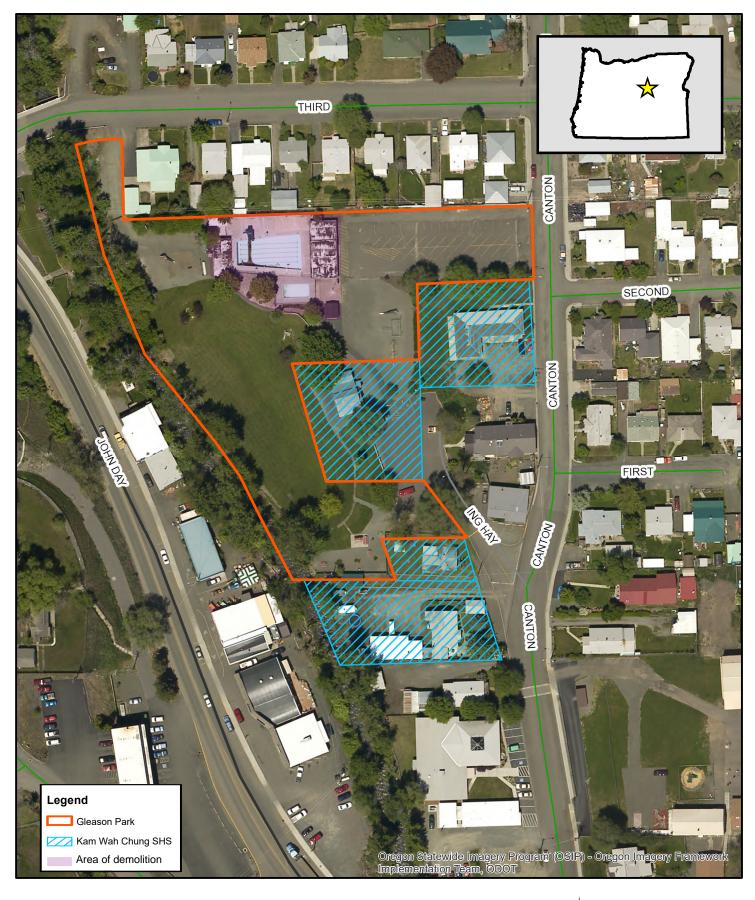
**Attachments:** 5c Attachment A – Map

Prepared by: Tabitha Henricksen, Agent

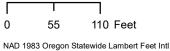
# 5c. Gleason Pool and Park

Oregon Parks and Recreation Dept. 725 Summer St. NE, Suite C Salem OR, 97301





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#### June 15, 2022

Agenda Item: 6a Information

Topic: Community Engagement, Oregon Preservation Plan Outreach

Presented by: Christine Curran, Deputy Director, Heritage Programs

The National Park Service provides a portion of the State Historic Preservation Office's (SHPO) funding through a biannual grant under the provisions of the 1966 Historic Preservation Act. The grant requires that the SHPO complete a state-wide preservation plan every five years that describes how the SHPO, government agencies, non-profit organizations, advocacy groups, and the public will work together to identify, designate, protect, and treat our state's important historic places. The current 2018-2023 Oregon Historic Preservation Plan is available on the agency website. See the 2018-2023 Plan. While the plan must address SHPO programs, there is an opportunity to discuss the concerns of the larger "heritage community," which includes the public, museums, archives, non-profit organizations, Tribes, and all levels of government.

This summer and fall the Oregon SHPO will ask Oregonians how the heritage community can work together to identify and preserve historic places, collections, and traditional practices, educate the general public about the State's history, and build support for cultural organizations and programs. Participants will also be asked to consider how the heritage community can better address diversity, equity, and inclusion in cultural resource programs, disaster preparedness, and planning for cultural resources in development and infrastructure projects.

Beginning in June, the agency will post a project page on the agency website, offer an online survey, and host a series of 90-minute public meetings. Meetings will focus on a specific region of the state or topic, but all will be welcome to attend one or more session. Participants in the survey or who attend meetings will identify what issues matter most, how to best preserve our history, and what government agencies, cultural institutions, and each Oregonian can do to protect and share our history. The agency will invite Oregon Tribes to Government-to-Government consultation to provide input on the Plan, and will host a separate discussion session for cultural resource staff. Staff will also offer presentations at appropriate agency-sponsored events and state commission and committee meetings, and to federal, state, and local agency partners and non-profit organizations. Presentations will range from brief, informational sessions to staff-led workshops, depending on the organization's preference.

**Prior Action by Commission:** none

Action Requested: none

Attachments: none

Prepared by: Ian P. Johnson, Associate Deputy State Historic Preservation Officer

#### June 15, 2022

Agenda Item: 7a Information

Topic: Heritage Division Update

Presented by: Christine Curran, Deputy Director, Heritage Programs

#### **Oregon Heritage Conference A Success!**

The 2022 Oregon Heritage Conference: The Power of Heritage was a great success with over 140 attendees. Keynote speakers challenged and inspired participants and affirmed the value of heritage work. Presenters included Vu Le, *Rethinking Nonprofit Structure and Getting Serious about Board Diversity* and Willie Richardson, *Reflections on Heritage Preservation Work in Oregon*. Sessions covered many heritage disciplines and topics including archaeology, archives, exhibits, digitization, and issues related to nonprofit and organization management. The conference also offered participants networking opportunities in the morning, at lunch, and in the evenings. The conference was online, which encouraged some to participate who may not have otherwise by eliminating travel and associated costs and personal health considerations related to ongoing concerns about COVID. Presenters and sessions leveraged the strengths of online events through the use of break-out rooms and multi-media presentations.

As a special event at the conference the Heritage Division announced the recipients of the annual Oregon Heritage Excellence Awards. Projects include:

- Jefferson Public Radio's Jefferson Exchange Underground History Program, Ashland. A monthly radio segment that spotlights little-known aspects of Oregon's history through the lens of archeology. View Video.
- Capitol History Gateway Project, Salem. A multi-year project that resulted in exhibits, events, tours, and a digital welcome center at the Oregon State Capitol building. View Video.
- It Did Happen Here Podcast, Portland. The It Did Happen Here Podcast honors the memory of Mulugeta Seraw and records the movement that disrupted White Nationalist organizing in Oregon in the late 1980s and 1990s. <u>View Video</u>.

The ceremony included a new award category for standout heritage volunteers that recognizes the critical contributions of individuals to heritage preservation efforts in Oregon. <u>View Video</u>.

Also held as part of the Oregon Heritage Conference, the Oregon SHPO hosted two half-day workshops for cultural resource professionals. The 115 participants represented federal and state agencies, tribes, museums, universities, cities, and non-profit organizations. Presentations and discussions addressed determining when a cultural resource is eligible for listing in the National Register of Historic Places, and how this determination may change the consideration of how a project may impact the historic qualities of the property. Other topics included the agency's

digital submission process, reporting guidelines, and a session co-presented by SHPO staff and invited speakers from the Confederated Tribes of the Grand Ronde on best practices for writing cultural resource reports.

#### **Oregon Main Street Issues Annual Report**

Oregon Main Street's 2021 Annual report has just been released. The report celebrates some of the accomplishments in the Oregon Main Street Network, shares information about the program, and includes the most recent revitalization statistics from top-tier communities. Since 2010, the cumulative impact of the Performing Main Street and Transforming Downtown level communities include 1,511 building rehabilitation projects, over \$139 million in private sector reinvestment, 4,662 net jobs created, and 472,086 volunteer hours given on behalf of the local organizations. Many buildings benefiting from this program may have been lost without the leadership of local main street partners. View Report.

#### **Phoenix Building Restored to its Former Fancy Self**





Phoenix Pharmacy, Portland, before restoration (left), and after, (right)

The 1922 Phoenix Pharmacy building at the northwest corner of SE Foster and SE 67th Avenue in the Foster-Powell neighborhood of Southeast Portland was completed for owner, pharmacist, and community leader John Leach. The building was designed in the Commercial style, which features a mixed-brick palette of dark red-browns. The building has a distinctive "flatiron" wedge shape with the prominent curved entrance at the corner entry. The Phoenix Pharmacy was located on the first floor of the building for many years, and was one of the largest pharmacies in the state. Sadly, none of the historic pharmacy remains. The building sat vacant and unused for many years before being bought by Buck Froman of Buck's Stove Palace, just a block away. Buck used the building for storage, and eventually turned the property over to his son, Matt Froman, to pursue his vision for the property. Matt undertook a significant yearlong rehabilitation. Foster Outdoor, a retailer of new and used outdoor gear, will be the first-floor tenant of the newly rehabilitated building. After being altered over the years, the second floor has been returned to small private offices, similar in character to the original medical office use. The Phoenix Pharmacy building is in the process of being listed in the National Register of Historic

Places and is taking advantage of Oregon's Special Assessment for Historic Properties tax benefit program. The building is now completely leased and ready to start its second century of life!

Prior Action by Commission: none

Action Requested: none

**Attachments:** none

Prepared by: Kuri Gill, Oregon Heritage Grants & Outreach Coordinator

Jamie French, Assistant State Archaeologist

Joy Sears, Preservation Specialist

Edited by Ian P. Johnson, Associate Deputy State Historic Preservation Officer

#### June 15, 2022

Agenda Item: 8a Action

Topic: Bullards Beach State Park Sewer Rehabilitation Project

Presented by: Matt Rippee, Deputy Director, Field Services

#### **Project Description:**

Staff requests approval for awarding a construction contract exceeding \$500,000. The project will replace the main sewer lift station and existing main gravity sewer line that serves all of the RV hookup sites, restroom/shower buildings, park office, maintenance yard and residence. The current piping material is concrete which is experiencing significant infiltration/inflow from high ground water during the winter months. This puts significant strain and wear on our septic lift station and sewage treatment facility.

Construction is scheduled for October 2023 – December 2023. Due to delays in product availability we will be bidding the project during the Spring of 2023 to allow time for the contractor to acquire materials prior to construction.

The project will include the following elements;

- Demolish the existing main gravity sewer line,
- Demolish the existing main sewer lift station,
- Install approximately 2,500 linear feet of new gravity sewer line,
- Install new sewer lift station and controls.

Preliminary estimated construction cost is \$750,000. The project will be funded using FIP funds.

Prior Action by Commission: None

**Action Requested:** Approval

**Attachments:** #1 – Project Plans

#2 – Project Specifications

Prepared by: Darrell Monk, Senior Project Manager

# OPRD BULLARDS BEACH SEWER REHABILITATION

## GENERAL NOTES

- SURVEY PROVIDED BY KPFF, DATED 2/15/19. VERTICAL DATUM: NAVD 88 (GEOID 12A). ELEVATION WAS ESTABLISHED THROUGH A 3 MINUTE GPS OBSERVATION ON CONTROL POINT NO. 1 USING THE OREGON REAL-TIME GPS NETWORK (ORGN). BASIS OF BEARINGS FOR THIS SURVEY IS THE OREGON COORDINATE REFERENCE SYSTEM (OCRS), OREGON COAST ZONE. THE RESULTANT BEARING OF CONTROL POINTS 16 AND 17 BEING NORTH 82°58'50" EAST.
- 2. CONSTRUCTION LAYOUT (ALL ACTUAL LINES AND GRADES) SHALL BE STAKED BY A PROFESSIONAL SURVEYOR, REGISTERED IN THE STATE OF OREGON, BASED ON COORDINATES, DIMENSIONS, BEARINGS, AND ELEVATIONS, AS SHOWN, ON THE PLANS.
- 3. PROJECT CONTROL SHALL BE FIELD VERIFIED AND CHECKED FOR RELATIVE HORIZONTAL POSITION PRIOR TO BEGINNING CONSTRUCTION LAYOUT. [SEE SHEET C2 FOR PROJECT CONTROL INFORMATION.]
- 4. PROJECT CONTROL SHALL BE FIELD VERIFIED AND CHECKED FOR RELATIVE VERTICAL POSITION BASED ON THE BENCHMARK STATED HEREON, PRIOR TO BEGINNING CONSTRUCTION LAYOUT.
- 5. WHEN DIMENSIONS AND COORDINATE LOCATIONS ARE REPRESENTED DIMENSIONS SHALL HOLD OVER COORDINATE LOCATION. NOTIFY THE CIVIL ENGINEER OF RECORD IMMEDIATELY UPON DISCOVERY OF ANY DISCREPANCIES.
- 6. CONTRACTOR SHALL PRESERVE AND PROTECT FROM DAMAGE ALL EXISTING MONUMENTATION DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING AND PAYING FOR THE REPLACEMENT OF ANY MONUMENTS DAMAGED OR REMOVED DURING CONSTRUCTION. NEW MONUMENTS SHALL BE REESTABLISHED BY A LICENSED SURVEYOR.
- 7. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO THESE PLANS, THE PROJECT SPECIFICATIONS AND THE APPLICABLE REQUIREMENTS OF THE 2018 OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION, AND THE 2017 OREGON PLUMBING SPECIALTY CODE
- 8. THE COMPLETED INSTALLATION SHALL CONFORM TO ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES, ORDINANCES AND REGULATIONS. ALL PERMITS, LICENSES AND INSPECTIONS REQUIRED BY THE GOVERNING AUTHORITIES FOR THE EXECUTION AND COMPLETION OF WORK SHALL BE SECURED BY THE CONTRACTOR PRIOR TO COMMENCING CONSTRUCTION.
- ATTENTION: OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH OAR 952-001-0090. YOU MAY OBTAIN COPIES OF THE RULES BY CALLING THE CENTER. (NOTE: THE TELEPHONE NUMBER FOR THE OREGON UTILITY NOTIFICATION CENTER IS (503) 232-1987). EXCAVATORS MUST NOTIFY ALL PERTINENT COMPANIES OR AGENCIES WITH UNDERGROUND UTILITIES IN THE PROJECT AREA AT LEAST 48 BUSINESS-DAY HOURS, BUT NOT MORE THAN 10 BUSINESS DAYS PRIOR TO COMMENCING AN EXCAVATION, SO UTILITIES MAY BE
- 10. THE LOCATION OF EXISTING UNDERGROUND UTILITIES SHOWN ON THE PLANS ARE FOR INFORMATION ONLY AND ARE NOT GUARANTEED TO BE COMPLETE OR ACCURATE. CONTRACTOR SHALL VERIFY ELEVATIONS, PIPE SIZE, AND MATERIAL TYPES OF ALL UNDERGROUND UTILITIES PRIOR TO COMMENCING WITH CONSTRUCTION AND SHALL BRING ANY DISCREPANCIES TO THE ATTENTION OF KPFF CONSULTING ENGINEERS, 72 HOURS PRIOR TO START OF CONSTRUCTION TO PREVENT GRADE AND ALIGNMENT CONFLICTS.
- 11. THE ENGINEER OR OWNER IS NOT RESPONSIBLE FOR THE SAFETY OF THE CONTRACTOR OR HIS CREW. ALL O.S.H.A. REGULATIONS SHALL BE STRICTLY ADHERED TO IN THE PERFORMANCE OF
- 12. TEMPORARY AND PERMANENT EROSION CONTROL MEASURES SHALL BE IMPLEMENTED. THE ESC FACILITIES SHOWN IN THESE PLANS ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, ESC FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT LEAVE THE SITE.
- 13. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL ROADWAYS, KEEPING THEM CLEAN AND FREE OF CONSTRUCTION MATERIALS AND DEBRIS, AND PROVIDING DUST CONTROL AS
- 14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING AND SCHEDULING ALL WORK WITH THE OWNER.
- 15. NOTIFY OPRD INSPECTOR 72 HOURS BEFORE STARTING WORK.

# SEPARATION STATEMENT

ALL WATER MAIN CROSSINGS SHALL CONFORM TO THE OREGON STATE HEALTH DEPARTMENT, CHAPTER 333. WATER MAINS SHALL CROSS OVER SANITARY SEWERS WITH A 18" MINIMUM CLEARANCE BETWEEN OUTSIDE DIAMETERS OF PIPE WITH ALL PIPE JOINTS EQUIDISTANT FROM CROSSING. HORIZONTAL SEPARATION BETWEEN WATER MAINS AND SANITARY SEWERS IN PARALLEL INSTALLATIONS SHALL BE 10'. MAINTAIN 12" MINIMUM VERTICAL DISTANCE FOR ALL OTHER UTILITY CROSSINGS AND 12" HORIZONTAL PARALLEL DISTANCE. IN CASES WHERE IT IS NOT POSSIBLE TO MAINTAIN THE MINIMUM 10' HORIZONTAL SEPARATION, THE WATER MAIN SHALL BE LAID ON A SEPARATE SHELF IN THE TRENCH 18" INCHES ABOVE THE SEWER.

# **CONSTRUCTION NOTES**

- 1. SUBGRADE AND TRENCH BACKFILL SHALL BE COMPACTED TO AT LEAST 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-698. FLOODING OR JETTING THE BACKFILLED TRENCHES WITH
- 2. SPECIAL INSPECTION REQUIRED FOR ALL COMPACTION TESTING.

### <u>UTILITIES</u>

- 1. ADJUST ALL INCIDENTAL STRUCTURES, MANHOLES, VALVE BOXES, CATCH BASINS, FRAMES AND COVERS, ETC. TO FINISHED GRADE.
- 2. CONTRACTOR SHALL ADJUST ALL EXISTING FLEXIBLE UTILITIES (WATER, TV, TELEPHONE, ELEC., ETC.) TO CLEAR ANY NEW GRAVITY DRAIN UTILITIES (SANITARY SEWER, ETC.) IF CONFLICT OCCURS.
- CONTRACTOR SHALL COORDINATE WITH PRIVATE UTILITY COMPANIES FOR THE ADJUSTMENT TO GAS, ELECTRICAL. POWER AND TELEPHONE SERVICE.
- 4. BEFORE BACKFILLING ANY SUBGRADE UTILITY IMPROVEMENTS CONTRACTOR SHALL SURVEY AND RECORD MEASUREMENTS OF EXACT LOCATION AND DEPTH AND SUBMIT TO ENGINEER AND OWNER.

## **SANITARY**

- 1. CONNECTIONS TO EXISTING SANITARY SEWERS SHALL CONFORM TO THE 2018 OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION, SECTION 00490, "WORK ON EXISTING SEWERS AND STRUCTURES".
- 2. BEGIN LAYING SANITARY SEWER PIPE AT THE LOW POINT OF THE SYSTEM. TRUE TO GRADE AND ALIGNMENT INDICATED WITH UNBROKEN CONTINUITY OF INVERT. THE CONTRACTOR SHALL ESTABLISH LINE AND GRADE FOR THE SANITARY SEWER PIPE USING A LASER.
- 3. ALL HORIZONTAL CONNECTIONS TO THE SANITARY SEWERS SHALL BE OF THE 'WYE' BRANCH TYPE.

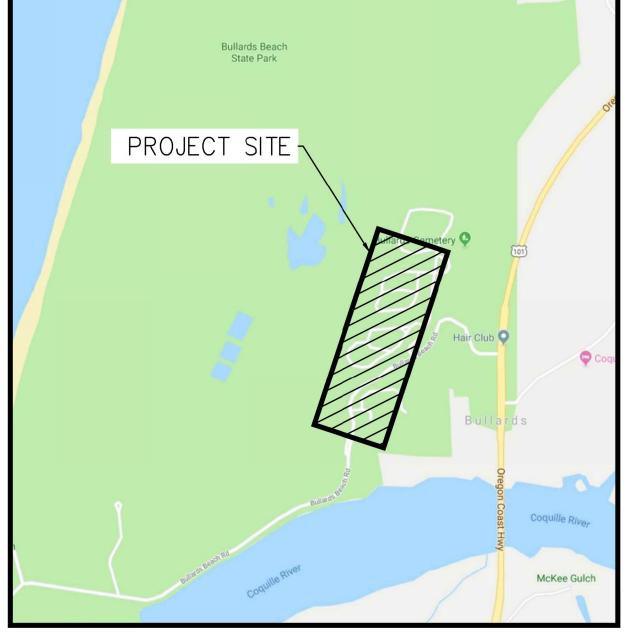
- CONTRACTOR SHALL PREVENT SEDIMENTS AND SEDIMENT LADEN WATER FROM ENTERING THE STORM
- 2. TRENCH BEDDING AND BACKFILL SHALL BE AS SHOWN ON THE PIPE BEDDING AND BACKFILL DETAIL, AND THE PROJECT SPECIFICATIONS.

## MATERIAL NOTES

- GENERAL: MATERIALS SHALL BE NEW. THE USE OF MANUFACTURER'S NAMES, MODELS, AND NUMBERS IS INTENDED TO ESTABLISH STYLE, QUALITY, APPEARANCE, AND USEFULNESS. PROPOSED SUBSTITUTIONS WILL REQUIRE WRITTEN APPROVAL FROM THE ENGINEER PRIOR TO
- SANITARY SEWER PIPING SHALL BE PVC ASTM D 3034 PIPE, CONFORMING TO THE PROJECT SPECIFICATIONS; AS INDICATED IN THE PLANS.

# **ABBREVIATIONS**

AC	ASPHALT CONCRETE AREA DRAIN APPROXIMATE BOLLARD BUILDING BACK OF WALK	MH	MANHOLE
AD	AREA DRAIN	MIN	MINIMUM
APPROX	APPROXIMATE	N	NORTHING
В	BOLLARD	O.D	OUTSIDE DIAMETER
BLDG	BUILDING	OPRD	OREGON PARKS AND RECREATION
D U	DITOR OF THE LIT		DEPARTMENT
CB	CATCH BASIN	OVH/OH	OVERHEAD
CL	CENTERLINE	P/L	PROPERTY LINE
CMP	CENTERLINE CORRUGATED METAL PIPE	PVC	POLYVINYL CHLORIDE
			RIM
CONC.	CONCRETE	R.O.W	RIGHT-OF-WAY
COTG	CLEANOUT TO GRADE	S	SLOPE (FT/FT)
CP	CONTROL POINT	SD	STORM DRAIN
Δ	DELTA	SDMH	
D/W	CLEANOUT CONCRETE CLEANOUT TO GRADE CONTROL POINT DELTA DRIVEWAY DIAMETER DUCTILE IRON PIPE EASTING	SHT	SHEET
DIA.,Ø	DIAMETER	SS	SANITARY SEWER
DIP	DUCTILE IRON PIPE	SSMH	SANITARY SEWER MANHOLE
E	EASTING	ST	STREET
EXIST./EX FDC FF	EXISTING FIRE DEPARTMENT CONNECTION	STA	STATION
FDC	FIRE DEPARTMENT CONNECTION	STD	STANDARD
FF	FINISH FLOOR ELEVATION	TG	TOP OF GROUND
FG	FINISH GRADE FIRE HYDRANT GRADE BREAK GAS LINE	TP	TOP OF PAVEMENT
FH	FIRE HYDRANT	TS	TOP OF STAIR
GB	GRADE BREAK	TW	TOP OF WALL
			TOP OF WALK
GV	GATE VALVE	TYP	TYPICAL
Н	HEIGHT	UG	UNDERGROUND
HCP	HANDICAP PARKING SPACE		UNDERGROUND ELECTRIC
HP	HIGH POINT	W	WATER
ID	HIGH POINT INSIDE DIAMETER INVERT ELEVATION	W/	WITH
IE	INVERT ELEVATION	WM	WATER METER
INV	INVERT	WV	WATER VALVE
LP	LIGHT POLE		



MAP FROM GOOGLE

VICINITY MAP

TEL: 503-289-1879

CONTACT: DARREL MONK

SCALE: NTS

# PROJECT CONTACTS

OREGON PARKS AND RECREATION DEPARTMENT 725 SUMMER STREET NE. SUITE C SALEM, OREGON 97301-1266

CIVIL ENGINEER: KPFF CONSULTING ENGINEERS 111 SW FIFTH AVENUE, SUITE 2600 PORTLAND, OREGON 97204 TEL: 503-542-3835 CONTACT: JESSICA ADAMS, PE

**ELECTRICAL ENGINEER:** REYES ENGINEERING, INC. 321 NE COUCH STREET, STE 403 PORTLAND, OREGON 97232 TEL: 503-438-4464 CONTACT: AJ ZVIBLEMAN

**NOTICE TO EXCAVATORS:** ATTENTION: OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH OAR 952-001-0090. YOU MAY OBTAIN COPIES OF THE RULES BY CALLING THE (NOTE: THE TELEPHONE NUMBER FOR THE OREGON UTILITY NOTIFICATION CENTER IS (503)-232-1987).

POTENTIAL UNDERGROUND FACILITY OWNERS

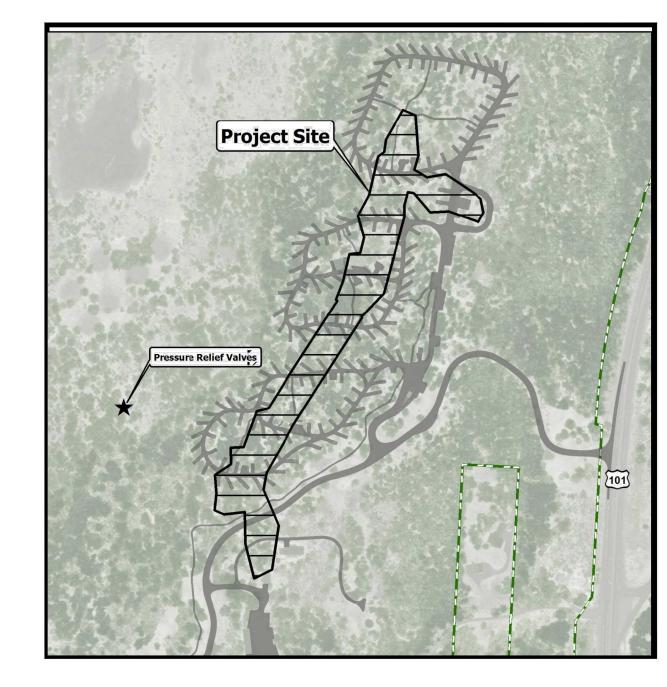
# Dig Safely.

Call the Oregon One-Call Center 1-800-332-2344

# **EMERGENCY TELEPHONE NUMBERS**

NW NATURAL GAS M-F 7am-6pm 503-226-4211 Ext.4313 AFTER HOURS 503-226-4211 CENTURYLINK CITY BUREAU OF MAINTENANCE 503-823-1700 CITY WATER VERIZON

503-464-7777 1-800-573-1311 503-823-4874 1-800-483-1000



PROJECT SITE MAP

# SHEET INDEX

SHEET NUMBER	SHEET TITLE
C1	COVER SHEET
C2	OVERALL SHEET LAYOUT
C3	PLAN AND PROFILE - STA 10+00 to STA 14+00
C4	PLAN AND PROFILE - STA 14+00 TO STA 19+00
C5	PLAN AND PROFILE - STA 19+00 TO STA 23+50
C6	PLAN AND PROFILE - STA 23+50 TO 26+50
C7	PLAN AND PROFILE - OFFICE SERVICE
C8	PLAN AND PROFILE - RV DUMP SITE
C9	PUMP STATION LAYOUT PLAN
C10	PUMP STATION WETWELL
C11	PUMP STATION VALVE VAULT
C12	PUMP STATION DETAILS
C13	DETAILS
C14	DETAILS
C15	EROSION CONTROL PLAN
C16	EROSION CONTROL DETAILS
S1	GENERAL STRUCTURAL NOTES
S2	GENERAL STRUCTURAL NOTES CONTINUED
S3	GENERAL STRUCTURAL NOTES CONTINUED
S4	SPECIAL INSPECTIONS AND TESTING
S5	SPECIAL INSPECTIONS AND TESTING CONTINUED
S6	PUMP STATION SECTIONS AND DETAILS
S7	PUMP STATION SECTIONS AND DETAILS
S8	PUMP STATION SECTIONS AND DETAILS
E1	PUMP STATION EXISTING DETAILS AND DEMOLITION
E2	PUMP HOUSE ELECTRICAL PLANS





CO OPR SHEET:

C1 OF 26 CONTRACT #: 25694

**REHABILITATION** 

SEWEH PARK

# **NOTES:**

1.) VERTICAL DATUM: NAVD 88 (GEOID 12A)

ELEVATION WAS ESTABLISHED THROUGH A 3 MINUTE GPS OBSERVATION ON CONTROL POINT NO. 1 USING THE OREGON REAL-TIME GPS NETWORK (ORGN).

- 2.) BASIS OF BEARINGS FOR THIS SURVEY IS THE OREGON COORDINATE REFERENCE SYSTEM (OCRS), OREGON COAST ZONE. THE RESULTANT BEARING OF CONTROL POINTS 16 AND 17 BEING NORTH 82°58'50" EAST.
- 3.) THIS MAP DOES NOT REPRESENT A BOUNDARY SURVEY. A TITLE REPORT WAS NOT PROVIDED FOR THE PURPOSE OF THIS SURVEY. EASEMENTS AFFECTING THE SUBJECT PROPERTY MAY EXIST.
- 4.) UTILITY LOCATIONS SHOWN ARE PER FIELD LOCATED UTILITY PAINT MARKS & REFERENCE MAPS MADE AVAILABLE BY THE VARIOUS UTILITY PROVIDERS. UNLESS INDICATED, DEPTHS OF UTILITY LINES ARE NOT AVAILABLE. ALL UTILITY LOCATIONS SHOULD BE FIELD VERIFIED (POTHOLED) PRIOR TO CONSTRUCTION.

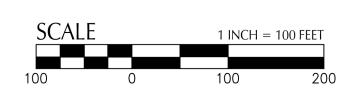
# LEGEND:

///////////////////////////////////////	BUILDING OUTLINE WITH DOOR
	CONCRETE SURFACE
	ASPHALT SURFACE
	WALL
	— BUILDING OVERHANG
	CURB LINE
	— EDGE OF ASPHALT
	BRUSH LINE
SD SD	STORM LINE
ss ss	SANITARY SEWER LINE
w w	WATER LINE
они они	OVERHEAD UTILITY LINES
[ ]	UNDERGROUND LINE PER AS-BUILTS
	SIGN
HCR	HANDICAP RAMP
o RD	ROOF DRAIN
□JB	<b>ELECTRICAL JUNCTION BOX</b>
E 🗵	ELECTRICAL METER
□ EC	ELECTRICAL CABINET
TRAN	TRANSFORMER
<b>─</b>	GUY ANCHOR
<b>\$</b>	LUMINAIRE
Ø	POWER POLE
GV	GAS VALVE
(3)	SANITARY MANHOLE WITH STRUCTUR
CO	SANITARY CLEAN OUT
	SANITARY STRUCTURE #
ОНВ	HOSE BIB
OICV	IRRIGATION CONTROL VALVE
o UR	UNKNOWN RISER
UC	UTILITY CONNECTION RISER
La Carte de la Car	DECIDUOUS TREE -PERIMETER REPRESENTS DRIPLINE
	CONIFEROUS TREE -PERIMETER REPRESENTS DRIPLINE
<b>A</b> #1	PROJECT CONTROL POINT

# × KEY NOTES

- 1 APPROXIMATE LOCATION OF EXISTING AIR/VACUUM VALVES TO BE REPLACED PER KEYNOTE 6 ON SHEET C3. FIELD VERIFY LOCATION WITH OWNER'S REPRESENTATIVE.
- APPROXIMATE LOCATION OF PROPOSED NEW 48"
  MANHOLE. FIELD VERIFY LOCATION WITH OWNER'S
  REPRESENTATIVE. CAP EXISTING ABANDONED 3—INCH
  FORCEMAIN WITH RESTRAINED CAP AS DIRECTED. CUT
  AND REMOVE EXISTING LINE 3—INCH FORCEMAIN AND
  CONVERT TO GRAVITY FLOW. INSTALL MANHOLE CHANNEL
  IN BASE AS REQUIRED. SEE DETAIL 1/C14









REVISION DATE B'

JKA SL JUNE 2021

SL
DESIGNED BY
RC
DRAWN BY

HISTORY
Discovery



PECREATION DE

IRDS BEACH SEWER REHABILITATION
PEACH STATE PARK

OVERALL OPRD BULLA BULLA BULLARDS E

SHEET:

C2 OF 26

OPRIS#: CONTRACT #: 25694 8334

SIGNED

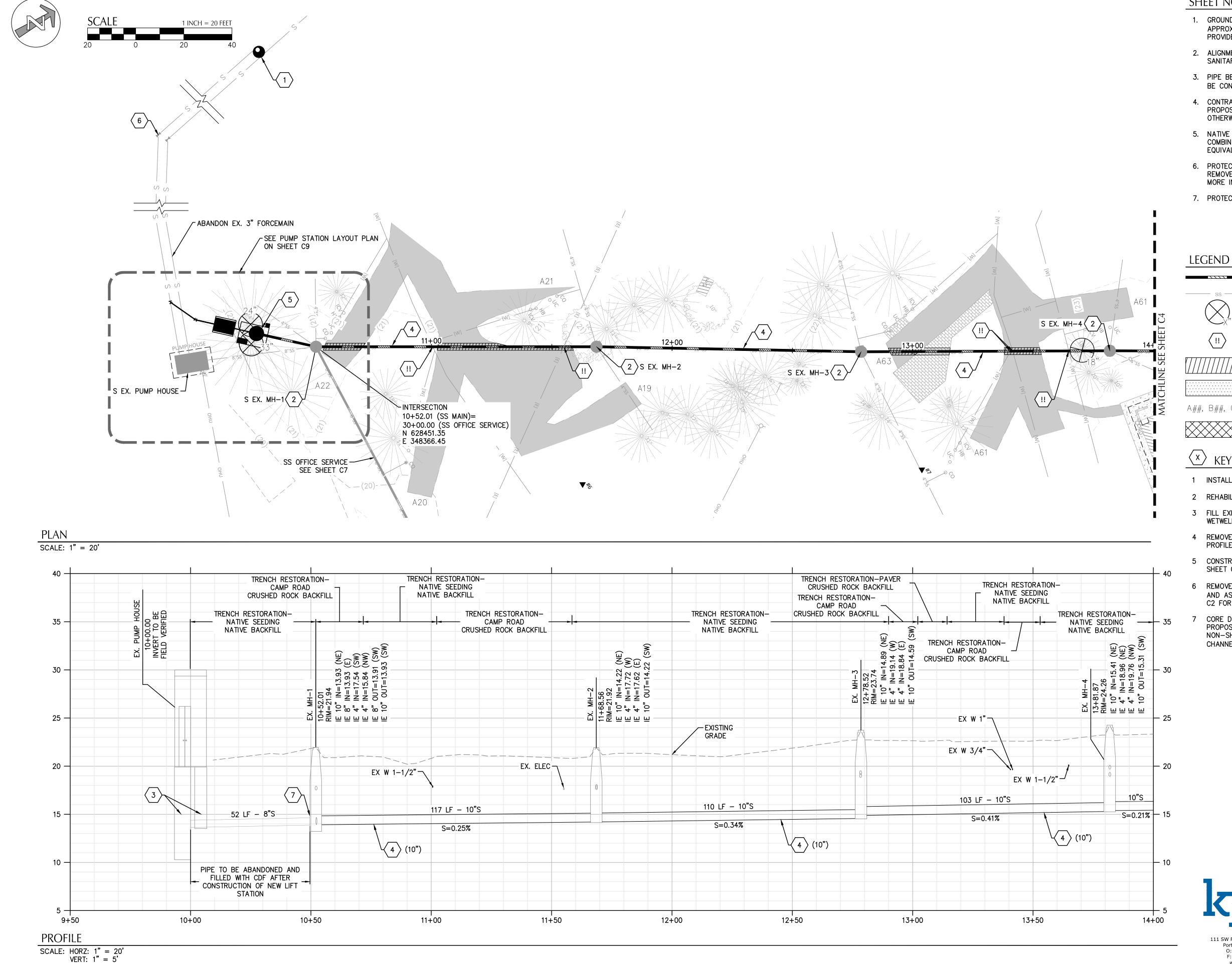
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1003

SHEET:

OPRIS#:

25690



# **SHEET NOTES:**

- 1. GROUNDWATER LEVEL IS ESTIMATED TO BE APPROXIMATELY 4' BELOW GROUND. CONTRACTOR TO PROVIDE DEWATERING AS NEEDED.
- 2. ALIGNMENT IS BASED ON CENTERLINE OF THE EXISTING SANITARY SEWER.
- 3. PIPE BEDDING AND BACKFILL FOR ALL UTILITIES SHALL BE CONSTRUCTED PER DETAIL 2/C14.
- 4. CONTRACTOR SHALL FIELD VERIFY ALL INVERTS. PROPOSED PIPE SHALL MATCH EXISTING INVERTS, UNLESS OTHERWISE NOTED.
- 5. NATIVE SURFACE RESTORATION SHALL CONSIST OF A COMBINATION OF RYEGRASS AND FINE FESCUES OR EQUIVALENT.
- 6. PROTECT ALL EXISTING TREES NOT CALLED OUT TO BE REMOVED. SEE SPECIFICATION SECTION 01560.3.05 FOR MORE INFORMATION ON TREE ROOT PROTECTION.
- 7. PROTECT ALL EXISTING ELECTRICAL AND WATER LINES.

PROPOSED PIPE EXISTING PIPE REMOVE TREE (SIZED NOTED) UTILITY CROSSING TRENCH RESTORATION-CAMP ROAD, SEE DETAIL 2/C13 TRENCH RESTORATION-PAVER, SEE DETAIL 5/C13 A##, B##, C## CAMP SITE NUMBER



- 1 INSTALL NEW 48" MANHOLE. SEE SHEET C2.
- 2 REHABILITATE MANHOLE PER DETAIL 6/C13
- 3 FILL EXISTING COMMINUTOR TANK AND LIFT STATION WETWELL WITH CDF AND INFILL HATCHES WITH PCC.
- 4 REMOVE EXISTING SEWER PIPE, EXISTING SIZE NOTED ON PROFILE, AND INSTALL NEW AS NOTED ON PROFILE.

SEE DETAIL 3/C13

TRENCH RESTORATION-MAIN ROAD,

- 5 CONSTRUCT LIFT STATION IMPROVEMENTS PER DETAIL SHEET C10.
- REMOVE AND REPLACE EXISTING AIR/VACUUM VALVES AND ASSOCIATED PIPING. SEE DETAIL 8/C13. SEE SHEET C2 FOR VALVE LOCATION.
- CORE DRILL MANHOLE OUTLET AS REQUIRED TO INSTALL PROPOSED UPSIZED PIPE. FILL ANNULAR SPACE WITH NON-SHRINK GROUT. REMOVE AND REFORM MANHOLE CHANNEL AS REQUIRED SEE DETAIL 3/C14.



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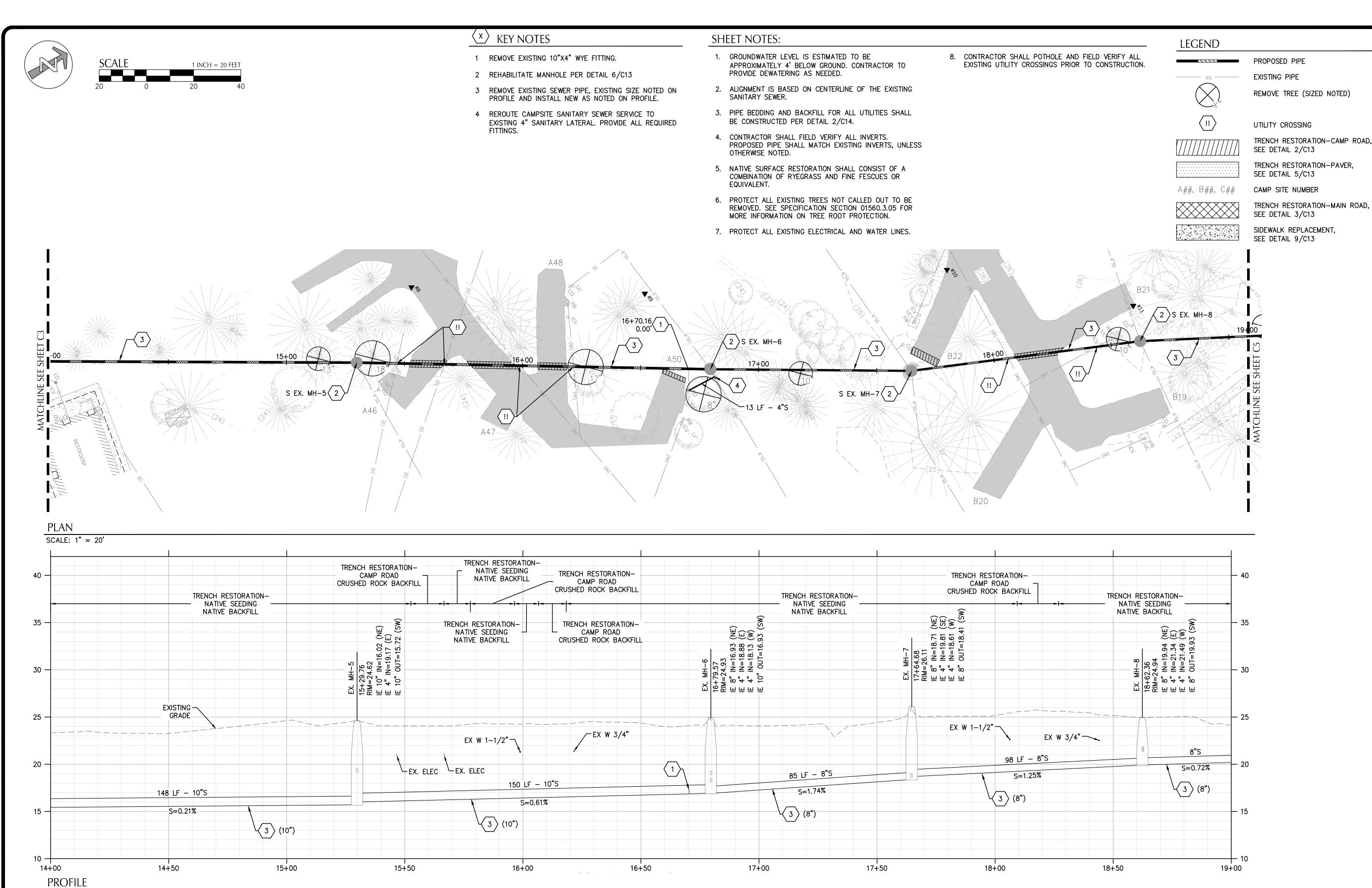
SEWER REHABILITATION PARK

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ORE

PLAN AND PROFILE OPRD BULLARDS BEACH S BULLARDS BEACH STATE SHEET:

C3 OF 26 CONTRACT #: OPRIS#: 25694 8334



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DIGITALLY SIGNED

OREGON

OREGON

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- STA 14+00 TO SEWER REHABILITATION PARK

PLAN AND PROFILE OPRD BULLARDS BEACH S

SHEET:

25694

C4 OF 26

PARKS

ORE

CONTRACT #:

SCALE: HORZ: 1" = 20' VERT: 1" = 5'

PLAN SCALE: 1'' = 20'

> TRENCH RESTORATION—
> — CAMP ROAD
> CRUSHED ROCK BACKFILL TRENCH RESTORATION—PAVER CRUSHED ROCK BACKFILL TRENCH RESTORATION— CAMP ROAD\_ CRUSHED ROCK BACKFILL TRENCH RESTORATION—SIDEWALK CRUSHED ROCK BACKFILL TRENCH RESTORATION—
>
> NATIVE SEEDING
>
> NATIVE BACKFILL TRENCH RESTORATION-TRENCH RESTORATION-NATIVE SEEDING NATIVE BACKFILL NATIVE SEEDING NATIVE BACKFILL TRENCH RESTORATION—
> NATIVE SEEDING
> NATIVE BACKFILL (N) (W) (S) (S) TRENCH RESTORATION—
> - NATIVE SEEDING
> - NATIVE BACKFILL EX. MH-12
> 23+13.52
> RIM=28.85
> IE 6" IN=24.39 (
> IE 4" IN=24.29 (
> IE 4" IN=23.79 (
> IE 8" OUT=23.69 EX. MH-11
> 22+09.27
> RIM=28.34
> IE 8" IN=22.84 (
> IE 4" IN=22.89 (
> IE 8" OUT=22.69 (SW) (SW) (SV) EX. MH-10 20+87.85 RIM=26.44 IE 8" IN=21.74 ( IE 4" IN=22.04 ( IE 4" IN=23.04 ( IE 8" OUT=21.54 EX. MH-9
> 19+77.44
> RIM=25.78
> IE 8" IN=20.7
> IE 4" IN=21.2
> IE 8" OUT=20 EX. ELEC EXISTING — GRADE 6"S 104 LF - 8"S EX. ELEC — 121 LF - 8"S S=0.82% 110 LF - 8"S 2 (6") 115 LF - 8"S S=0.78% 2 (8") S=0.69% 2 (8") S=0.72% 2 (8") CONTRACTOR SHALL FIELD VERIFY
> AND MATCH EXISTING SLOPE AND INVERTS 2 (8") 22+00 19+00 19+50 20+00 20+50 21+00 21+50 22+50 23+00 23+50

# SHEET NOTES:

- 1. GROUNDWATER LEVEL IS ESTIMATED TO BE APPROXIMATELY 4' BELOW GROUND. CONTRACTOR TO PROVIDE DEWATERING AS NEEDED.
- 2. ALIGNMENT IS BASED ON CENTERLINE OF THE EXISTING
- 3. PIPE BEDDING AND BACKFILL FOR ALL UTILITIES SHALL BE CONSTRUCTED PER DETAIL 2/C14.
- PROPOSED PIPE SHALL MATCH EXISTING INVERTS, UNLESS OTHERWISE NOTED.
- COMBINATION OF RYEGRASS AND FINE FESCUES OR EQUIVALENT.
- MORE INFORMATION ON TREE ROOT PROTECTION.
- 7. PROTECT ALL EXISTING ELECTRICAL AND WATER LINES.

EXISTING PIPE REMOVE TREE (SIZED NOTED) UTILITY CROSSING TRENCH RESTORATION-CAMP ROAD, SEE DETAIL 2/C13 TRENCH RESTORATION-PAVER, SEE DETAIL 5/C13 A##, B##, C## CAMP SITE NUMBER

# $\langle x \rangle$ key notes

- 30

- 1 REHABILITATE MANHOLE PER DETAIL 6/C13
- PROFILE AND INSTALL NEW AS NOTED ON PROFILE.

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SHEET: C5 OF 26 OPRIS#:

**PROFILE** SCALE: HORZ: 1" = 20' VERT: 1" = 5'

SANITARY SEWER.

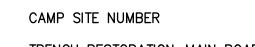
4. CONTRACTOR SHALL FIELD VERIFY ALL INVERTS.

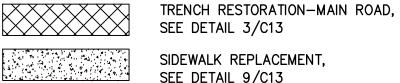
5. NATIVE SURFACE RESTORATION SHALL CONSIST OF A

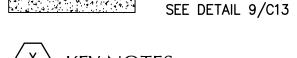
PROTECT ALL EXISTING TREES NOT CALLED OUT TO BE REMOVED. SEE SPECIFICATION SECTION 01560.3.05 FOR

LEGEND

PROPOSED PIPE







2 REMOVE EXISTING SEWER PIPE, EXISTING SIZE NOTED ON

S STA

50

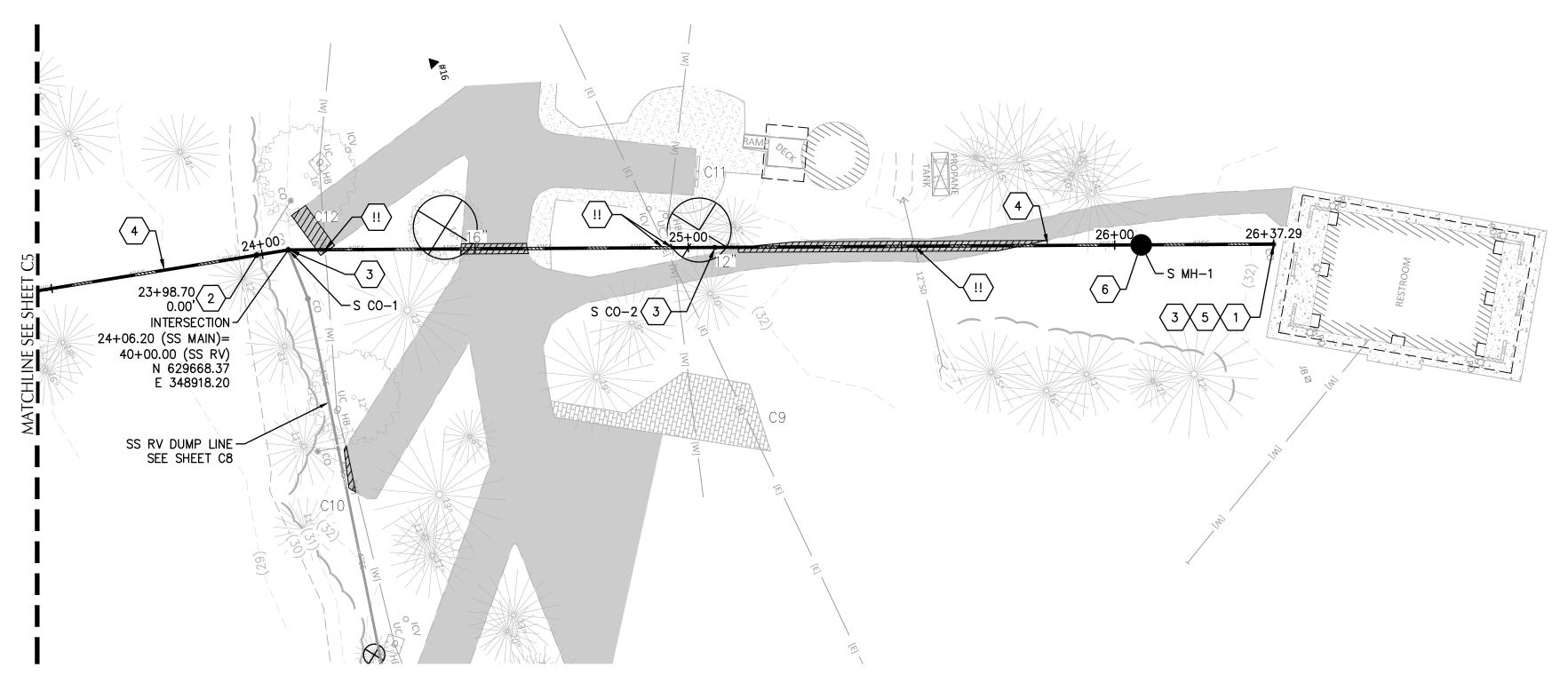
- STA 19+00 TO SEWER REHABILITATION PARK

PLAN AND PROFILE OPRD BULLARDS BEACH S

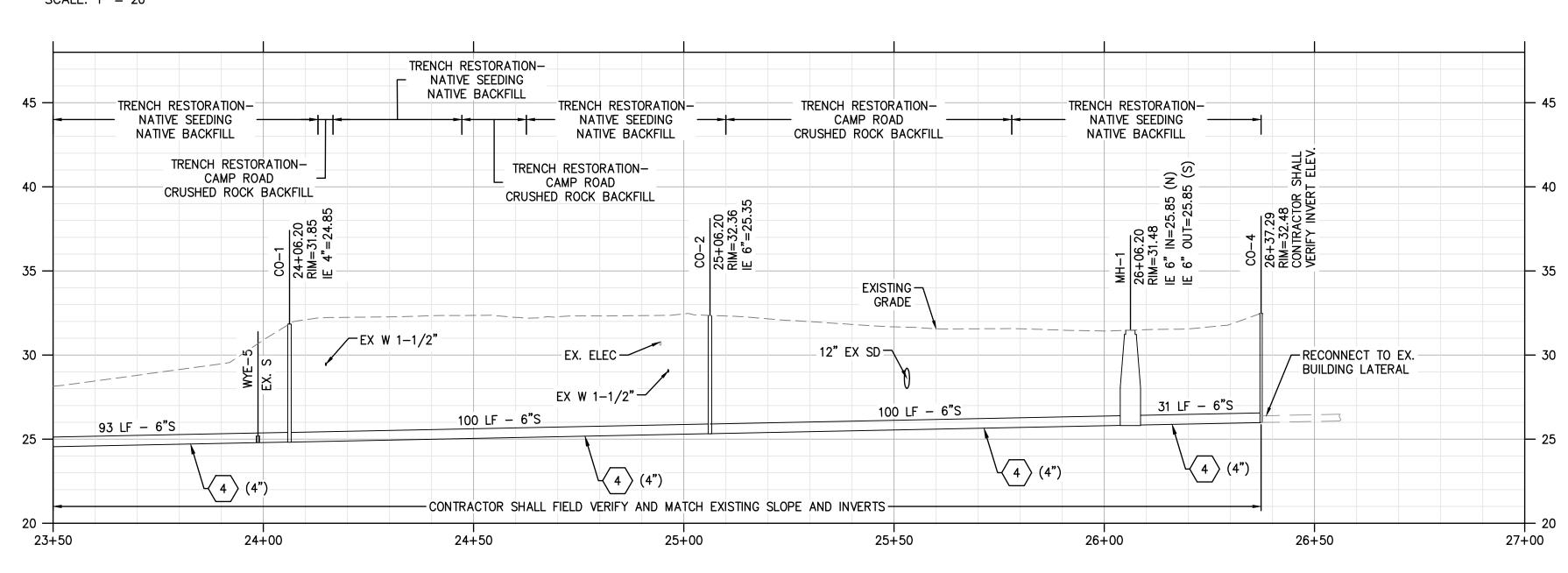
CONTRACT #: 25694







PLAN SCALE: 1" = 20'

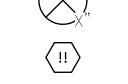


PROFILE SCALE: HORZ: 1" = 20' VERT: 1" = 5' **SHEET NOTES:** 

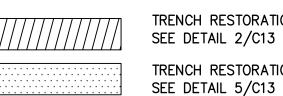
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- 7. PROTECT ALL EXISTING ELECTRICAL AND WATER LINES.

# LEGEND

PROPOSED PIPE EXISTING PIPE REMOVE TREE (SIZED NOTED)



UTILITY CROSSING



TRENCH RESTORATION-CAMP ROAD, SEE DETAIL 2/C13



CAMP SITE NUMBER

TRENCH RESTORATION-PAVER,

TRENCH RESTORATION-MAIN ROAD, SEE DETAIL 3/C13

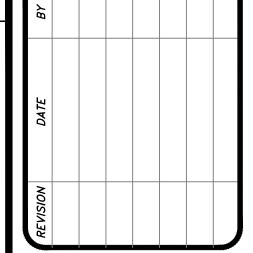
# $\langle x \rangle$ KEY NOTES

- MAINTAIN SEWER CONNECTION TO THE BUILDING. INSTALL 6"X4" REDUCER AND TRANSITION FITTING AS REQUIRED. CONTRACTOR TO FIELD VERIFY INVERT ELEVATION.
- 2 INSTALL 4"X4" WYE FITTING AND RECONNECT EXISTING LATERAL PIPE. PROVIDE ALL REQUIRED FITTINGS
- 3 REMOVE EXISTING CLEANOUT AND INSTALL NEW CLEANOUT TO GRADE, SEE DETAIL 4/C13.
- 4 REMOVE EXISTING SEWER PIPE, EXISTING SIZE NOTED ON PROFILE AND INSTALL NEW AS NOTED ON PROFILE.
- 5 CONTRACTOR TO POTHOLE AND FIELD VERIFY THE LOCATION OF THE RESTROOM SANITARY LATERAL.
- 6 INSTALL NEW MANHOLE PER DETAIL 7/C13.



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N AND PROFILE BULLARDS BEACH , ARDS BEACH STATE PLAN OPRD 1 BULLAR

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- STA 23+50 TO SEWER REHABILITATION PARK

SHEET:

C6 OF 26 OPRIS#: 25694 8334

CONTRACT #:

\_\_8" EX SD

72 LF - 8"S

31+50

WYE-1 EX. 30+60.02

60 LF - 8"S

30+00

(8")

30+50

29 LF - 8"S

20 LF - 8"S-

5 LF - 8"S-

31+00

TRENCH RESTORATION— — MAIN ROAD CRUSHED ROCK BACKFILL

EXISTING GRADE

117 LF - 8"S

32+50

CONTRACTOR SHALL FIELD VERIFY AND MATCH EXISTING SLOPE AND INVERTS-

32÷00

5 (8")

CO-13 33+08.14 RIM=21.51 IE 8"=16.08

33+00

### **SHEET NOTES:**

- 1. GROUNDWATER LEVEL IS ESTIMATED TO BE APPROXIMATELY 4' BELOW GROUND. CONTRACTOR TO PROVIDE DEWATERING AS NEEDED.
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- 7. PROTECT ALL EXISTING ELECTRICAL AND WATER LINES.

PROPOSED PIPE EXISTING PIPE REMOVE TREE (SIZED NOTED) UTILITY CROSSING TRENCH RESTORATION-CAMP ROAD, SEE DETAIL 2/C13 TRENCH RESTORATION-PAVER, SEE DETAIL 5/C13 A##, B##, C## CAMP SITE NUMBER

SEE DETAIL 9/C13

SIDEWALK REPLACEMENT,

(8")  $\left\langle 5\right\rangle _{1}$ 36 LF - 6"S RECONNECT TO EX. —
BUILDING LATERAL
FIELD VERIFY
INVERT ELEVATION

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34+50 34+60

SHEET:

C7 OF 26 CONTRACT #: 25694

3 INSTALL 4"X4" WYE FITTING AND RECONNECT EXISTING LATERAL PIPE. PROVIDE ALL REQUIRED FITTINGS.

4 MAINTAIN SEWER CONNECTION TO THE BUILDING.

5 REMOVE EXISTING SEWER PIPE, EXISTING SIZE NOTED ON PROFILE AND INSTALL NEW AS NOTED ON PROFILE.

6 FIELD VERIFY PIPE LOCATIONS AND ALIGNMENT.

7 MAINTAIN SEWER CONNECTION TO BUILDING. INSTALL REDUCERS AND FITTINGS AS REQUIRED. FIELD VERIFY

LEGEND

TRENCH RESTORATION-MAIN ROAD, SEE DETAIL 3/C13

NATIVE SEEDING NATIVE BACKFILL

34+00

102 LF - 8"S

33+50

5 (8")

29+50

SCALE: HORZ: 1" = 20' VERT: 1" = 5'

PROFILE

RE PARKS

ORE

PLAN AND PROFILE OPRD BULLARDS BEACH S

- OFFICE SERVICE SEWER REHABILITATION PARK

OPRIS#:

-CONTRACTOR SHALL FIELD VERIFY AND MATCH EXISTING SLOPE AND INVERTS-

41<del>+</del>50

42+00

43+00

43+50

42+50

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SHEET NOTES:

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- 7. PROTECT ALL EXISTING ELECTRICAL AND WATER LINES.

C

# LEGEND

PROPOSED PIPE EXISTING PIPE REMOVE TREE (SIZED NOTED)

UTILITY CROSSING

SEE DETAIL 5/C13

TRENCH RESTORATION-CAMP ROAD, SEE DETAIL 2/C13 TRENCH RESTORATION-PAVER,

 $\langle x \rangle$  key notes

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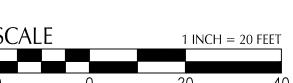
- 25

44+20

44+00

- 1 INSTALL 4"X4" WYE FITTING AND RECONNECT EXISTING LATERAL PIPE. PROVIDE ALL REQUIRED FITTINGS.
- 2 REMOVE EXISTING CLEANOUT AND INSTALL NEW CLEANOUT TO GRADE, SEE DETAIL 4/C13.
- 3 PROTECT EXISTING DUMP DISPOSAL SITE SIGNS. REMOVE AND REPLACE AS REQUIRED TO FACILITATE CONSTRUCTION.
- 4 PROTECT EXISTING SEPTIC TANK. MAINTAIN CONNECTION TO SEPTIC TANK.
- REMOVE EXISTING SEWER PIPE AND INSTALL NEW AS NOTED ON PROFILE.





PLAN AND PROFILE OPRD BULLARDS BEACH S BULLARDS BEACH STATE SHEET: OPRIS#:

' DUMP SITE REHABILITATION

- RV SEWER PARK

PARKS

12 LF - 4"S

40+50

41+00

39+90 40+00

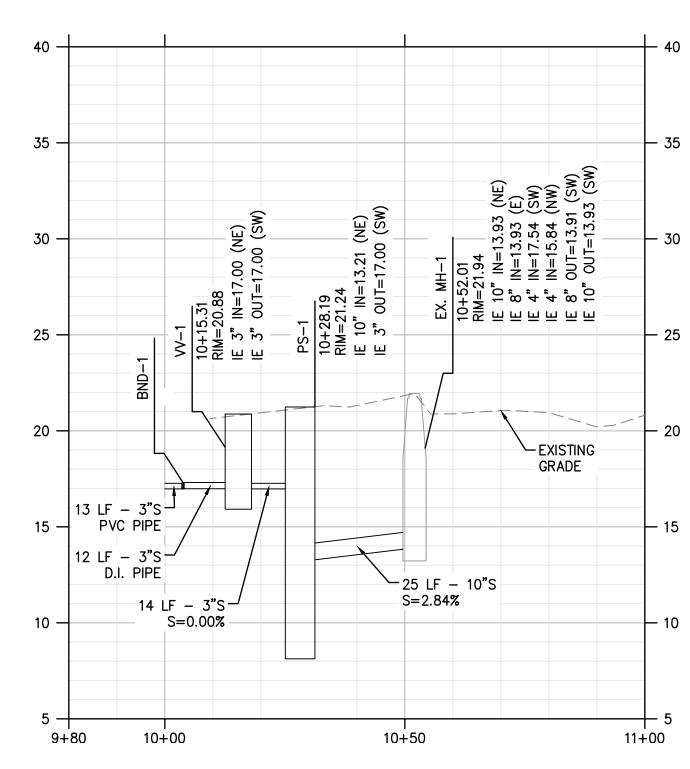
PROFILE

SCALE: HORZ: 1" = 20' VERT: 1" = 10'

C8 OF 26 CONTRACT #: 25694

# PUMP STATION SITE LAYOUT PLAN

SCALE: 1" = 10'



PROFILE SCALE: HORZ: 1" = 20' VERT: 1" = 5'

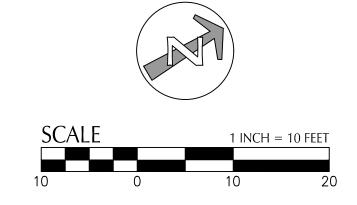
# (X) KEY CALLOUTS - PUMP STATION SITE

- 1 PUMP STATION WETWELL. SEE DWG C10.
- 2 VALVE VAULT. SEE DWG C11.
- 3 PUMP REMOVAL CRANE, SEE SHEET C10.
- 4 PUMP DISCONNECT PANEL, SEE ELECTRICAL DRAWINGS.
- 5 PUMP CONTROL PANEL INSIDE EXISTING PUMP HOUSE, SEE ELECTRICAL DRAWINGS
- 6 PLUG AND FILL EXISTING 8" SEWER PIPE, REMOVE IF NECESSARY.
- 7 EXISTING FENCE TO BE REMOVED AS NECESSARY FOR CONSTRUCTION. COORDINATE WITH OWNER FOR RELOCATION.
- 8 INSTALL RESTRAINED 3" 22.5° FITTING
- 1 3" 22.5" RESTRAINED FITTING 1 TRANSITION FITTING AS REQUIRED

1 – 3" SPOOL FIELD VERIFY LOCATION, ELEVATIONS, AND PIPE CONFIGURATION PRIOR TO CONSTRUCTION

10 FILL EXISTING COMMINUTOR TANK AND LIFT STATION WETWELL WITH CDF AND INFILL HATCHES WITH PCC.

S STRUCTURE TABLE			
STRUCTURE ID	NORTHING	EASTING	
PS-1	628432.93	348349.05	
VV-1	628422.98	348339.64	







PUMP STATION LAYOUT PLAN OPRD BULLARDS BEACH SEWER REHABILITATION BULLARDS BEACH STATE PARK

SHEET:

C9 OF 26 opris#: 25694 CONTRACT #:

PUMP STATION SECTION A-A

SCALE: 1/2" = 1'-0"

PUMP POWER CABLE TRAY W/ LOCKABLE COVER

# (X) KEY CALLOUTS - PUMP STATION SITE

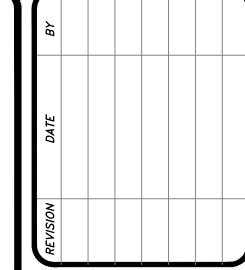
- CONCERTOR N80 5.5 HP 230V PUMPS AS SPECIFIED.
- 2 3-INCH D.I. DISCHARGE ELBOW
- 3 TWO 2-INCH SCHEDULE 40 STAINLESS STEEL GUIDE BARS FOR EACH PUMP (FULL HEIGHT). ATTACH TO HATCH UNI-STRUT WITH UPPER GUIDE BAR BRACKET.
- 4 3" CL 53 D.I. DISCHARGE PIPING. COORDINATE DISCHARGE CONNECTION WITH PUMP
- 5 3" GROOVED PIPE COUPLING. ALL PIPES SHALL BE GROOVED FOR FLEXIBLE
- 6 3" D.I. GROOVED 90° BEND. ALL FITTINGS SHALL BE GROOVED FOR FLEXIBLE
- 7 PIPE BOOT, KOR-N-SEAL OR EQUIVALENT. TYP. ALL PIPE PENETRATIONS.
- 8 1/8" STAINLESS STEEL LIFTING CABLE FOR INFLUENT DEFLECTOR INSPECTION HOLE COVER. PERMANENTLY ATTACH UPPER END OF CABLE TO HATCH
- 9 PUMP LIQUID LEVEL CONTROL PRESSURE TRANSDUCER. PROVIDE MOUNTING BRACKET FASTENED TO HATCH UNI-STRUT.
- 10 PUMP POWER CABLE. PROVIDE EACH CABLE WITH A STAINLESS STEEL BASKET CABLE GRIP ATTACHED TO HOOK ON UPPER GUIDE BAR BRACKET. FURNISH & INSTALL DISCONNECT PLUGS AS SPECIFIED.
- 11 REDUNDANT PUMP LIQUID LEVEL CONTROL FLOAT. PROVIDE MOUNTING BRACKET FASTENED TO HATCH UNI-STRUT.
- 12 OVERFLOW FLOAT SWITCH. PROVIDE MOUNTING BRACKET FASTENED TO HATCH
- 13 WALL MOUNT CRANE BASE AS SPECIFIED, SEE STRUCTURAL DRAWINGS.
- 14 PUMP DAVIT CRANE AS SPECIFIED.
- 15 4" WETWELL VENT, D.I. PIPE SPOOLS, 4" D.I. BENDS (FLxFL) W/ 1/8" SST SCREEN ON OUTLET.
- 16 MOUNT VENT ON 6"x6"-10' PRESSURE TREATED POST W/ 3' BURY DEPTH.
  MOUNT PIPE TO POST WITH STAINLESS STEEL HARDWARE.
- 17 ALUMINUM WETWELL ACCESS HATCH CAST INTO WETWELL TOP SLAB. SEE STRUCTURAL DRAWINGS.
- 18 ALUMINUM CABLE TRAY, CAST INTO TOP SLAB. SEE STRUCTURAL DRAWINGS.
- 19 PUMP DISCONNECT PANEL STAND. SEE STRUCTURAL DRAWINGS.
- 20 STAINLESS STEEL DISCONNECT PANEL W/ PUMP DISCONNECT PLUGS.
- 21 3" CL 53 D.I. SPOOL (GRxPE).
- 22 TOP 150L WETWELL INSERT BASE, OR APPROVED EQUAL
- 23 72" DIAMETER X 15' DEEP CONCRETE WETWELL
- 24 HIGH LEVEL FLOAT SWITCH. PROVIDE MOUNTING BRACKET FASTENED TO HATCH

## NOTES:

- ALL DUCTILE IRON BENDS AND FITTINGS SHALL HAVE A FUSION BOND EPOXY COATING ON THE INSIDE AND OUTSIDE.
- 2. HATCHES SHOWN SCREENED FOR CLARITY (FRAME ID AND OD SHOWN).
- 3. CONTRACTOR TO FIELD VERIFY ALL ELEVATIONS PRIOR TO ORDERING MATERIALS.









REHABILITATION

P STATION W BULLARDS BEAC ARDS BEACH STA

SHEET:

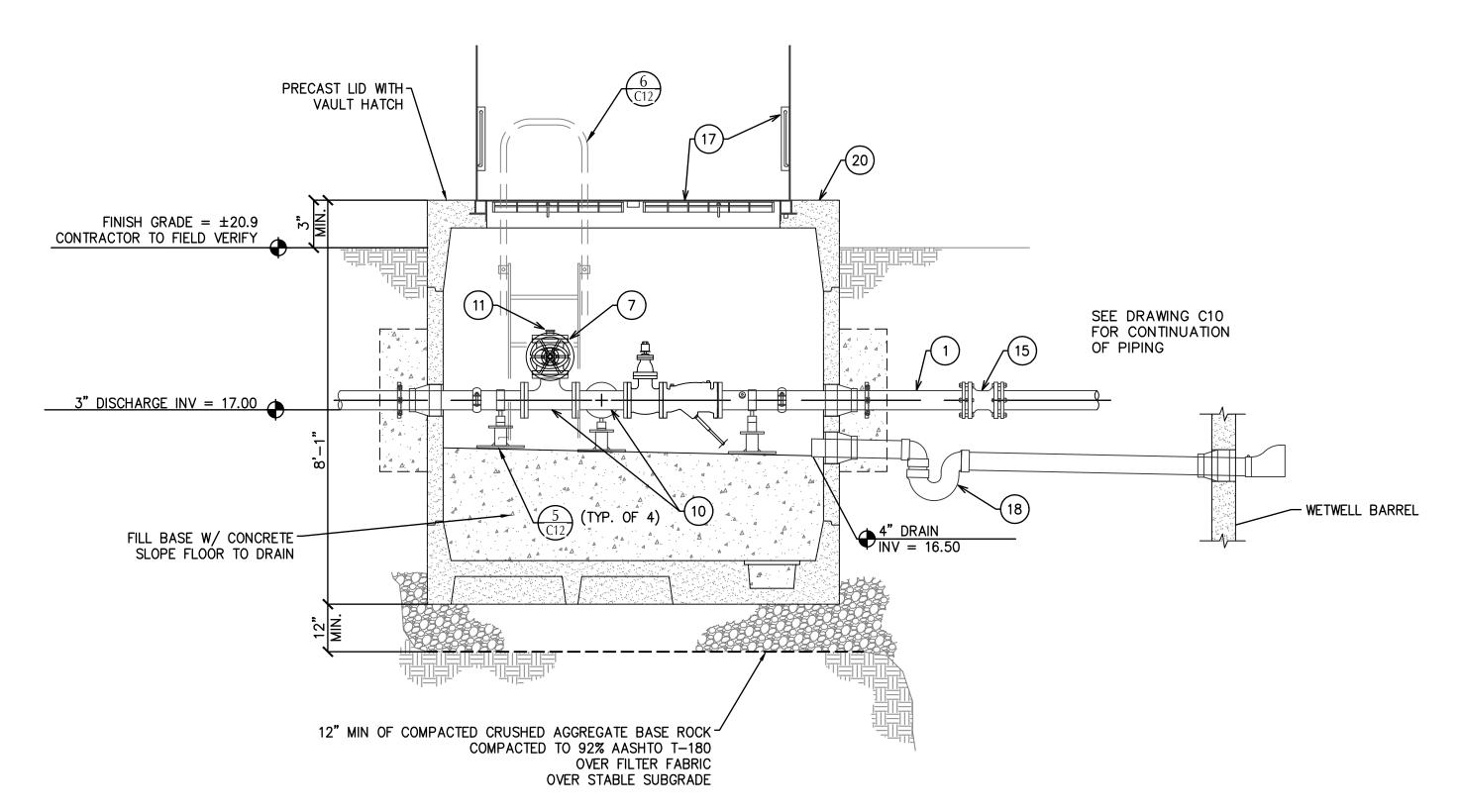
C10 OF 26 CONTRACT #: 25694 8334

CAST-IN-PLACE CONCRETE

THRUST RESTRAINT COLLAR

HATCH FRAME DRAIN TO-

EDGE OF HATCH SLAB



VALVE VAULT SECTION A-A

SCALE: 1/2" = 1'-0"

KEY CALLOUTS - VALVE VAULTS

WETWELL BARREL

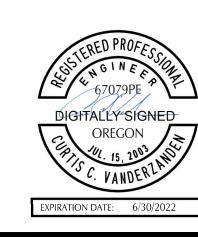
- 1 3" CL 53 D.I. PIPE SPOOL (GRxPE). ALL PIPES SHALL BE GROOVED FOR FLEXIBLE CONNECTION.
- 2 RETAINER GLAND FOR DUCTILE IRON PIPE CENTERED IN CONC. THRUST COLLAR. SERRATED LOCK STYLE SPLIT-RING RESTRAINT HARNESS (ROMAC 600, MEGALUG 1100SDB OR EQUAL).
- 3 PIPE BOOT, KOR-N-SEAL OR EQUIVALENT. TYP. ALL PIPE PENETRATIONS.
- 4 3" DUCTILE IRON TO STAINLESS STEEL PIPE GROOVED TRANSITION COUPLING. ALL PIPES SHALL BE GROOVED FOR FLEXIBLE CONNECTION.
- 5 3" SCH 40 STAINLESS STEEL SPOOL (GRxFL). ALL PIPES SHALL BE GROOVED FOR FLEXIBLE CONNECTION.
- 6 3" D.I. FLANGED SWING CHECK VALVE AS SECIFIED, W/ POSITION INDICATOR & MANUAL BACKFLOW ACTUATOR.
- 7 3" D.I. RESILIENT WEDGE GATE VALVE (FLxFL) AS SPECIFIED. PROVIDE HANDWHEEL OPERATOR FOR BYPASS PORT VALVE.
- 8 3" D.I. 90° BEND (FLxFL).
- 9 CL 53 D.I. PIPE SPOOL (FLxGR) W/ VIC-FLANGE ADAPTER (GRxFL). ALL PIPES SHALL BE GROOVED FOR FLEXIBLE CONNECTION.
- 10 3" D.I. TEE (FLxFLxFL).
- 11 BYPASS PUMPING PORT: 3" COMPANION FLANGE TAPPED & THREADED TO 2" NPT, 2" CAM-LOCK W/ 2" MALE NPT, 2" CAM-LOCK CAP W/ 1/8" HOLE DRILLED
- 12 CL 53 D.I. PIPE SPOOL, 12" LONG (FLxGR). ALL PIPES SHALL BE GROOVED FOR FLEXIBLE CONNECTION.
- 13 3" GROOVED PIPE COUPLING FOR AWWA DUCTILE IRON PIPE. ALL PIPES SHALL BE GROOVED FOR FLEXIBLE CONNECTION.
- 14 CL 53 D.I. PIPE SPOOL (GRxPE). ALL PIPES SHALL BE GROOVED FOR FLEXIBLE CONNECTION.
- 15 3" D.I. SOLID SLEEVE (MJxMJ) W/ RETAINER GLANDS.
- 16 FORCEMAIN CONNECTION POINT, SEE SHEET C9.
- 17 OLDCASTLE LOCKING GALVANIZED #2-332P STEEL DOORS
- 18 3" SCH 40 PVC DRAIN PIPE TO WETWELL, W/ P-TRAP. S=2% MIN.
- 19 3" TIDEFLEX SERIES TF-1 SLIP-ON CHECK VALVE.

20 OLDCASTLE CONCRETE VALVE VAULT 687-2LA

# NOTES:

- 1. ALL DUCTILE IRON BENDS AND FITTINGS SHALL HAVE A FUSION BOND EPOXY COATING ON THE INSIDE AND OUTSIDE.
- 2. HATCHES SHOWN SCREENED FOR CLARITY (FRAME ID AND OD SHOWN).
- 3. CONTRACTOR TO FIELD VERIFY ALL ELEVATIONS PRIOR TO ORDERING MATERIALS.

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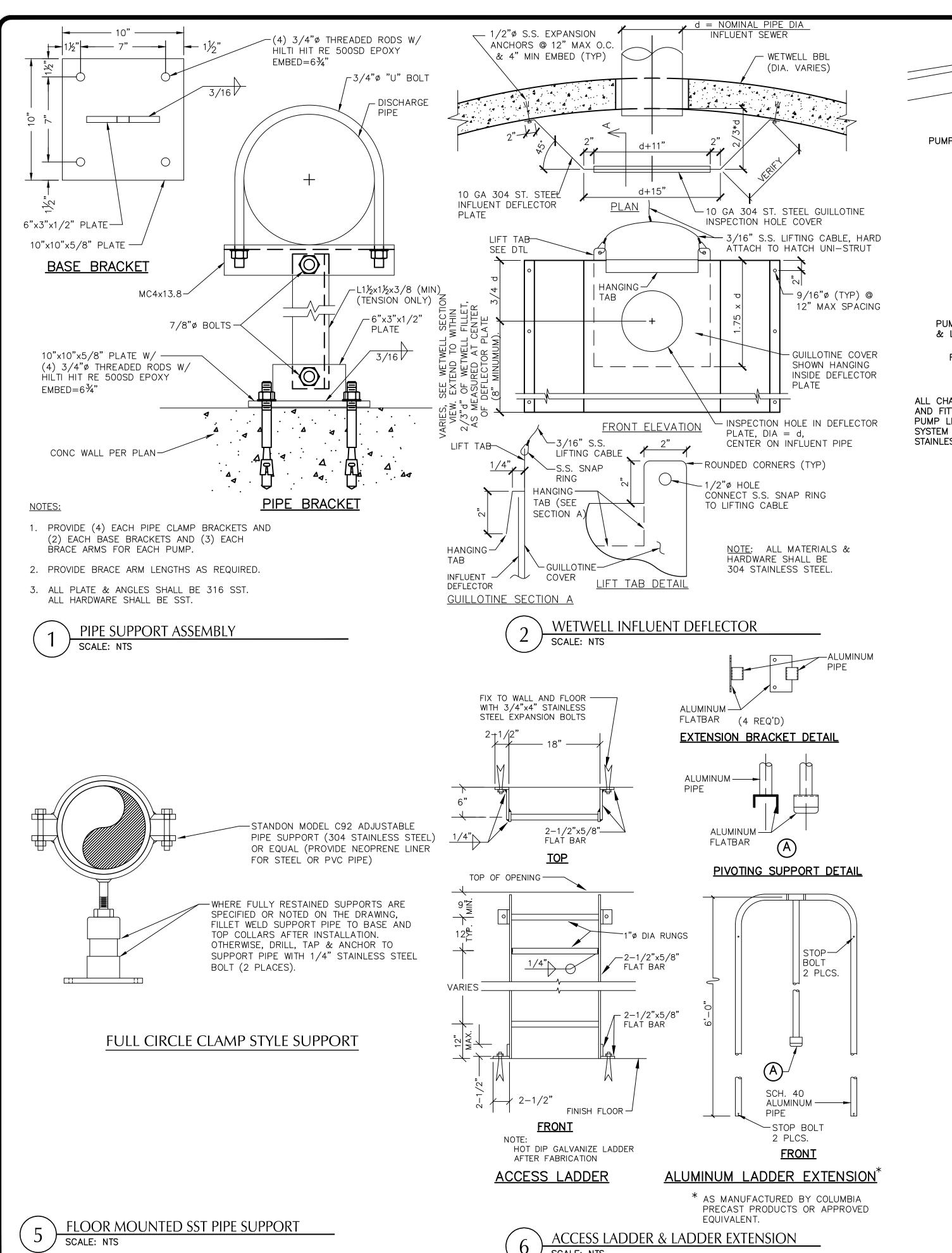


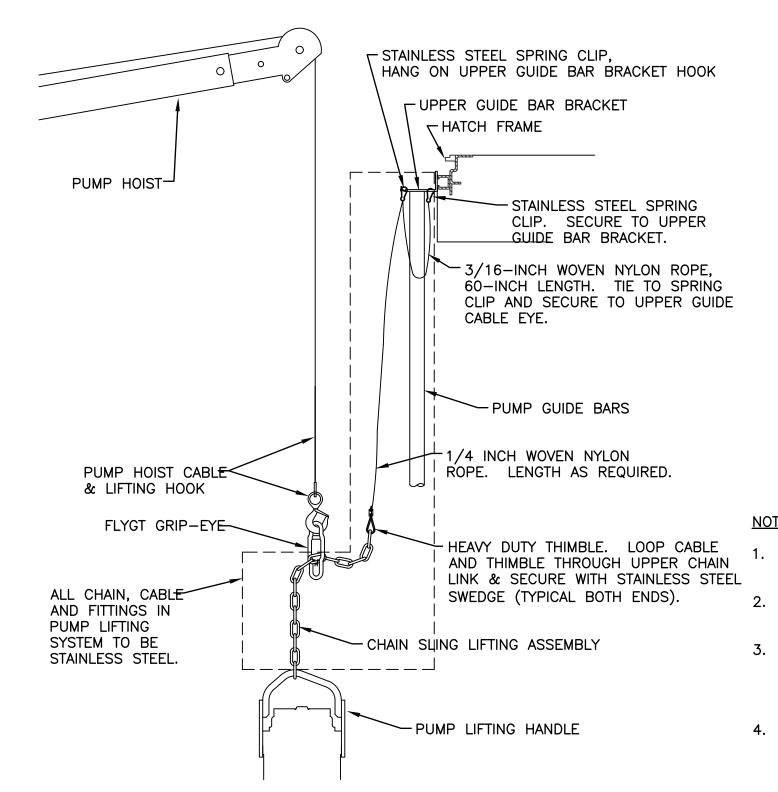
LVE VAULT 1 SEWER REHABILITATION 1E PARK

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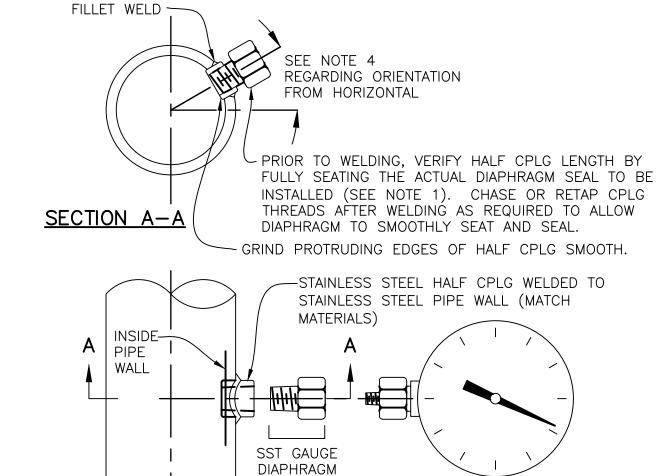
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C11 OF 26 CONTRACT #: 25694 8334





PUMP REMOVAL ASSEMBLY SCALE: NTS



CUT HALF COUPLING TO LENGTH SUCH THAT THE FACE OF THE GAUGE DIAPHRAGM IS FLUSH WITH THE END OF THE COUPLING WHEN DIAPHRAGM IS FULLY SEATED.

PRESSURE GAUGE

(ANALOG OR DIGITAL)

(SEE NOTE 3)

- 2. HALF COUPLING MAY BE FLUSH WITH INSIDE PIPE WALL OR PROTRUDE INTO PIPE BY NO MORE THAN THE HOST PIPE WALL THICKNESS. GRIND CPLG EDGES SMOOTH.
- 3. GAUGE DIAPHRAGM SEAL SHALL BE ASHCROFT TYPE 330 OR EQUAL. DIAPHRAGM SEAL SHALL BE RATED FOR CONTINUOUS DUTY, AND SHALL BE DESIGNED TO ALLOW THE GAUGE TO BE REMOVED UNDER PRESSURE WITHOUT DAMAGE TO THE DIAPHRAGM SEAL OR LEAKAGE OF PROCESS FLUID.
- 4. COUPLING & GAUGE ORIENTATION FROM HORIZONTAL TO BE AS NOTED ON DRAWINGS. UNLESS OTHERWISE NOTED, PRESSURE GAUGE ASSEMBLIES LOCATED IN BELOW-GRADE VAULTS OR PITS TO BE MOUNTED @ 30° UP FROM HORIZONTAL (SET TO ALLOW GAUGE TO BE READ FROM ABOVE & TO SHED CONDENSATION), AND PRESSURE GAUGE ASSEMBLIES LOCATED IN ABOVE-GRADE INSTALLATIONS TO BE MOUNTED
- 5. DIAPHRAGM & GAUGE ASSEMBLY SHALL HAVE LIQUID FILLED INTERNAL COMPONENTS TO EXCLUDE AIR POCKETS (WHICH WILL COMPROMISE ACCURACY OF PRESSURE READINGS).
- 6. HALF COUPLING & DIAPHRAGM SEAL ASSEMBLY SHALL BE INSPECTED BY THE ENGINEER AFTER WELDING & PRIOR TO FIELD INSTALLATION IN PIPE RUN (OR BE REMOVED FOR SUCH INSPECTION & REINSTALLED AT NO COST TO OWNER).



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SHEET:

C12 OF 26 CONTRACT #: 25694 8334

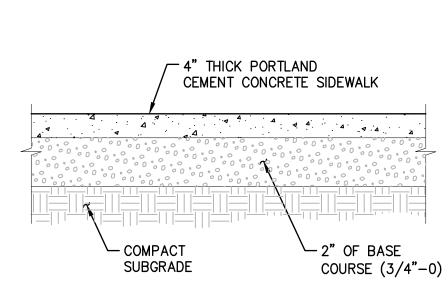
REHABILITATION

Nature
HISTORY
Discovery

P STATION DEI BULLARDS BEACH ARDS BEACH STATI PUMP OPRD B BULLAR

- 1. CONTRACTOR TO FIELD VERIFY THE CONDITION OF THE EXISTING SHUT OFF VALVE, ASSOCIATED PIPING, AND ENCLOSURE AND NOTIFY ENGINEER AND OWNER'S REPRESENTATIVE IF THE EXISTING MATERIAL CANNOT BE REUSED.
- 2. CONTRACTOR TO CONFIRM THAT SELECTED REPLACEMENT VALVE CAN FIT WITHIN EXISTING ENCLOSURE PRIOR TO ORDERING MATERIAL.

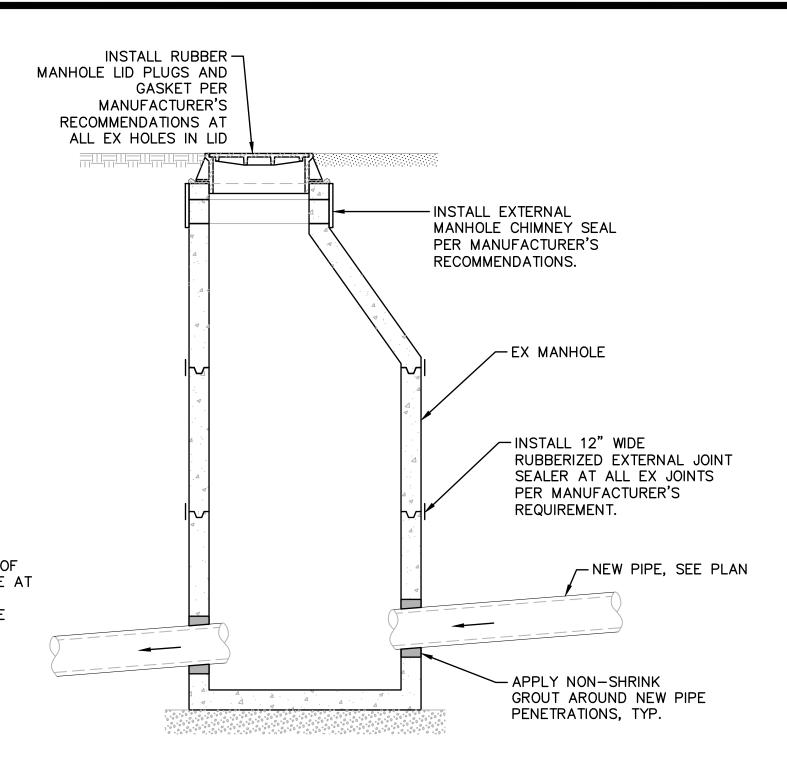




### NOTES:

- 1. SAWCUT AND REMOVE IMPACTED SIDEWALK AT CLOSEST EXISTING JOINT LINES.
- 2. CONCRETE SHALL BE COMMERCIALLY AVAILABLE 3,300 PSI MINIMUM COMPRESSION STRENGTH.
- 3. MATCH EXISTING JOINT SPACING

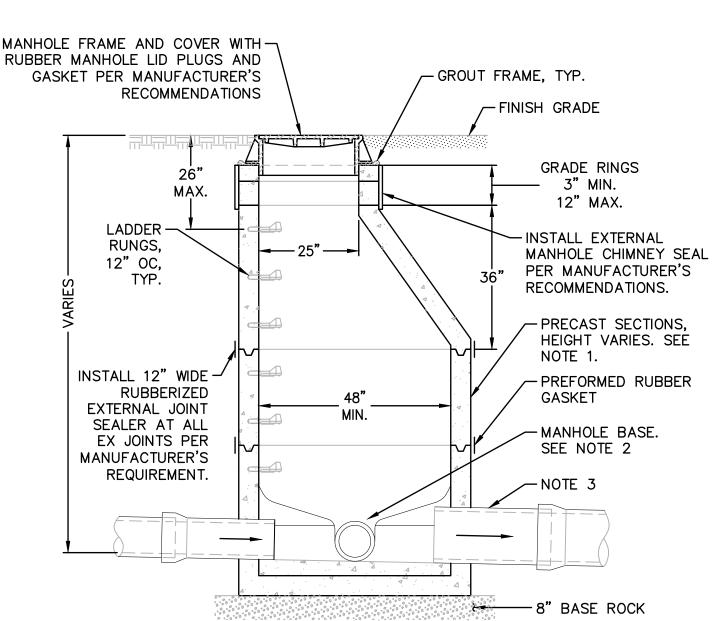
TRENCH RESTORATION - SIDEWALK SCALE: NTS



- 1. CONTRACTOR TO EXPOSE AND CLEAN EXTERIOR OF MANHOLE AS REQUIRED FOR SEALER MANUFACTURER'S RECOMMENDATIONS.
- 2. CONTRACTOR TO SUBMIT REHABILITATION SEQUENCE OF WORK FOR REVIEW PRIOR TO CONSTRUCTION.

3. PROVIDE DEWATERING AS REQUIRED.

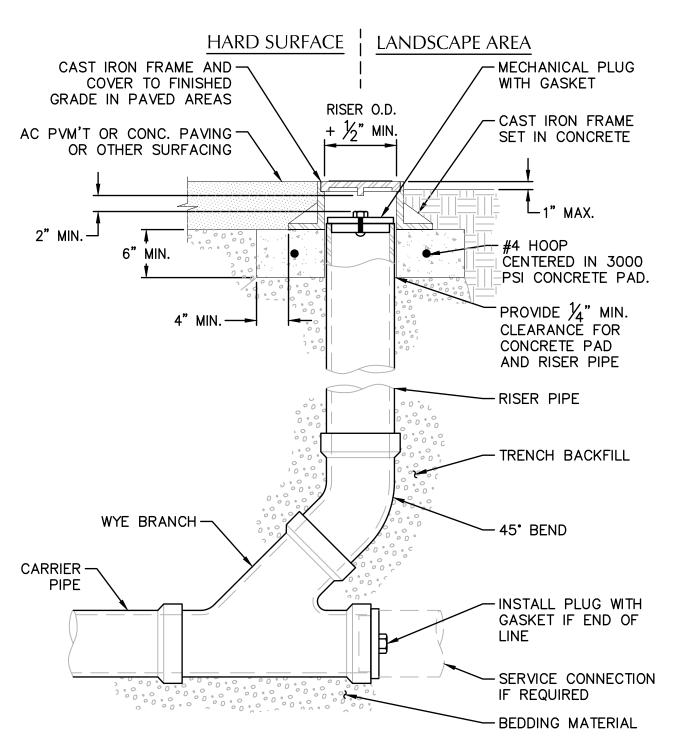
# MANHOLE REHABILITATION DETAIL SCALE: NTS



### NOTES:

- 1. ALL PRECAST SECTIONS SHALL CONFORM TO REQUIREMENTS OF ASTM C-478.
- 2. MANHOLE BASE MAY BE PRECAST OR CAST IN PLACE.
- 3. ALL CONNECTING PIPES SHALL HAVE FLEXIBLE, GASKETED AND UNRESTRAINED JOINT WITHIN 18" OF MANHOLE VAULT.
- 4. CONTRACTOR TO SUBMIT BUOYANCY CALCULATIONS, ASSUMING GROUND WATER IS WITHIN 2 FEET OF THE SURFACE, FOR REVIEW.

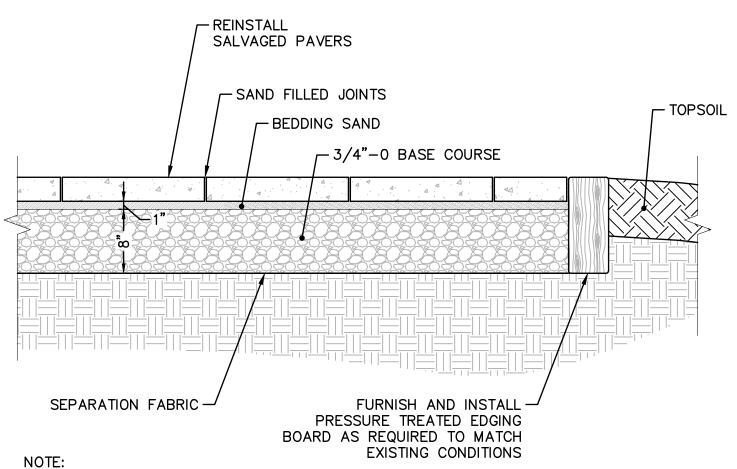
MANHOLE DETAIL SCALE: NTS



### NOTES:

- 1. CAST IRON FRAME AND COVER SHALL MEET H-20 LOAD REQUIREMENT.
- 2. FOR CARRIER PIPE SIZE 6"\$\OPERIGNEQ\$ AND LESS, PROVIDE RISER PIPE SIZE TO MATCH CARRIER PIPE.
- 3. FOR CARRIER PIPE SIZE 8"\$\OPERIGON\$ AND LARGER, RISER PIPE SHALL BE 6"\$\OPERIgon\$.
- 4. RISER PIPE MATERIAL TO MATCH CARRIER PIPE MATERIAL.

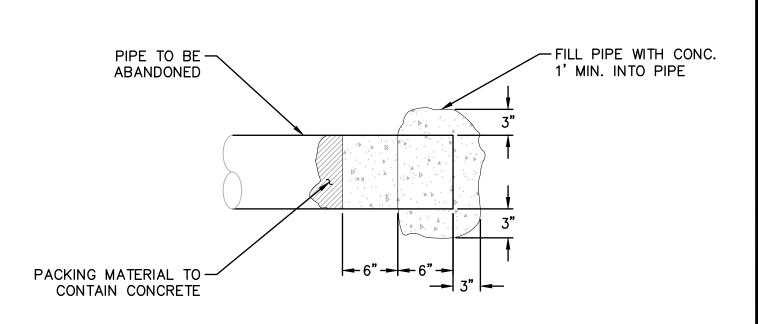
# STANDARD CLEANOUT (COTG) SCALE: NTS



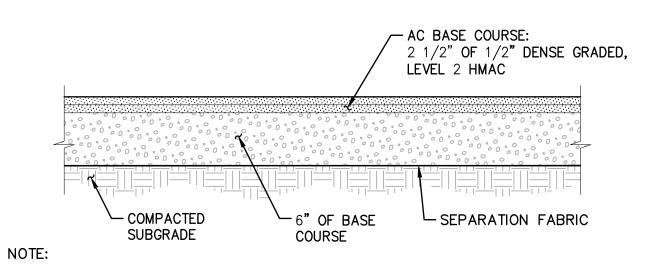
- 1. BEDDING SAND SHOWN SHALL BE WASHED, CLEAN, HARD, DURABLE CRUSHED GRAVEL OR STONE, FREE FROM SHALE, CLAY, FRIABLE MATERIALS, ORGANIC MATERIAL, FROZEN LUMPS, AND OTHER DELETERIOUS SUBSTANCES. DO NOT USE LIMESTONE SCREENINGS.
- 2. CONFORM TO ASTM C33 GRADATION FOR BEDDING SAND AS SHOWN BELOW:

SIEVE SIZE	PERCENT PASSIN
3/8 IN	100
NO. 4	95–100
NO. 8	80–100
NO. 16	50-85
NO. 30	25-60
NO. 50	5-20
NO. 100	2–10
NO. 200	0-1
NO. 16 NO. 30 NO. 50 NO. 100	50-85 25-60 5-20

TRENCH RESTORATION - PAVER SCALE: NTS

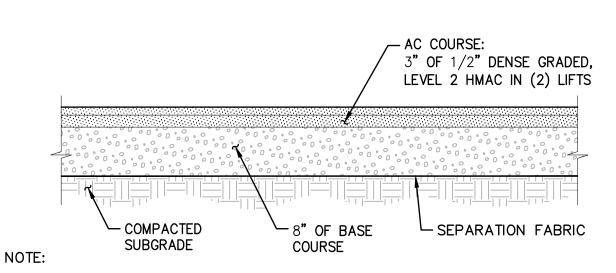


SCALE: NTS



1. AC THICKNESS SHALL BE AS SHOWN, OR MATCH EXISTING SURFACE AND BASE COURSE, WHICHEVER IS GREATER.

TRENCH RESTORATION - CAMP ROAD SCALE: NTS



1. AC THICKNESS SHALL BE AS SHOWN, OR MATCH EXISTING SURFACE AND BASE COURSE, WHICHEVER IS GREATER.

TRENCH RESTORATION - MAIN ROAD





C

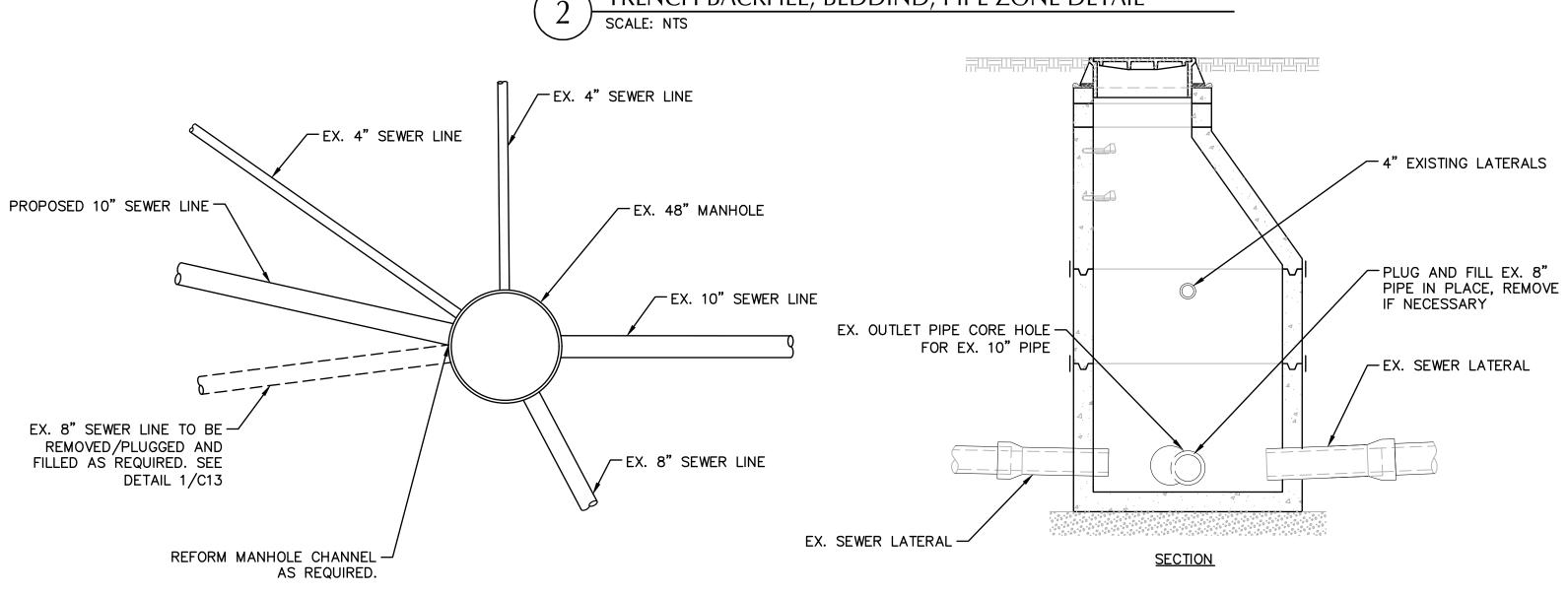


SEWER PARK BEACH STATE DETAILS OPRD BULLARDS E BULLARDS BEACH

**REHABILITATION** 

SHEET: OPRIS#:

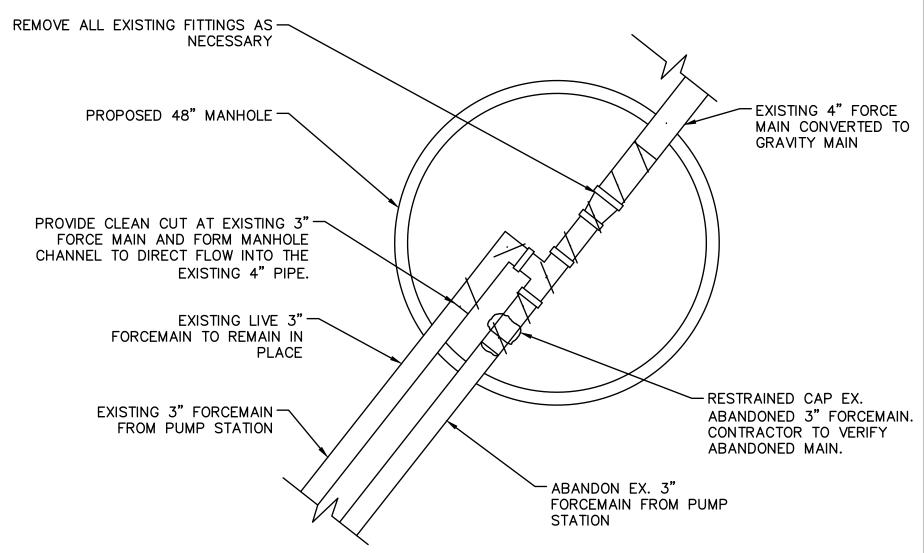
C13 OF 26 CONTRACT #: 25694 8334

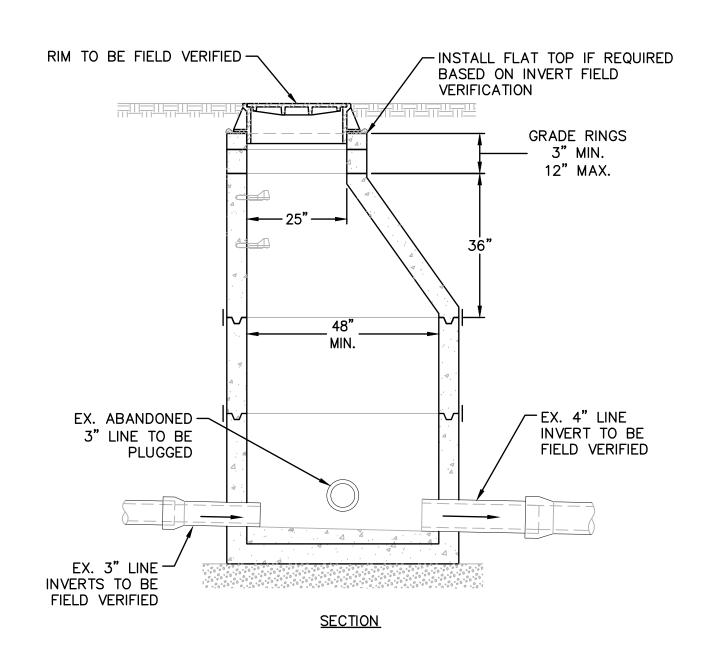


PLAN VIEW

1. CONTRACTOR TO FIELD VERIFY CORE HOLE TO HOLE CLEARANCE IS AT LEAST 9" BETWEEN LATERALS.

NEW MAINLINE PIPE AT EXISTING MANHOLE





PLAN VIEW

### NOTES:

- 1. LOCATION OF MANHOLE TO BE FIELD VERIFIED WITH OWNER'S REPRESENTATIVE
- 2. MANHOLE SIZE AND INVERT ELEVATIONS TO BE FIELD VERIFIED.
- 3. CONTRACTOR TO SUBMIT SHOP DRAWINGS PRIOR TO ORDERING







C

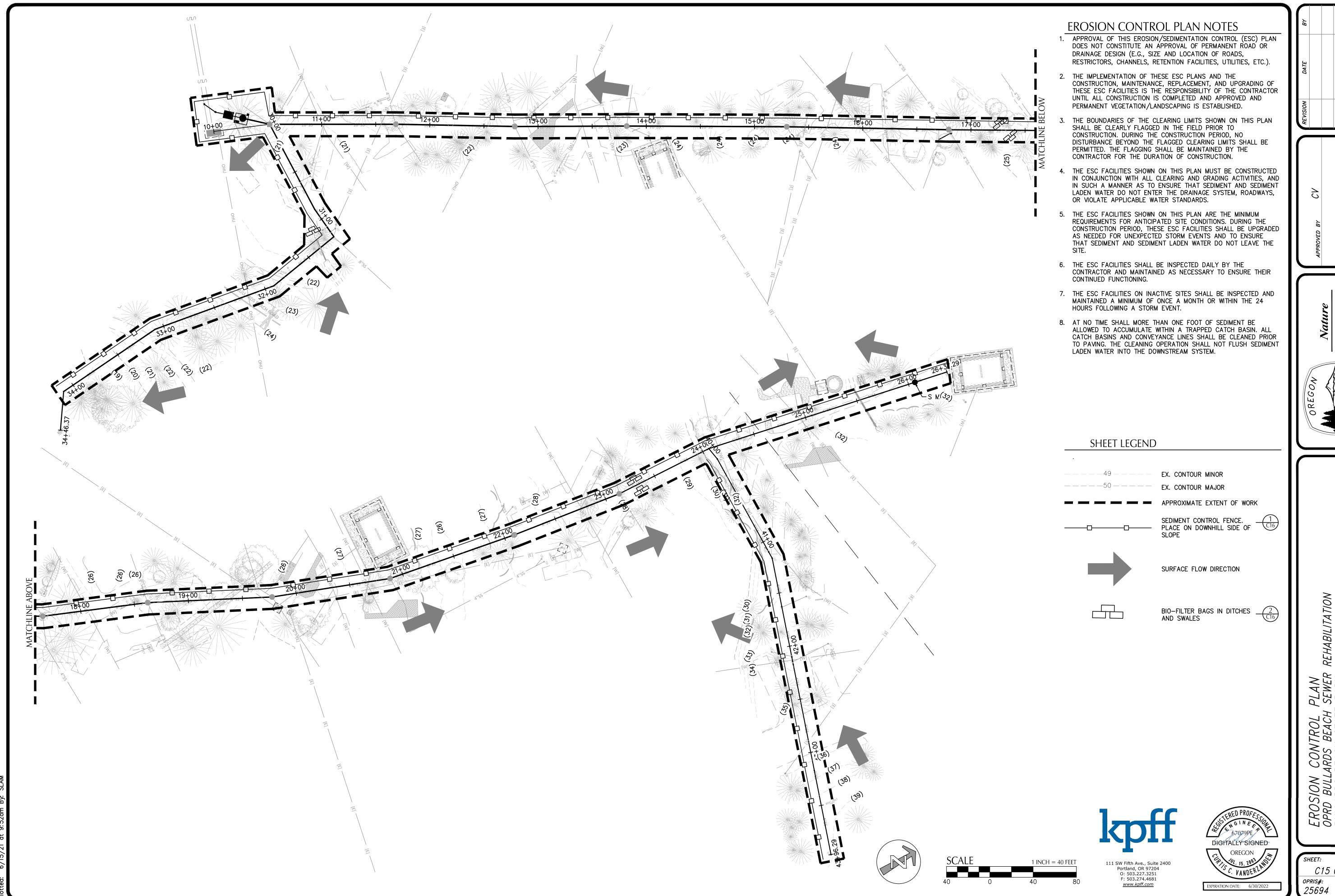
SEWER PARK

BEACH STATE DETAILS OPRD BULLARDS E BULLARDS BEACH

REHABILITATION

SHEET: C14 OF 26

CONTRACT #: 8334



C15 OF 26 CONTRACT #: 1. EMBED BALES 4" TO 6".

2. DRIVE STAKES MINIMUM 12" INTO GROUND SURFACE.

BIO-FILTER BAG SEDIMENT BARRIER

IN DITCHES OR SWALES SCALE: NTS

- ANGLE BOTH ENDS OF SEDIMENT FENCE TO ASSURE SOIL IS TRAPPED INTERLOCKED 2"X2" POSTS -AND ATTACH (SEE TURNED ENDS CONNECTION) <u>Plan v</u>iew FILTER FABRIC FILTER FABRIC — STITCHED TOGETHER TO 2"x2" WOOD POST OR STEEL FENCE POST FORM POST POCKET FLOW 36" MIN. EXPOSURE EXISTING GROUND FILTER -FABRIC **DETAIL FABRIC** POST POCKET —6' МАХ. — FRONT VIEW FILTER — FABRIC BACKFILL TRENCH MIN. TURNED ENDS GEOTEXTILE END CONNECTIONS

NOTES:

1. THE FILTER FABRIC SHALL BE (36" MIN. WIDTH) PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6-INCH OVERLAP, AND BOTH ENDS SECURELY FASTENED TO THE POST, OR OVERLAP 2"x2" POSTS AND ATTACH AS SHOWN ON DETAIL SHEET.

SIDE VIEW

- 2. THE FILTER FABRIC FENCE SHALL BE INSTALLED TO FOLLOW THE CONTOURS WHERE FEASIBLE. THE FENCE POSTS SHALL BE SPACED A MAXIMUM OF 6-FEET APART AND DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 24-INCHES.
- 3. THE FILTER FABRIC SHALL HAVE A MINIMUM VERTICAL BURIAL OF 6-INCHES. ALL EXCAVATED MATERIAL FROM FILTER FABRIC FENCE INSTALLATION, SHALL BE BACKFILLED AND COMPACTED, ALONG THE ENTIRE DISTURBED AREA.
- 4. STANDARD OR HEAVY DUTY FILTER FABRIC SHALL HAVE MANUFACTURED STITCHED LOOPS FOR 2"x2" POST INSTALLATION. STITCHED LOOPS WITH STAKES SHALL BE INSTALLED ON THE DOWN-HILL SIDE OF THE SLOPED AREA.
- 5. FILTER FABRIC FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UP-SLOPE AREA HAS BEEN PERMANENTLY PROTECTED AND STABILIZED.
- 6. FILTER FABRIC FENCES SHALL BE INSPECTED BY CONTRACTOR IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.





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EROSION CONTROL OPRD BULLARDS BEACH BULLARDS BEACH STATE

SHEET:

LS REHABILITATION

C16 OF 26 CONTRACT #: OPRIS#: 25694 8334

THESE GENERAL STRUCTURAL NOTES SUPPLEMENT THE PROJECT SPECIFICATIONS. REFER TO THE PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. NOTES AND DETAILS ON THE STRUCTURAL DRAWINGS SHALL TAKE PRECEDENCE OVER THE GENERAL STRUCTURAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE GIVEN, CONSTRUCTION SHALL BE AS SHOWN FOR SIMILAR WORK.

**CODE REQUIREMENTS:** 

CONFORM TO THE 2019 OREGON STRUCTURAL SPECIALTY CODE (OSSC), BASED ON THE 2018 INTERNATIONAL BUILDING CODE (IBC).

TEMPORARY CONDITIONS:

THE STRUCTURE IS DESIGNED TO FUNCTION AS A UNIT UPON COMPLETION. THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING ALL TEMPORARY BRACING AND/OR SUPPORT THAT MAY BE REQUIRED AS THE RESULT OF THE CONTRACTOR'S CONSTRUCTION METHODS AND/OR SEQUENCES.

CONTRACTOR'S CONSTRUCTION AND/OR ERECTION SEQUENCES SHALL RECOGNIZE AND CONSIDER THE EFFECTS OF THERMAL MOVEMENTS OF STRUCTURAL ELEMENTS DURING THE CONSTRUCTION PERIOD.

# DESIGN CRITERIA

DESIGN WAS BASED ON THE STRENGTH AND DEFLECTION CRITERIA OF THE OSSC. IN ADDITION TO THE DEAD LOADS, THE FOLLOWING LOADS AND ALLOWABLES WERE USED FOR DESIGN, WITH LIVE LOADS (L.L.) REDUCED PER OSSC:

	GRAVITY SYSTEM CRITERIA		
OCCUPANCY OR USE	UNIFORM LOAD	CONCENTRATED LOAD	
WETWELL APRON AND TOP SLAB	40 PSF L.L.	2,000 LBS.	
	GEOTECHNICAL CRITERIA		
DESIGN BASED ON:	OSSC	TABLE 1806.2	
ALLOWABLE SOIL PRESSURE:		,500 PSF	
	WIND CRITERIA		
RISK CATEGORY			
MAIN WIND FORCE RESISTING SYSTEM	V = 135 MPH BASIC DESIGN WIND SPEED (3-SECOND GUST)		
EXPOSURE CATEGORY	c		
	SEISMIC CRITERIA		
RISK CATEGORY		11	
SEISMIC DESIGN CATEGORY	D		
SITE CLASS		D	
IMPORTANCE FACTOR	IE = 1.0		
MCE SPECTRAL ACCELERATION	Ss = 2.03 $S1 = 0.957$		
SITE COEFFICIENT	Fa = 1.2	Fv = 1.7	
DESIGN SPECTRAL ACCELERATION	SDS = 1.63	SD1 = 1.08	

# STRUCTURAL OBSERVATIONS

THE STRUCTURAL ENGINEER OF RECORD (SEOR) WILL PERFORM STRUCTURAL OBSERVATIONS BASED ON THE REQUIREMENTS OF THE OSSC AT THE STAGES OF CONSTRUCTION LISTED BELOW. CONTRACTOR SHALL PROVIDE SUFFICIENT ADVANCED NOTICE AND ACCESS FOR THE SEOR TO PERFORM THESE OBSERVATIONS.

ITEM	COMMENTS
PRIOR TO FIRST CONCRETE POUR	AFTER REBAR PLACEMENT
AS REQUIRED TO ADDRESS STRUCTURAL ISSUES	

A FIELD REPORT WILL BE SUBMITTED TO THE BUILDING DEPARTMENT FOLLOWING EACH SITE VISIT.

STRUCTURAL OBSERVATION IS FOR THE GENERAL CONFORMANCE OF THE STRUCTURAL DRAWINGS AND DOES NOT ALLEVIATE ANY SPECIAL INSPECTION REQUIREMENTS.

# SPECIAL INSPECTIONS AND TESTING

SPECIAL INSPECTION WILL BE PROVIDED BY THE OWNER BASED ON THE REQUIREMENTS OF THE OSSC AS SUMMARIZED IN THE SPECIAL INSPECTION AND TESTING PROGRAM ON SHEETS S4 AND S5. CONTRACTOR SHALL PROVIDE SUFFICIENT NOTICE AND ACCESS FOR THE SPECIAL INSPECTOR TO PERFORM THESE INSPECTIONS.

# SUBMITTALS

SUBMIT SHOP DRAWINGS AND OTHER SUBMITTALS TO THE ENGINEER PRIOR TO FABRICATION AND CONSTRUCTION OF STRUCTURAL ITEMS. IF THE SUBMITTALS DIFFER FROM OR ADD TO THE STRUCTURAL CONTRACT DOCUMENTS, THEY SHALL BEAR THE SEAL AND SIGNATURE OF A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF OREGON. ANY CHANGES TO THE STRUCTURAL DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER AND ARE SUBJECT TO REVIEW AND ACCEPTANCE BY THE SEOR.

FIELD ENGINEERED DETAILS DEVELOPED BY THE CONTRACTOR THAT DIFFER FROM OR ADD TO THE STRUCTURAL DRAWINGS SHALL BEAR THE SEAL AND SIGNATURE OF A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF OREGON AND SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO CONSTRUCTION.

THE USE OF REPRODUCTIONS OR PHOTOCOPIES OF THE CONTRACT DRAWINGS SHALL NOT BE PERMITTED. WHEN CAD OR REVIT FILES ARE PROVIDED TO THE CONTRACTOR OR SUBCONTRACTORS, IT IS THE RESPONSIBILITY OF THE CONTRACTOR/SUBCONTRACTOR TO REMOVE ALL INFORMATION NOT DIRECTLY RELEVANT TO THE SCOPE OF THE SUBMITTAL AS WELL AS ALL REFERENCES TO OUTSIDE SOURCE FILES.

DELEGATED DESIGN SUBMITTALS SHALL INCLUDE DESIGN DRAWINGS AND CALCULATIONS FOR ITEMS THAT ARE DESIGNED BY OTHERS. DELEGATED DESIGN SUBMITTALS SHALL BEAR THE SEAL AND SIGNATURE OF A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF OREGON ON EVERY DRAWING SHEET AND ON THE CALCULATION COVER SHEET. AND SHALL BE SUBMITTED TO THE ENGINEER AND STRUCTURAL ENGINEER PRIOR TO FABRICATION. CALCULATIONS SHALL BE INCLUDED FOR ALL CONNECTIONS TO THE STRUCTURE, CONSIDERING LOCALIZED EFFECTS ON STRUCTURAL ELEMENTS. DESIGN SHALL BE BASED ON THE REQUIREMENTS OF THE OSSC AND AS NOTED UNDER "DESIGN CRITERIA".

SUBMITTALS AND DELEGATED DESIGN SUBMITTALS SHALL INCLUDE THE FOLLOWING:

ITEM	SUBMITTAL	DELEGATED DESIGN SUBMITTAL	COMMENTS
CONCRETE MIX DESIGNS	X		
CONCRETE REINFORCEMENT	Х		
CONCRETE ANCHORAGES	X		
EMBEDDED STEEL ITEMS	Х		
STRUCTURAL STEEL	X		INCLUDES STAINLESS STEEL
STEEL WELDING PROCEDURES	Х		INCLUDES STAINLESS STEEL
STEEL FASTENERS	Х		INCLUDES STAINLESS STEEL
PRECAST CONCRETE LIFT STATION		X	

### TABLE NOTES:

- THE CONTRACTOR SHALL COORDINATE SEISMIC RESTRAINTS OF MECHANICAL, PLUMBING, AND ELECTRICAL EQUIPMENT, MACHINERY, AND ASSOCIATED PIPING WITH THE STRUCTURE. CONNECTIONS TO STRUCTURE SHALL CONFORM TO ASCE 7-16 CHAPTER 13, BE DESIGNED BY AN ENGINEER REGISTERED IN THE STATE OF OREGON. AND SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO FABRICATION.
- CONTRACTOR SHALL ENGAGE A PROFESSIONAL ENGINEER TO PREPARE AN ASSESSMENT OF ANY EXCAVATIONS THAT MAY REDUCE THE VERTICAL OR LATERAL SUPPORT OF AN EXISTING FOUNDATION AS REQUIRED BY OSSC SECTION 1803.5.7. THE ASSESSMENT SHALL BE SUBMITTED TO THE BUILDING DEPARTMENT AND SHALL INCLUDE DETAILS AND SEQUENCING FOR CONSTRUCTION OF ANY UNDERPINNING OR BRACING THAT IS REQUIRED.

# CONCRETE MIX DESIGNS

CONCRETE WORK SHALL CONFORM TO CHAPTER 19 OF THE OSSC. CONCRETE STRENGTHS SHALL BE VERIFIED BY STANDARD CYLINDER TESTS PER ASTM C39. CONCRETE MIX TO BE DESIGNED AND PROPORTIONED BY THE CONTRACTOR IN ACCORDANCE WITH ACI 318-14 CHAPTER 26, ACI 301-16 CHAPTER 4 AND THE FOLLOWING INFORMATION:

MIX ID	USE	f'c (PSI)	TEST AGE (DAYS)	MAX. W/CM RATIO (NOTE 1 & 2)	MAX. AGG. SIZE		EXPOSUR	E CLASS	
A	ALL CONCRETE, U.N.O.	4,000	28	0.45	3/4"	F2	<i>S0</i>	W1	C1
В	BASE SLAB	4,000	28	0.45	3/4"	F0	50	W1	C2





. NOTES EWER REHABILITATION PARK

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- ESTABLISH WATER-CEMENTITIOUS MATERIAL RATIO PER ACI 301-16 CHAPTER 4.
- REF. ACI 318-14 TABLE 19.3.2.1 FOR ADDITIONAL MIX REQUIREMENTS SPECIFIC TO EXPOSURE CLASS.
- EXPOSURE CATEGORY "F" APPLIES TO LEVEL OF FREEZE THAW EXPOSURE.
- EXPOSURE CATEGORY "S" APPLIES TO LEVEL OF SULFATE EXPOSURE.
- EXPOSURE CATEGORY "W" APPLIES TO REQUIRED LEVEL OF PERMEABILITY.
- EXPOSURE CATEGORY "C" APPLIES TO CORROSIVE LOCATIONS INCLUDING SURROUNDING ENVIRONMENT (SUCH AS MARINE ENVIRONMENT) AND CORROSIVE SOILS.

PORTLAND CEMENT CONTENT MAY BE REPLACED WITH FLY ASH CONFORMING TO ASTM C618 (INCLUDING TABLE 2A) TYPE F OR TYPE C, SLAG CEMENT CONFORMING TO ASTM C989, AND SILICA FUME CONFORMING TO ASTM C1240 PROVIDED THAT THE MIX STRENGTH IS SUBSTANTIATED BY TEST DATA.

FOR MIX DESIGNS WITH f'c = 5.000 PSI OR LESS. SLAG CEMENT MAY BE SUBSTITUTED FOR FLY ASH AT A 1:1 RATIO WITHOUT TEST DATA. WHEN SLAG CEMENT IS SUBSTITUTED IN HIGHER STRENGTH MIXES OR AT A DIFFERENT RATIO. THE MIX STRENGTH MUST BE SUBSTANTIATED BY TEST DATA.

ALL CONCRETE SUBJECT TO EXPOSURE CLASSES F1, F2 OR F3 SHALL BE AIR ENTRAINED. AIR-ENTRAINING AGENTS SHALL CONFORM TO ASTM C260. THE AMOUNT OF ENTRAINED AIR SHALL BE ACCORDING TO ACI 318-14 TABLE 19.3.3.1 AS INDICATED BELOW WITH A FIELD TOLERANCE OF ± 1.5 PERCENT BY VOLUME. THE AMOUNT OF ENTRAINED AIR SHALL BE MEASURED IN THE FIELD AT THE DISCHARGE FROM THE TRUCK.

	CONCRETE MIX AIR CONTENT			
MAX. AGGREGATE SIZE  CONCRETE SUBJECT TO FREEZE/THAW  (EXPOSURE CLASS F1)  CONCRETE SUBJECT TO CONT. MOISTURE AND/OR  DEICING CHEMICALS  (EXPOSURE CLASS F2 AND F3)				
3/8"	6.0%	7.5%		
1/2"	5.5%	7.0%		
3/4"	5.0%	6.0%		

A WATER-REDUCING ADMIXTURE CONFORMING TO ASTM C494 USED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS SHALL BE INCORPORATED IN CONCRETE MIX DESIGNS. A HIGH-RANGE WATER-REDUCING (HRWR) ADMIXTURE CONFORMING TO ASTM C494 TYPE F OR G MAY BE USED IN CONCRETE MIXES PROVIDING THAT THE SLUMP DOES NOT EXCEED 10".

THE CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGNS ALONG WITH TEST DATA COMPLIANT WITH ACI 301-16 AND ACI 318-14 A MINIMUM OF TWO WEEKS PRIOR TO PLACING CONCRETE. NO WATER MAY BE ADDED TO CONCRETE IN THE FIELD UNLESS SPECIFICALLY APPROVED IN WRITING BY THE CONCRETE SUPPLIER IN CONJUNCTION WITH THE CONCRETE MIX DESIGN.

# FORMWORK, SHORING AND RE-SHORING

FORMWORK DESIGN IS THE CONTRACTOR'S RESPONSIBILITY AND SHALL CONFORM TO ACI 347R-14 AND ACI 347.2-17.

WHERE NEW CONCRETE IS PLACED AGAINST EXISTING CONCRETE, THE EXISTING CONCRETE SURFACE SHALL BE CLEANED AND ROUGHENED TO A MINIMUM 1/4" AMPLITUDE PER ACI 318-14 SECTION 22.9.4.2.

PROVIDE 3/4" CHAMFERS ON ALL EXPOSED CONCRETE EDGES, UNLESS NOTED OTHERWISE.

# CONCRETE REINFORCING STEEL

CONCRETE REINFORCEMENT SHALL BE AS LISTED BELOW.

USE	TYPE	MATERIAL
FOUNDATIONS	ALL	ASTM A706 GRADE 60 OR ASTM A615 GRADE 60

ALL REINFORCING STEEL SHALL BE SECURELY TIED IN PLACE WITH #16 ANNEALED IRON WIRE. BARS IN SLABS SHALL BE SUPPORTED ON WELL-CURED CONCRETE BLOCKS OR APPROVED METAL OR PLASTIC CHAIRS, AS SPECIFIED BY THE CRSI MANUAL OF STANDARD PRACTICE, MSP-1. REINFORCING STEEL SHALL BE DETAILED IN ACCORDANCE WITH ACI 315, "ACI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES".

REINFORCING BARS SHALL NOT BE BENT OR STRAIGHTENED IN THE FIELD WITHOUT APPROVAL OF THE SEOR. PREHEATING METHODS SHALL BE SUBMITTED TO THE SEOR FOR APPROVAL PRIOR TO BENDING OF BARS #6 OR LARGER.

LAP ALL REINFORCING BARS PER THE TYPICAL LAP SPLICE LENGTH SCHEDULE, EXCEPT AS NOTED ON DRAWINGS. USE LAP LENGTH FOR SMALLER BAR WHEN SPLICING DIFFERENT BAR SIZES. BARS SPLICED WITH NONCONTACT LAPS SHALL BE SPACED NO FARTHER THAN 1/5TH THE LAP LENGTH OR 6 INCHES.

TYP. SLAB LAP SPLICE LENGTH SCHEDULE (IN.) — 60 KSI			
DAD	SLAB BOTTOM BARS	SLAB TOP BARS	
BAR SIZE	4,000 PSI	4,000 PSI	
#3	16	20	
#4	26	34	
#5	32	42	
#6	38	50	

### TABLE NOTES:

- ASTM A615 OR ASTM A706, GRADE 60 DEFORMED REINFORCING BARS
- MINIMUM CLEAR COVER AND BAR SPACING TO BE PROVIDED.
- NORMAL WEIGHT CONCRETE.
- 5. UNCOATED BARS.
- SLAB TOP BARS ARE BARS CAST ABOVE MORE THAN 12" OF FRESH CONCRETE. ALL OTHER SLAB BARS MAY BE CONSIDERED BOTTOM BARS.

REINFORCING STEEL SHALL HAVE PROTECTION AS FOLLOWS:

CONCRETE COVER	
USE	CLEAR COVER
EXPOSED TO EARTH OR WEATHER	2"
CONCRETE CAST AGAINST AND EXPOSED TO EARTH	3"

# CONCRETE REINFORCING DETAILS

AT SLAB OPENINGS PROVIDE A MINIMUM OF TWO #5 BARS OVER, UNDER AND AT THE SIDES OF THE OPENINGS. EXTEND THESE BARS LAP DISTANCE OR A MINIMUM OF 2'-0" PAST THE OPENING. PROVIDE ONE #5x4'-0" EACH FACE FOR DOUBLE-LAYER REINFORCING PLACED DIAGONALLY AT EACH CORNER OF ALL OPENINGS. REFER TO TYPICAL DETAILS FOR DISPOSITION OF CORNER BARS. PROVIDE (2) #4x4'-0" PLACED DIAGONALLY AT EACH RE-ENTRANT CORNER IN SLABS. SHOP DRAWINGS SHALL INCLUDE ALL SPECIAL REINFORCEMENT LISTED ABOVE.

SLEEVES, OPENINGS, CONDUIT, AND OTHER EMBEDDED ITEMS NOT SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE APPROVED BY THE STRUCTURAL ENGINEER BEFORE PLACING CONCRETE. CONDUITS EMBEDDED IN SLABS SHALL NOT BE LARGER IN OUTSIDE DIMENSION THAN ONE THIRD OF THE THICKNESS OF THE SLAB AND SHALL NOT BE SPACED CLOSER THAN THREE DIAMETERS ON CENTER.

VERIFY ALL BLOCK OUTS WITH CIVIL AND ELECTRICAL REQUIREMENTS.

# POST-INSTALLED CONCRETE ANCHORS

POST-INSTALLED CONCRETE ANCHORS SHALL BE THE FOLLOWING PRODUCTS, U.N.O.:

TYPE	APPROVED ANCHORS	
EXPANSION	SIMPSON STRONG-BOLT 2 (ICC ESR-3037)	
CONCRETE SCREW	SIMPSON TITEN HD (ICC ESR-2713)	

ANCHORS SHALL BE INSTALLED IN STRICT CONFORMANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND PRODUCT EVALUATION REPORTS. EMBEDMENTS SPECIFIED ON DRAWINGS ARE "EFFECTIVE" EMBEDMENTS. REFERENCE MANUFACTURER LITERATURE FOR CORRESPONDING ACTUAL EMBEDMENT DEPTHS. DO NOT CUT REINFORCING IN NEW OR EXISTING CONCRETE DURING INSTALLATION.

REQUESTS FOR ANCHOR SUBSTITUTIONS SHALL BE SUBMITTED TO THE SEOR IN WRITING ALONG WITH EVIDENCE OF EQUAL OR GREATER CAPACITY TO THE SPECIFIED CONNECTION.

ANCHORS EXPOSED TO EARTH OR WEATHER SHALL BE PROTECTED FROM CORROSION BY HOT-DIP GALVANIZING OR USE OF STAINLESS STEEL. PERMANENTLY EXPOSED EMBEDDED PLATES AND ANGLES SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION, U.N.O.





STRUCTURAL NOTES CONTINUED RDS BEACH SEWER REHABILITATION EACH STATE PARK GENERAL OPRD BUL BULLARDS

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# STRUCTURAL STAINLESS STEEL

STRUCTURAL STAINLESS STEEL SHALL BE OF THE MATERIAL AND TYPE LISTED BELOW, U.N.O.:

STRUCTURAL STAINLESS STEEL		
SHAPE MATERIAL GRADE		
PLATES AND ANGLES	AISI 316 (UNS S31600 S31603) GRADE 30	

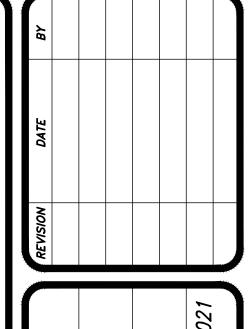
DESIGN, DESIGN, FABRICATION, AND ERECTION SHALL BE IN ACCORDANCE WITH THE "AISC SPECIFICATION FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS" WITH "COMMENTARY" AND THE "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES", WITH THE FOLLOWING CLARIFICATIONS AND ADDITIONS:

- 1. CLARIFY SECTIONS 7.5.1 AND 7.5.3 AS FOLLOWS: EMBEDMENT DRAWINGS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER OF RECORD FOR INFORMATION ONLY. THE SEOR IS NOT RESPONSIBLE FOR THE APPROVAL OF EMBEDMENT DRAWINGS.
- 2. ADD THE FOLLOWING PARAGRAPH TO SECTION 7.10.3: "THE ERECTOR SHALL HAVE THE SOLE RESPONSIBILITY FOR DETERMINING THE MEANS AND METHODS USED TO PROPERLY AND ADEQUATELY BRACE THE FRAMING DURING ERECTION."

BOLTS SHALL CONFORM TO THE ASTM AND RCSC SPECIFICATION FOR JOINTS. BOLTS SHALL BE SNUG-TIGHT UNLESS NOTED OTHERWISE. BOLTS/NUTS/WASHERS FOR AISI S304 AND AISI S316 ELEMENTS: ASTM F593 FOR STAINLESS STEEL STRUCTURAL BOLTS; ASTM F594 HEAVY HEX STAINLESS STEEL NUTS; AISI 304/316 STAINLESS STEEL PLAIN WASHERS. PROVIDE ASTM A1082/A1082M BOLTS FOR AISI 2205 DUPLEX ELEMENTS, NUTS/WASHERS SHALL HAVE EQUIVALENT CORROSION RESISTANCE.

WELDING SHALL CONFORM TO AWS D1.6/D1.6M FOR STAINLESS STEEL AND AWS D10.18/D10.18M REQUIREMENTS FOR DUPLEX STAINLESS STEEL. FILLER METAL FOR DUPLEX STEEL SHALL HAVE EQUIVALENT CORROSION RESISTANCE.

PROVIDE WEEP HOLES AT EXTERIOR CLOSED SECTIONS WHERE MOISTURE MAY ACCUMULATE.





GENERAL STRUCTURAL NOTES CONTINUED OPRD BULLARDS BEACH SEWER REHABILITATION BULLARDS BEACH STATE PARK

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contract #: opris#: 25694

	TADIE 1	DECLURED CECTECUNICA	I CDECIAL INCDECTION	IC .	
	TABLE I -	REQUIRED GEOTECHNICA	L SPECIAL INSPECTION	<u> </u>	
SYSTEM OR MATERIAL	INSPECTION				
	OSSC CODE REFERENCE	CODE OR STANDARDS REFERENCE	FREQUENCY (NOTE 6)		REMARKS
			CONTINUOUS	PERIODIC	
		SOILS			
VERIFY MATERIALS BELOW FOOTINGS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY	1705.6	GEOTECHNICAL REPORT OR MINIMUM PER IBC APPENDIX J107.5, WHICHEVER IS GREATER		Х	
VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL				Х	
PERFORM CLASSIFICATION AND TESTING OF CONTROLLED FILL MATERIALS				Х	BY THE GEOTECHNICAL ENGINEER OR QUALIFIED SPECIAL INSPECTOR
VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF CONTROLLED FILL			Х		
PRIOR TO PLACEMENT OF CONTROLLED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY				Х	

	TABLE 2 -	REQUIRED STRUCTURAL	SPECIAL INSPECTION	<i>IS</i>	
		INSPEC	TION		
SYSTEM OR MATERIAL	OSSC CODE REFERENCE	CODE OR STANDARD REFERENCE	FREQUENCY (NOTE 6)		REMARKS
			CONTINUOUS	PERIODIC	
		FABRICATORS			
FABRICATORS	1704.2.5			X	SPECIAL INSPECTION IS REQUIRED FOR STRUCTURAL LOAD—BEARING MEMBERS AND ASSEMBLIES FABRICATED ON THE PREMISES OF A FABRICATOR'S SHOP PER TABLE 2 AND AS REQUIRED ELSEWHERE IN THE SPECIAL INSPECTION PROGRAM. THE SPECIAL INSPECTOR SHALL VERIFY THAT THE FABRICATOR MAINTAINS DETAILED FABRICATION AND QUALITY CONTROL PROCEDURES AND SHALL REVIEW FOR COMPLETENESS AND ADEQUACY RELATIVE TO THE CODE REQUIREMENT. REFERENCE SECTION 1704.2.5.2 FOR APPROVED FABRICATOR EXCEPTION.
		DEFERRED SUBMITI	TALS	•	
DEFERRED SUBMITTALS			Х	Х	SPECIAL INSPECTION REQUIREMENTS FOR DEFERRED SUBMITTAL ITEMS, TO BE SPECIFIED BY THE SYSTEMS ENGINEER AND INCLUDED WITH DEFERRED SUBMITTAL DOCUMENTS.
		CONCRETE		•	
GENERAL	1705.3 1901.4	ACI 318 1.3			SPECIAL INSPECTIONS OF CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF SECTION 1705.3 OF THE OSSC AND SECTION 1.3 OF ACI 318.
REINFORCING STEEL PLACEMENT	1910.4 1901.3.2	ACI 318 3.5 ACI 318 7.1 TO 7.7		Х	REINFORCING TO COMPLY WITH ALL CODE PROTECTION, SPACING AND TOLERANCE LIMITS.
PLACEMENT OF CAST-IN-PLACE BOLTS	1908.5 1909.1		Х		ALL BOLTS VISUALLY INSPECTED
VERIFYING USE OF REQUIRED MIX DESIGN(S)	1904.2 1910.2 1910.3	ACI 318, CH. 4 ACI 318 5.2-5.4		X	
CONCRETE PLACEMENT		ACI 318 5.9-5.10	Х		
CONCRETE CURING	1910.9	ACI 318 5.11-5.13		Х	
VERIFICATION OF FORMWORK		ACI 318 6.1.1		Х	SPECIAL INSPECTIONS APPLY TO SHAPE, LOCATION AND DIMENSIONS OF THE CONCRETE MEMBER BEING FORMED
EMBEDDED ITEMS IN CONCRETE				Х	ALL NON-STRUCTURAL EMBEDDED ITEMS, SUCH AS CONDUITS, PIPES AND SLEEVES, SHALL BE REVIEWED FOR CONFORMANCE WITH STRUCTURAL DOCUMENTS FOR SIZE, SPACING, LOCATION, EDGE DISTANCE AND TRIM REINFORCING.
		STAINLESS STEE	TL	•	
FABRICATION OF STAINLESS STEEL ELEMENTS	1705.1.1			Х	REFER TO INSPECTION OF FABRICATOR REQUIREMENTS
MATERIAL VERIFICATION OF STAINLESS STEEL	1705.1.1			Х	CERTIFIED MILL TEST REPORTS
MATERIAL VERIFICATION OF BOLTS	1705.1.1			Х	MANUFACTURER'S CERTIFIED TEST REPORTS
MATERIAL VERIFICATION OF WELD FILLER METALS		AWS D1.6 SECTION 6		Х	MANUFACTURER'S CERTIFIED TEST REPORTS
VERIFYING USE OF PROPER WPS'S	]			Х	RETAIN A RECORD OF WELDING PROCEDURE SPECIFICATIONS
VERIFYING WELDER QUALIFICATIONS	1705 1 1			Х	RETAIN A RECORD OF QUALIFICATION CARDS
COMPLETE AND PARTIAL PENETRATION GROOVE WELDS	1705.1.1 		X		
MULTIPASS FILLET WELDS			X		ALL WELDS VISUALLY INSPECTED PER AWS D1.6 6.28.1
SINGLE PASS FILLET WELDS				Х	
		POST INSTALLED CONCRET	E ANCHORS		
POST INSTALLED ANCHORS INSTALLATION IN HARDENED CONCRETE	1908.5 1909.1	ACI 318: 1.3, 3.8.6	X(NOTE 6)	X (NOTE 6)	INSPECTION REQUIREMENTS PER ICC EVALUATION REPORT







contract #: opris#: 25694

# SPECIAL INSPECTIONS AND TESTING CONTINUED

# TESTING

	TABLE 3 -	- REQUIRED TESTING FOR	SPECIAL INSPECTION	VS	
SYSTEM OR MATERIAL		INSPECTI	ION		
	OSSC CODE REFERENCE	CODE OR STANDARD REFERENCE	FREQUENCY (NOTE 6)		REMARKS
			CONTINUOUS	PERIODIC	
		GEOTECHNICAL		•	
FILL IN-PLACE DENSITY OR PREPARED SUBGRADE DENSITY	1705.6	VARIES; GEOTECHNICAL REPORT OR MINIMUM PER IBC APPENDIX J107.5, WHICHEVER IS GREATER		Х	BY THE GEOTECHNICAL ENGINEER OR QUALIFIED SPECIAL INSPECTOR
MATERIAL VERIFICATION		VARIES; CLASSIFICATION AND TESTING OF CONTROLLED FILL MATERIALS		Х	BY THE GEOTECHNICAL ENGINEER OR QUALIFIED SPECIAL INSPECTOR
		CONCRETE			
CONCRETE STRENGTH	1705.3 ASTM C172 ASTM C 31 ACI318:5.6,5.8	ASTM C39	EACH 150 CY NOR LESS THAN EACH 5000 SF OF SLAB PLACED EACH SHIFT		FABRICATE SPECIMENS AT TIME FRESH CONCRETE IS PLACED
CONCRETE SLUMP		ASTM C143			
CONCRETE AIR CONTENT		ASTM C231			
CONCRETE TEMPERATURE	A010 1 0.0.0,0.0	ASTM C1064			
		STAINLESS STEEL			•
ULTRASONIC (UT) TESTING OF WELDS	1704.3.1	AWS D1.6 6.13 AWS D1.6.7			REQUIRED WHERE SPECIFICALLY NOTED ON DRAWINGS OR AS DIRECTED BY KPFF AT WELDS IDENTIFIED TO BE IN QUESTION BASED ON INSPECTIONS

### STATEMENT OF SPECIAL INSPECTION NOTES:

- SPECIAL INSPECTIONS SHALL CONFORM TO SECTION 1705 OF THE 2019 OSSC, CONTRACT DOCUMENTS AND APPROVED SUBMITTALS. REFER TO TABLES 1 AND 2 FOR SPECIAL INSPECTION AND TABLE 3 FOR TESTING REQUIREMENTS.
- SPECIAL INSPECTIONS AND ASSOCIATED TESTING SHALL BE PERFORMED BY AN APPROVED ACCREDITED INDEPENDENT AGENCY MEETING THE REQUIREMENTS OF ASTM E329 (MATERIALS). THE INSPECTION AND TESTING AGENCY SHALL FURNISH TO THE ENGINEER A COPY OF THEIR SCOPE OF ACCREDITATION. SPECIAL INSPECTORS SHALL BE APPROVED BY THE BUILDING OFFICIAL. WELDING INSPECTORS SHALL BE QUALIFIED PER AWS D1.6.
- THE SPECIAL INSPECTOR SHALL OBSERVE THE INDICATED WORK FOR COMPLIANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR FOR CORRECTION AND NOTED IN THE INSPECTION REPORTS.
- THE SPECIAL INSPECTOR AND GEOTECHNICAL ENGINEER SHALL FURNISH INSPECTION REPORTS FOR EACH INSPECTION TO THE BUILDING OFFICIAL, ENGINEER, STRUCTURAL ENGINEER, CONTRACTOR, AND OWNER. THE SPECIAL INSPECTION AGENCY SHALL SUBMIT A FINAL REPORT STATING THAT THE WORK REQUIRING SPECIAL INSPECTION WAS INSPECTED AND IS IN CONFORMANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS AND THAT ALL DISCREPANCIES NOTED IN THE INSPECTION REPORTS HAVE BEEN CORRECTED.
- *5*. INSPECTION TYPES

CONTINUOUS : THE FULL-TIME OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK IS BEING PERFORMED.

PERIODIC : THE PART-TIME OR INTERMITTENT OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK HAS BEEN OR IS BEING PERFORMED AND AT THE COMPLETION OF THE WORK.

- SPECIAL INSPECTION OF MECHANICAL POST INSTALLED ANCHORS SHALL BE IN STRICT CONFORMANCE WITH THE ICC REPORT AND MANUFACTURERS INSTALLATION REQUIREMENTS. ANCHOR INSTALLERS SHALL BE QUALIFIED AS REQUIRED BY JURISDICTION REQUIREMENTS.
  - INSPECTION REPORTS SHALL IDENTIFY NAMES OF INSTALLERS.
  - SPECIAL INSPECTOR SHALL PROVIDE DOCUMENTATION AT THE END OF ANCHOR INSTALLATIONS STATING THAT THE ANCHORS WERE INSPECTED PER APPROVED ANCHOR EVALUATION REPORT.

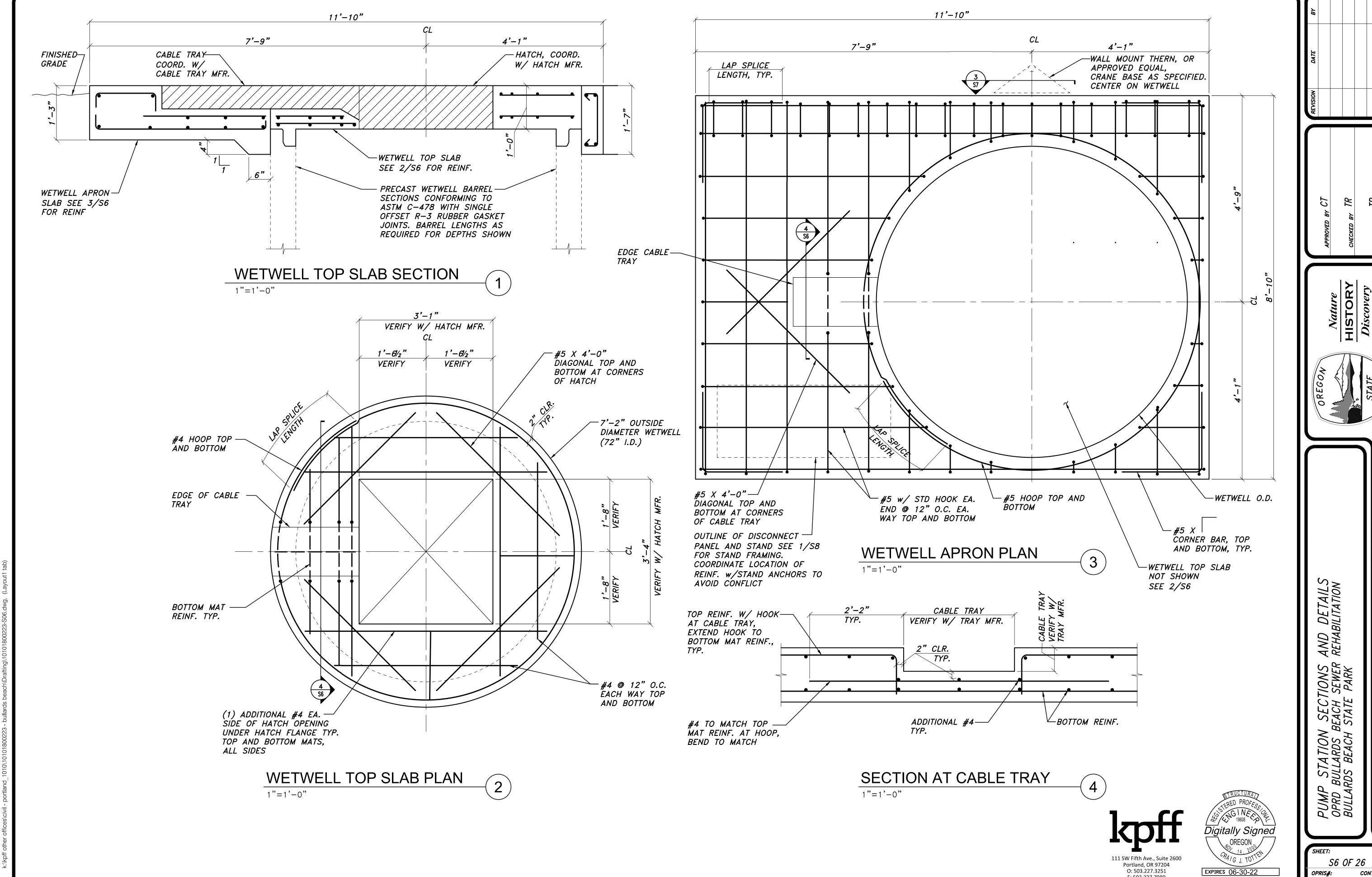






) TESTING CONTINUED REHABILITATION

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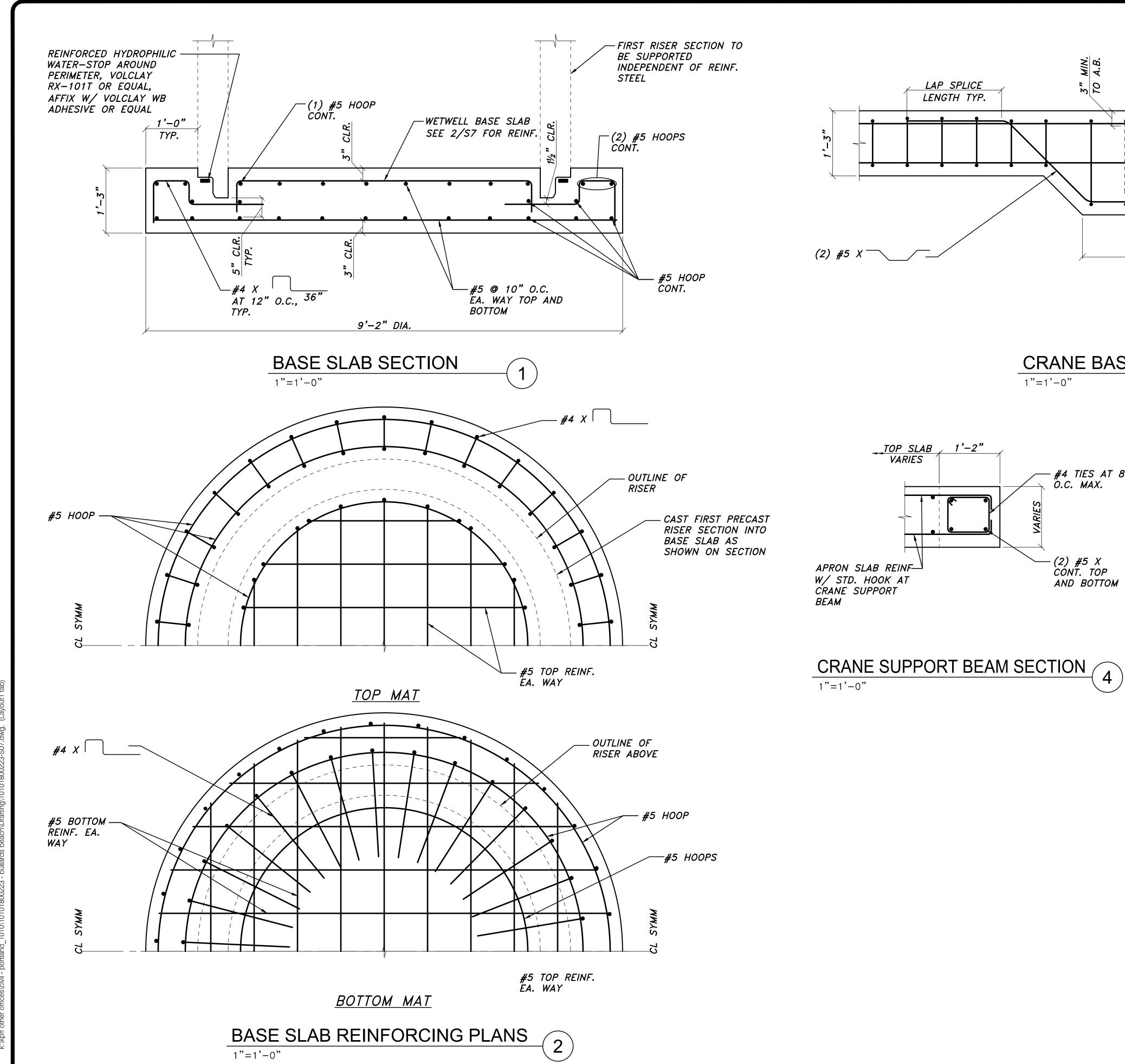


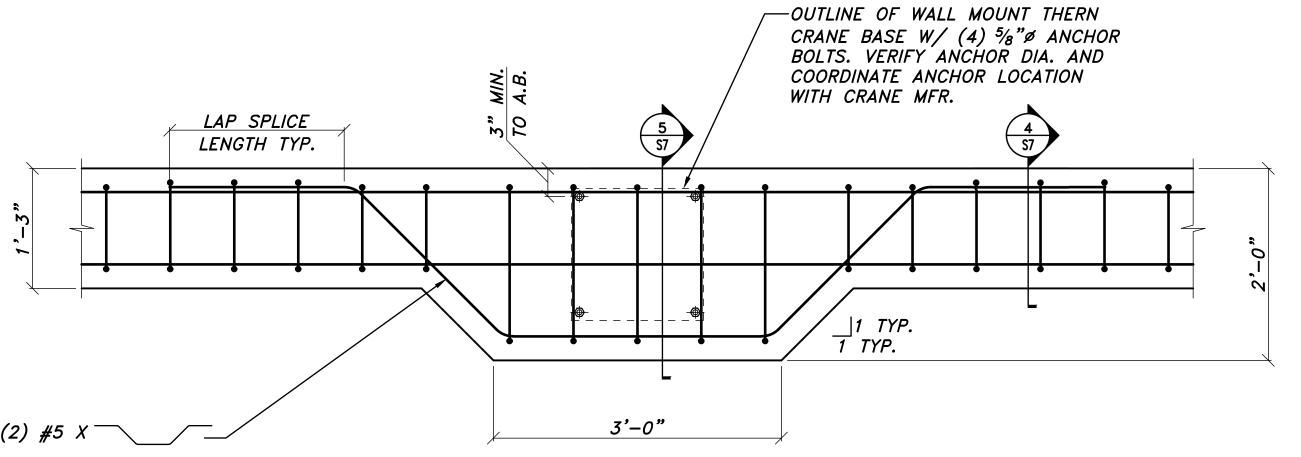


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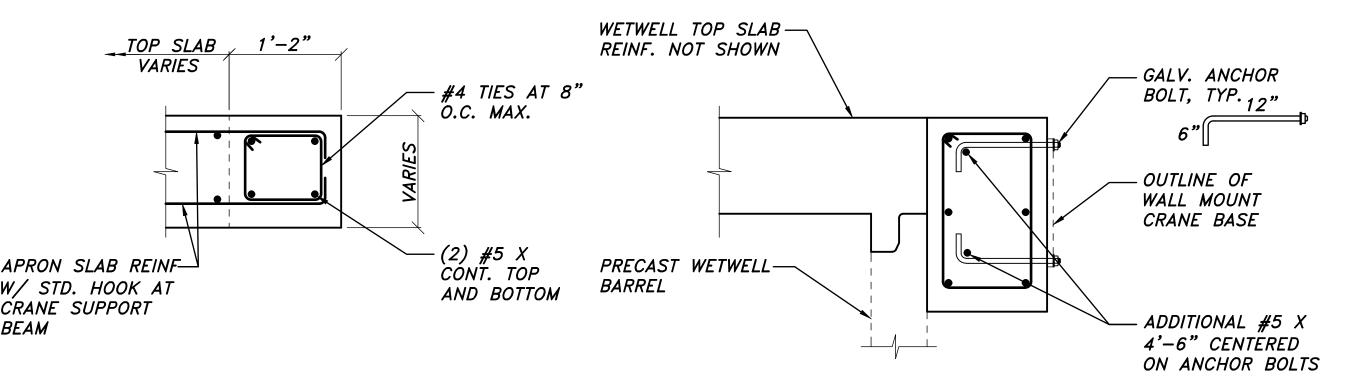
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# CRANE BASE CONNECTION 1"=1'-0"



CRANE SUPPORT BEAM AT CRANE BASE



AND DETAILS REHABILITATION

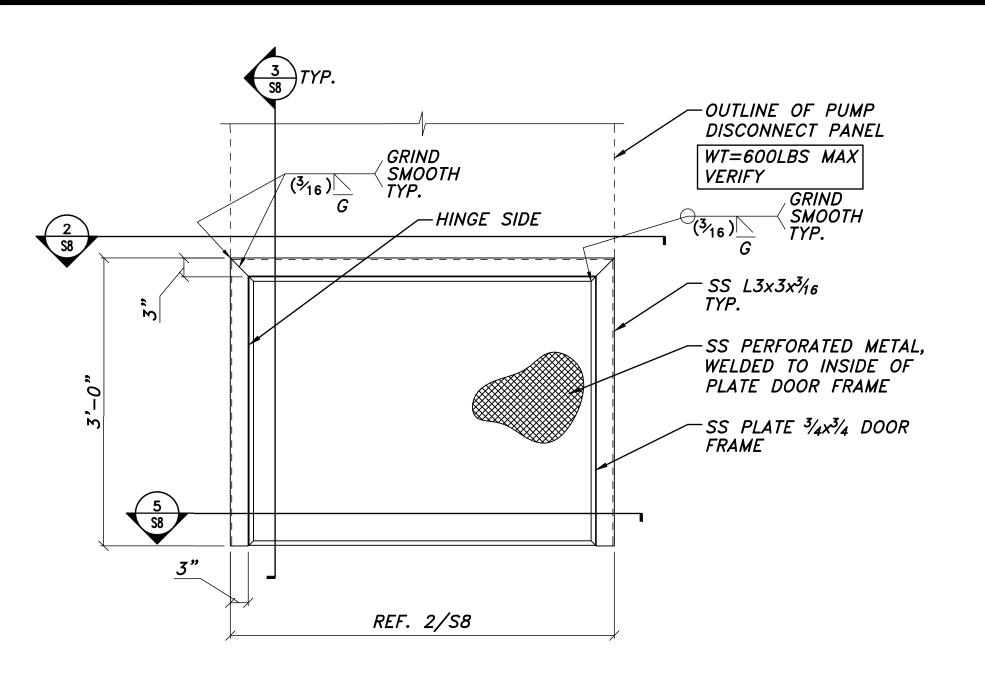
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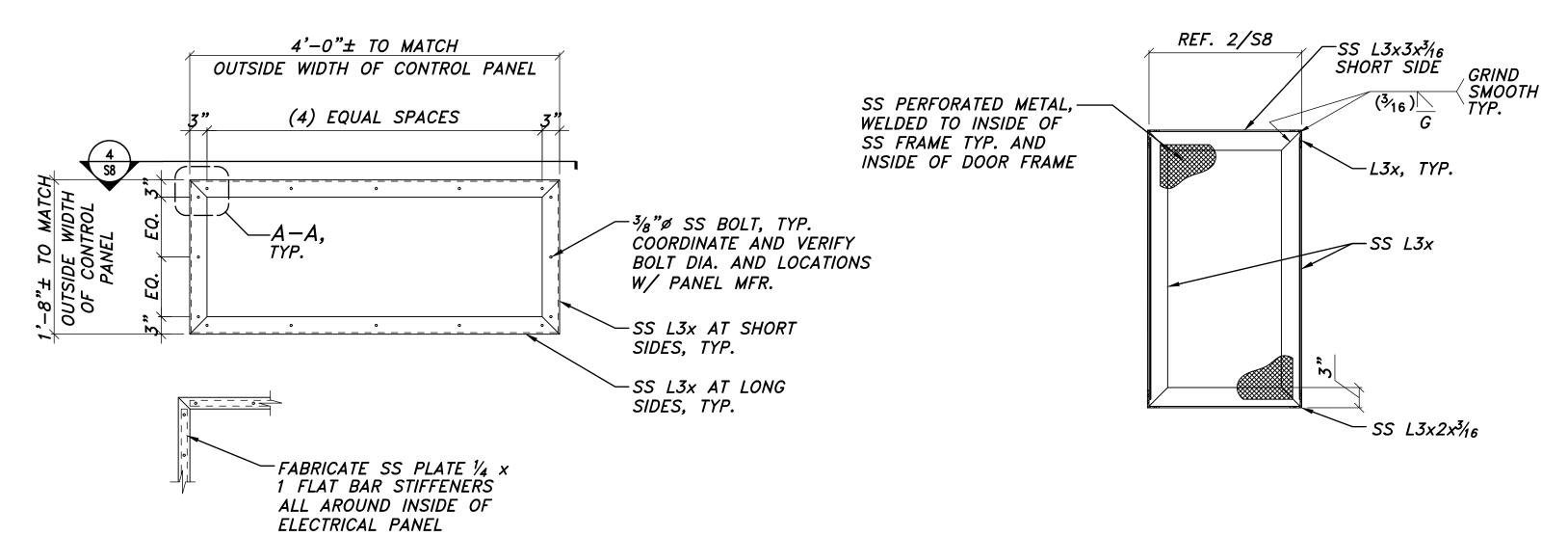
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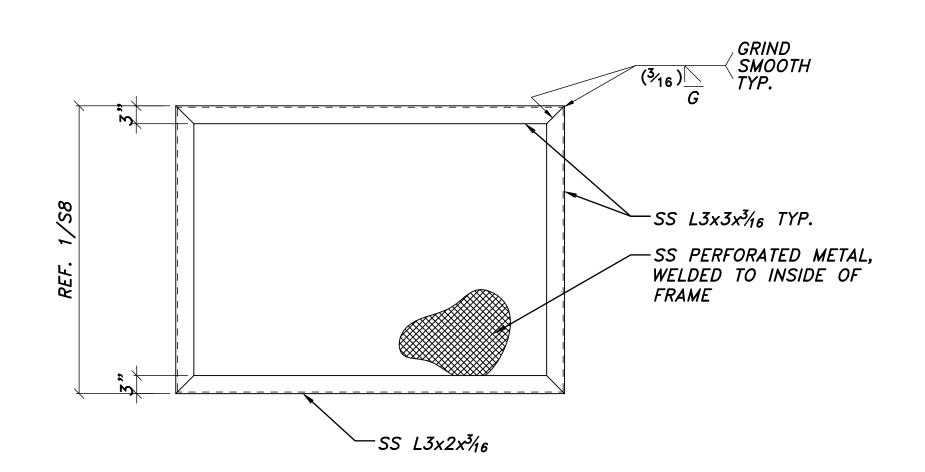
Portland, OR 97204 O: 503.227.3251 F: 503.227.7980

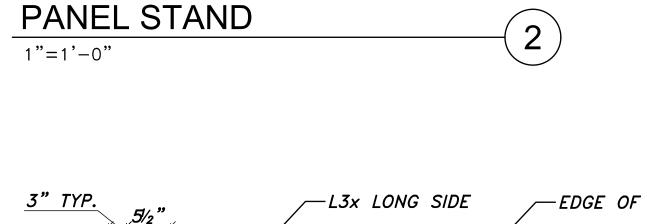
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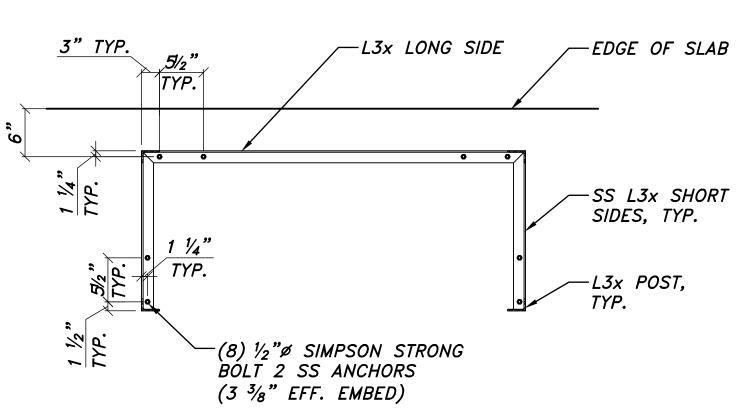


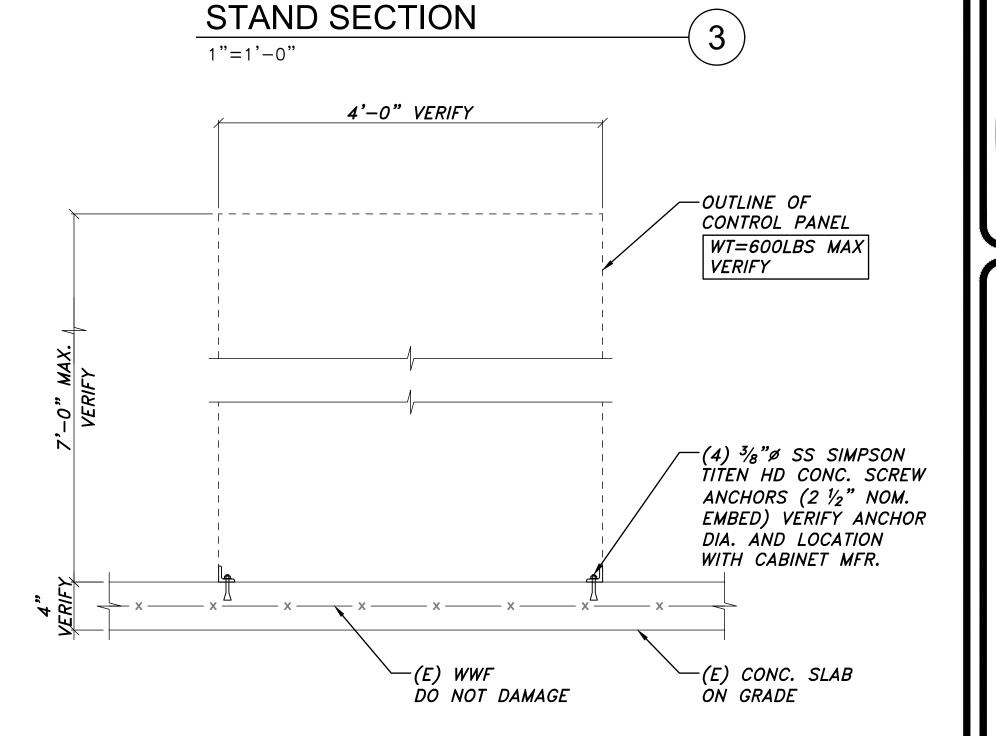




SECTION A-A

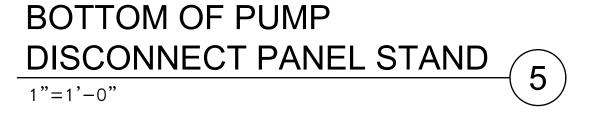
TOP OF PUMP DISCONNECT





PUMP DISCONNECT PANEL





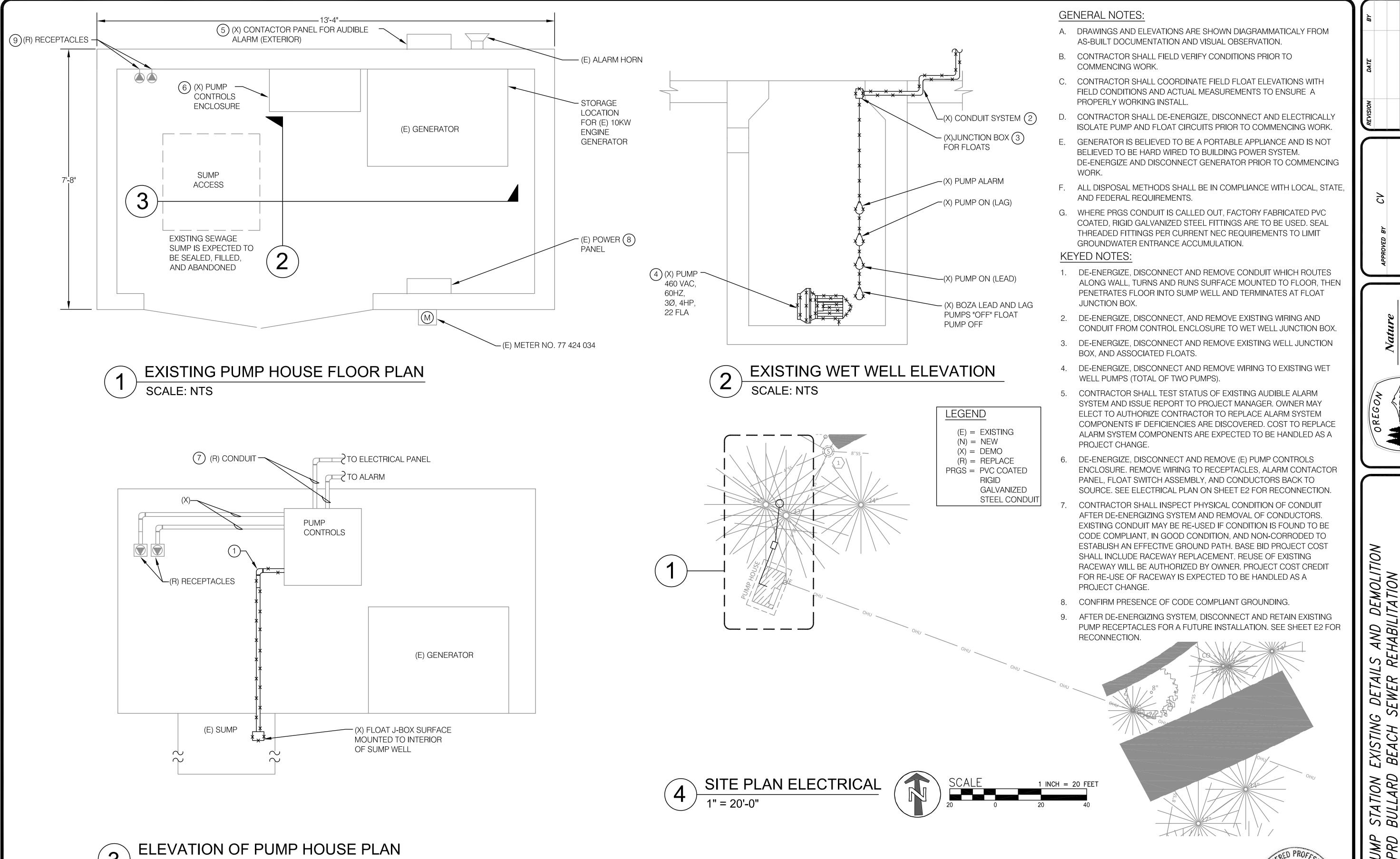






S8 OF 26 contract #: opris#: 25694

AND DETAILS REHABILITATION



SCALE: NTS

SUSTAINABILITY

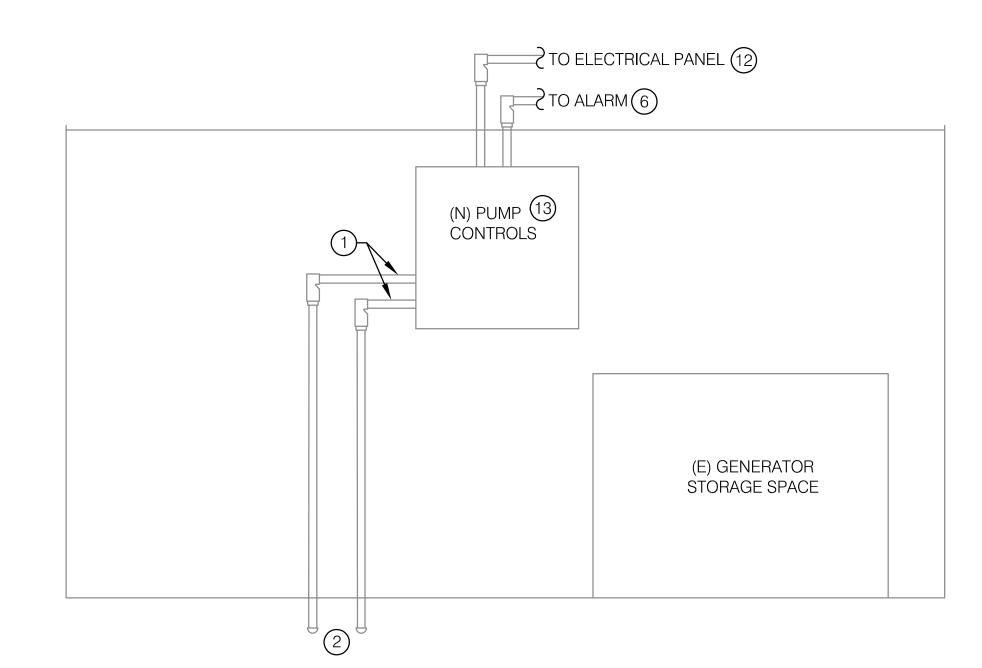
321 NE Couch Street, Suite 403 Portland, OR 97232 Tel: (503) 771-1986

EXPIRES: JUNE 30, 2023

E1 OF 26 CONTRACT #: 8334 25694

8 DIN SPLICE RAIL (14)(R) RECEPTACLES -(N) NEMA 4X S/S PUMP -**DISCONNECT PANEL** AND STAND SEWAGE FLUID SUMP -INTERIOR IS CONSIDERED └─(N) CONDUIT SYSTEM CLASS 1 DIVISION 1 HAZARDOUS VOLUME — (N) S.S. UNISTRUT FOR FLOATS (9) - (N) OVERFLOW FLOAT (15) -(N) PUMP ALARM FLOAT (5) (6) (7) -(N) PUMP ON (LAG) FLOAT (5)(7)SEWAGE SUMP 208 VAC, -(N) PUMP ON (LEAD) FLOAT (5) (7)60HZ, 3Ø, 5.5 HP, -(N) LEAD PUMP/LAG PUMP: (5) (7)15 FLA PUMP OFF FLOAT **ELEVATION OF NEW WET WELL** 

# PUMP HOUSE FLOOR PLAN SCALE: NTS



**ELEVATION OF PUMP HOUSE PLAN** SCALE: NTS

### **GENERAL NOTES:**

- A. DRAWINGS AND ELEVATIONS ARE SHOWN DIAGRAMMATICAL FROM AS-BUILT DOCUMENTATION AND VISUAL OBSERVATION.
- CONTRACTOR SHALL FIELD VERIFY CONDITIONS PRIOR TO COMMENCING WORK.
- CONTRACTOR SHALL COORDINATE FIELD FLOAT ELEVATIONS WITH FIELD CONDITIONS AND ACTUAL MEASUREMENTS TO ENSURE A PROPERLY WORKING INSTALL.

SCALE: NTS

- D. CONTRACTOR SHALL DE-ENERGIZE, DISCONNECT AND ELECTRICALLY ISOLATE PUMP AND FLOAT CIRCUITS PRIOR TO COMMENCING WORK.
- E. INTERIOR OF PUMP HOUSE BUILDING IS CONSIDERED A NON-HAZARDOUS VOLUME IF SUMP ACCESS SEALS AND VENT PIPING ARE IN GOOD CONDITION.
- F. CONTRACTOR SHALL REPLACE TWO EXISTING PUMPS WITH TWO SIMILARILY SIZED PUMPS WITH NO EXPECTED NET CHANGE IN LOAD.
- G. EXISTING PUMPS HAVE BEEN OPERATING AS A DUPLEX PUMP STATION WITH A 30 AMP BREAKER. CONTRACTOR SHALL REPLACE WITH A 40 AMP BREAKER FOR BETTER MOTOR STARTING COORDINATION. CONTRACTOR SHALL COORDINATE BREAKER FRAME, VOLTAGE AND AIC RATINGS WITH EXISTING PANEL.

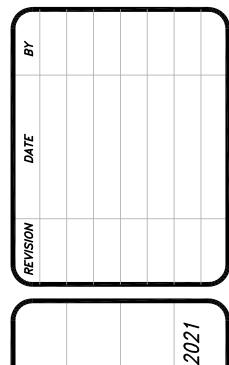
### **KEYED NOTES:**

- 1. EXTEND (2) 1" PRGS C. FROM (N) PUMP CONTROLLER. ROUTE DOWN ALONG WALL, PENETRATE SLAB, TURN, AND EXIT BUILDING UNDERGROUND. WIRE AND EXTEND (8) #14 XHHW-2 AND #12 GND IN 1" PRGS C. FROM PUMP CONTROLLER TO NEW NEMA-4X ENCLOSURE FOR FLOAT CABLE SPLICE, FOUR FLOATS, TWO WIRES PER FLOAT. WIRE AND EXTEND (6) #10 XXHW-2 AND (2) #10 GND IN 1" PRGS C. FROM PUMP CONTROLLER TO NEMA-4X ENCLOSURE FOR PUMP POWER CONNECTION.
- 2. AFTER PENETRATING EXISTING FLOOR, TURN AND ROUTE (2) 1" PRGS C. SYSTEM UNDERGROUND TO NEMA-4X ENCLOSURE. TURN UP AND STUB FOR EXTENSION.
- 3. FOUR TYPE 'SO' CABLE IN 2" PRGS. EXTEND NEW 2"C. FROM NEW NEMA 4X ENCLOSURE TO INTERIOR OF WET WELL.
- 4. PROVIDE SEAL OFF FITTINGS.
- 5. INSTALL AND CONNECT A TOTAL OF FOUR (4) NEW FACTORY TERMINATED AND SEALED FLOATS PER MANUFACTURER'S INSTALLATION INSTRUCTIONS. COORDINATE FLOAT ELEVATIONS WITH CIVIL. ENSURE CORD SET LENGTH IS ADEQUATE FOR FLOAT ELEVATION: LEAD PUMP START, LAG PUMP START, LEAD/LAG PUMPS STOP AND ALARM ELEVATIONS. FLOATS TO BE ARRAYED IN A MANNER THAT PREVENTS THEM FROM TANGLING WITH EACH OTHER OR OTHER ELEMENTS PRESENT IN SEWAGE SUMP.
- ALARM SHALL BE CONFIGURED TO SOUND WHEN HIGH LEVEL STATE HAS BEEN ACHIEVED. RECONNECT ALARM CIRCUIT WITH NEW XHHW-2 CONDUCTORS FOR A COMPLETE AND OPERABLE SYSTEM.
- 7. MOUNT FLOATS WITH A MINIMUM OF 2.0 TIMES FLOAT LENGTH AS HORIZONTAL FLOAT SPACING TO LIMIT TANGLING OF FLOATS.

- PROVIDE A FREE STANDING NEMA-4X STAINLESS STEEL ENCLOSURE WITH PANEL STANDS TO HOUSE PUMP DISCONNECTS. REFER TO STRUCTURAL DRAWINGS FOR FOUNDATION DETAILS. REFER TO CIVIL DRAWINGS AND COORDINATE ENCLOSURE LOCATION AND ELEVATIONS PRIOR TO ROUGH-IN
- CONTRACTOR SHALL SURFACE MOUNT S.S. UNISTRUT ASSEMBLY TO INTERIOR OF SEWAGE SUMP. UNISTRUT TO BE STAINLESS STEEL WITH STAINLESS STEEL BOLTS, WASHERS AND CONCRETE ANCHORS.
- 10. SEE CIVIL PLAN FOR PUMP SPECIFICATIONS. CONTRACTOR SHALL ELECTRICALLY INSTALL, WIRE AND CONNECT TWO PUMPS ACCORDING TO MANUFACTURER'S RECOMMENDATION USING FACTORY SEALED, FACTORY SUPPLIED CABLE. CONTRACTOR SHALL WIRE AND CONNECT MOTOR TO STARTER AND MONITORING EQUIPMENT ACCORDING TO MANUFACTURER'S SPECIFICATIONS. PUMP SHALL BE XYLEM CONCERTOR 6020N80 230V 5.5HP. CONFIRM CABLE LENGTH IS ADEQUATE FOR DEPTH OF SEWAGE SUMP AND EXTENSION TO DISCONNECT ENCLOSURE.
- 11. REPLACE PUMP BREAKER WITH NEW 40 AMP 3 POLE, 42KAIC RATED, 30MA TRIP GFCI CIRCUIT BREAKER.
- 12. WIRE AND CONNECT PUMPS TO ELECTRICAL PANEL. VIA PUMP CONTROL/STARTER
- 13. PROVIDE NEW PUMP CONTROLS. CONTRACTOR SHALL PROVIDE AND INSTALL A NEW NEMA 3R PAINTED STEEL ENCLOSURE. SECURE ENCLOSURE TO WALL AND MOUNT NEW PUMP CONTROLLER IN NEMA 3R ENCLOSURE. WIRE AND CONNECT TO (E) POWER PANEL USING 3#8 XHHW-2 AND 1#8 XHHW-2 GND IN EXISTING RACEWAY. REPLACE CIRCUIT BREAKER PER SHEET NOTE 11, THIS SHEET. WIRE AND CONNECT TO FLOAT SWITCHES PER MANUFACTURER'S RECOMMENDATION. WIRE AND CONNECT ENCLOSURE TO ALARM CONTACTOR PANEL PER MANUFACTURER'S RECOMMENDATION.
- 14. CONTRACTOR SHALL REUSE EXISTING CORDSET RECEPTACLE AND SHALL RETERMINATE EXISTING CORDSET PLUG ONTO NEW CORDSET AS THE INTENT IS TO REUSE EXISTING WALL MOUNTED PUMP MOTOR RECEPTACLES. RELOCATE TO LOCATION INDICATED AND INSTALL INSIDE NEW NEMA-4X ENCLOSURE.
- 15. CONTRACTOR SHALL PROVIDE OVERFLOW FLOAT PER DEQ REQUIREMENTS. PROVIDE SIGNAL WIRE AND CONNECT OVERFLOW FLOAT TO ALARM CONTACTOR PANEL USING XHHW-2 CONDUCTORS. ALARM SHALL BE CONFIGURED TO SOUND DURING AN OVERFLOW EVENT.







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ECTRI BEACH STAT

VS REHABILITATION

PUMP OPRD BULL

SHEET: E2 OF 26 CONTRACT #: 25694 *8334* 



# Oregon Parks and Recreation Department

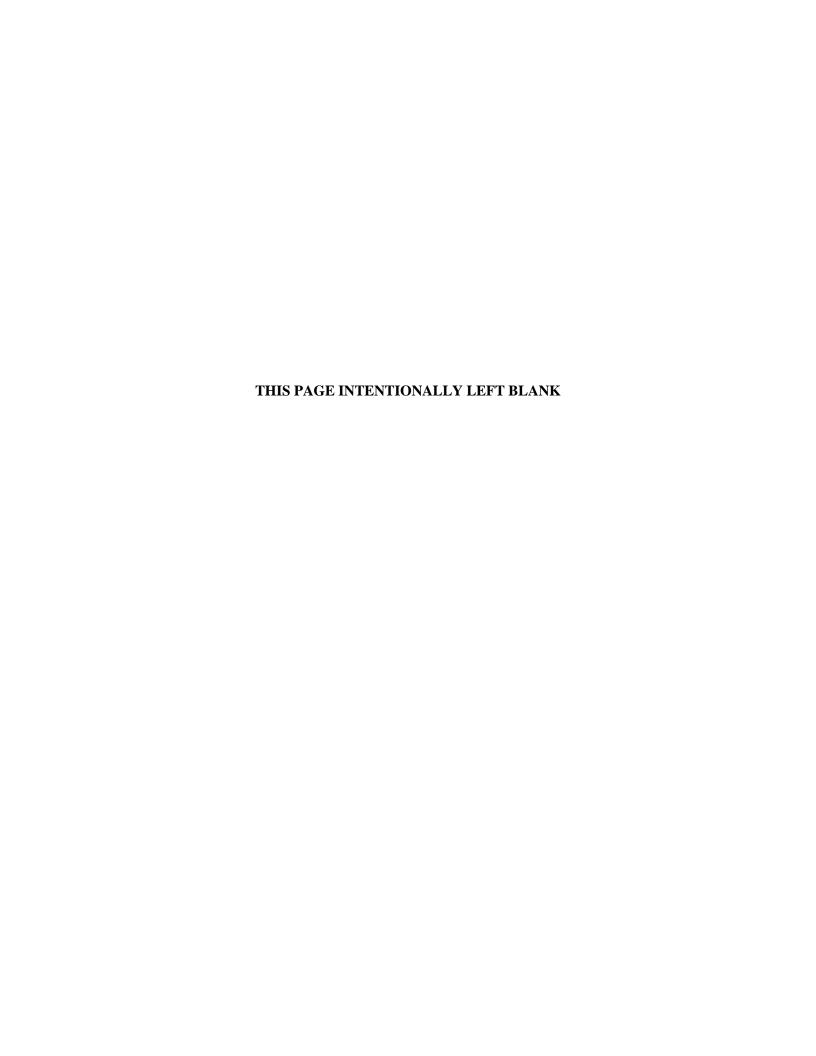
# TECHNICAL SPECIFICATIONS For

# Replace Main Sewer Line at Bullards Beach State Park

Project Number: #25694 Contract Number: #8334 Date: June, 2021

Prepared by:

Jeffrey Wagner Construction Project Manager **Oregon Parks and Recreation Department** Engineering Services Division 725 Summer Street NE, Suite C Salem, Oregon 97301



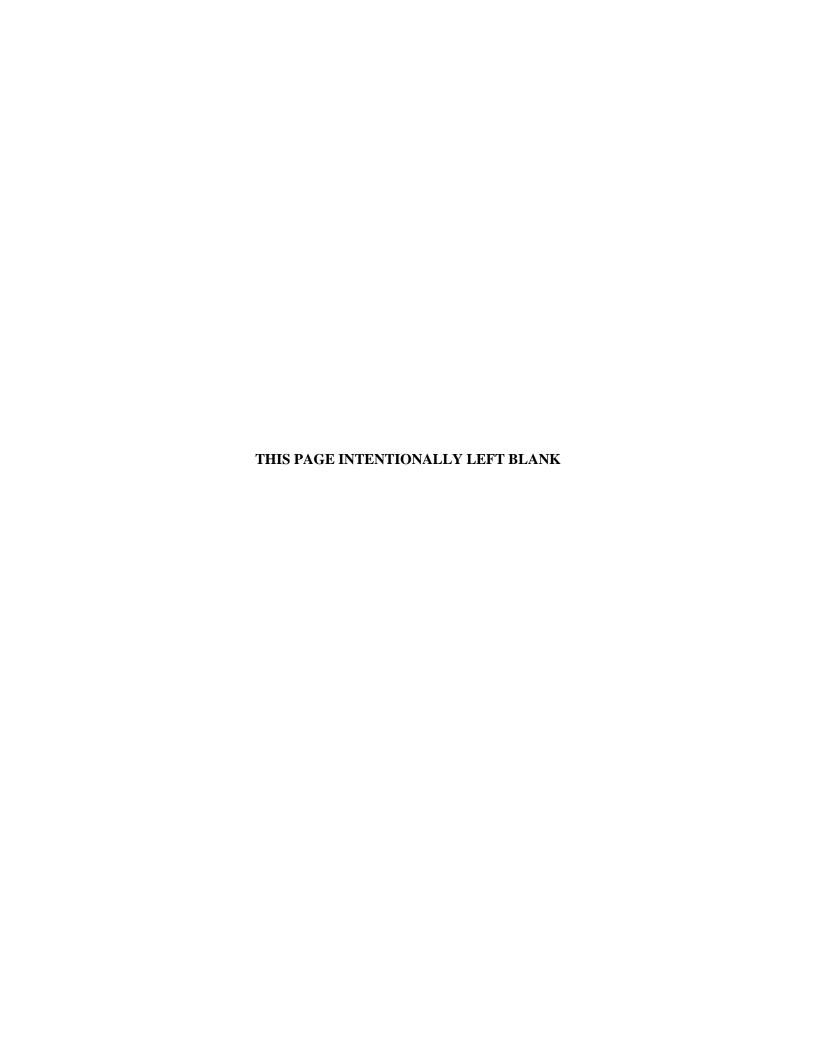
### **SEALS PAGE for**

Bullards Beach Sewer Rehabilitation Project

Project Number: #25694 Contract Number: #8334



Specifications 311000, 312000, 312500, 321216, 330500, and 33100 Curt Vanderzanden, PE  $\,$ 



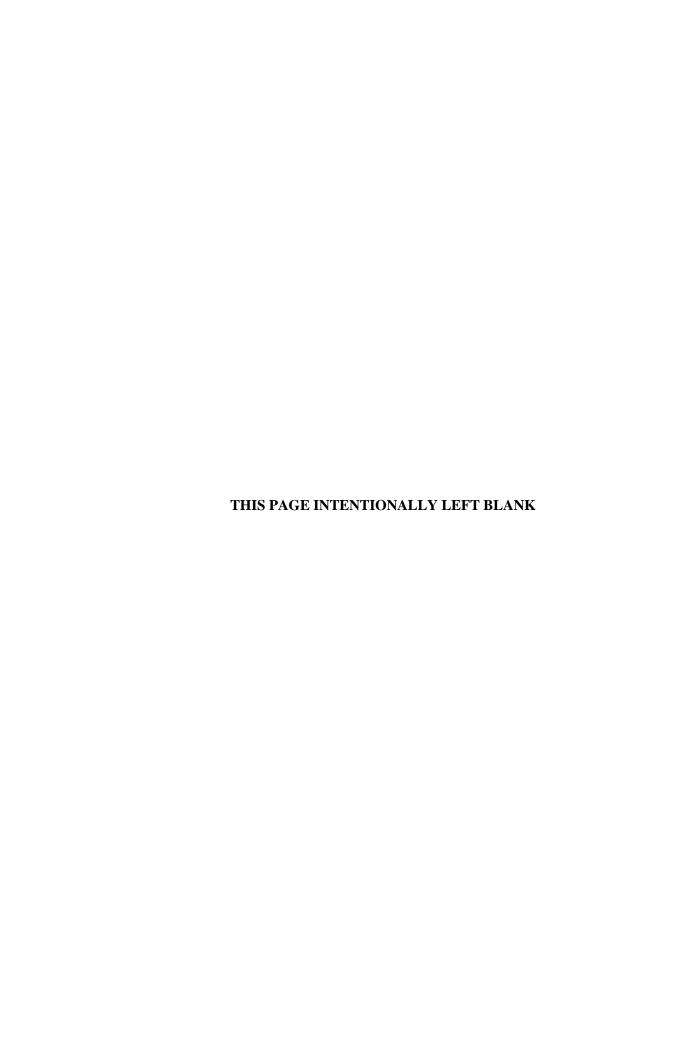
### **SEALS PAGE for**

Bullards Beach Sewer Rehabilitation Project

Project Number: #25694 Contract Number: #8334



Specifications 033000 and 051200 Craig Totten, PE, SE



### **SEALS PAGE for**

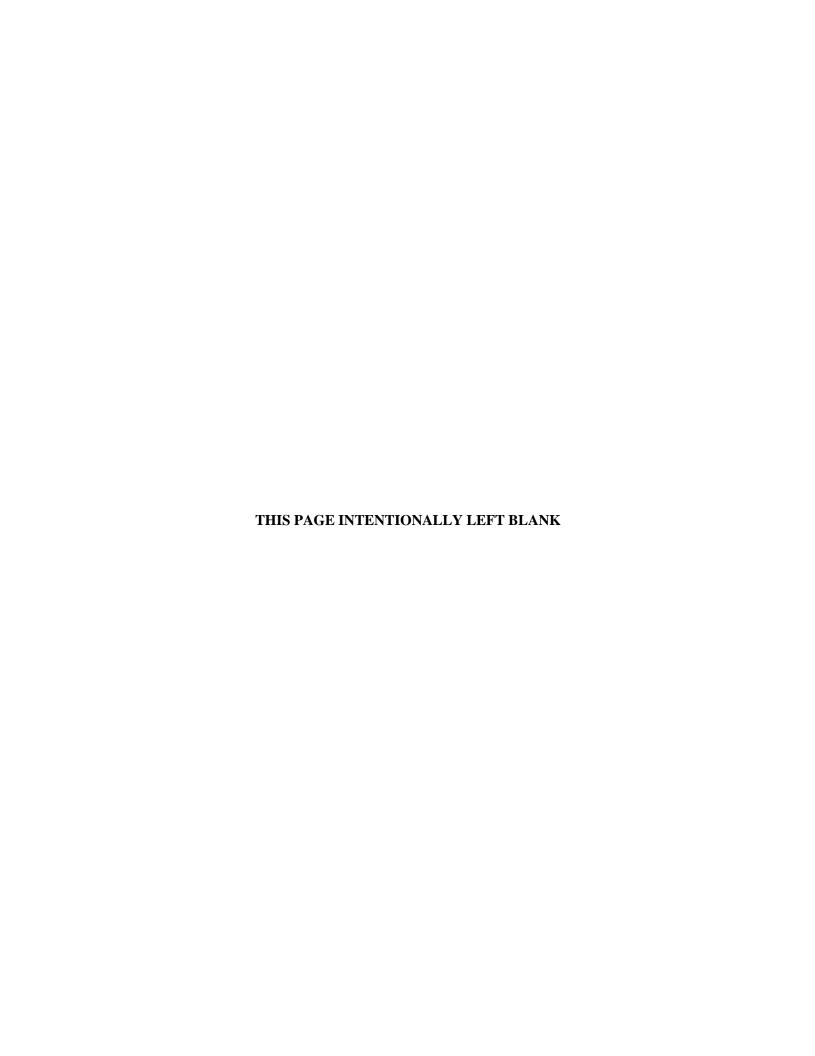
Bullards Beach Sewer Rehabilitation Project

Project Number: #25694 Contract Number: #8334



EXPIRES: JUNE 30, 2023

Specifications 260500, 260501, 260519, 260526, 260529, 260533, 262000, and 262726 Robert C. Klawa, PE



### Technical Specifications for Bullards Beach Sewer Rehabilitation

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### **SECTION 01010 - SUMMARY OF WORK**

### **PART 1 - GENERAL**

#### 1.01 SUMMARY

A. These specifications are subject to the administrative and procedural requirements specified in the State of Oregon Standard Conditions for Public Improvement Contracts (January 1, 2006).

#### 1.02 DESCRIPTION OF WORK

- A. Location of work is at Bullards Beach State Park, located approximately 2 miles north of Bandon, off Oregon Highway 101, in Coos County, Oregon.
- B. Project is to:
  - 1. Remove and replace existing sanitary sewer main line.
  - 2. Reconnect existing lateral sewer connections.
  - 3. Rehabilitate existing sanitary manholes.
  - 4. Make wet well and electrical improvements as shown on the plans.
  - 5. Install pumps and control panel in new wet well and connect to existing sewer force main.
- C. Project is for Oregon Parks and Recreation Department (OPRD), referred to hereafter as Owner.
- D. The Project Manager and Owner's Authorized Representative is:

Darrell Monk Phone: (503) 298-1879 Oregon Parks and Recreation Department 725 Summer Street, NE, Suite C Salem, Oregon 97301-1266

### 1.03 CONSTRUCTION STAKEOUT

A. The Project Manager has provided for the Contractor's stakeout of the construction work in the form of reference and dimensions from existing facilities adjacent to the proposed work and/or survey control points, as shown on the Plans. The Contractor will be solely responsible for laying out the work from the information shown on the Plans, and no additional stakeout will be provided by the Project Manager.

#### 1.04 SPECIFICATION LANGUAGE

A. Portions of the Specifications are written in imperative and streamlined form. This imperative language is directed to the Contractor, unless specifically noted otherwise. The

1

words "shall be" shall be included by inference where a colon (:) is used within sentences or phrases. Example: Aggregate: ASTM C33.

**PART 2 - MATERIALS (not applicable)** 

**PART 3 - EXECUTION (not applicable)** 

### **END OF SECTION**

### **SECTION 01019 – CONTRACT CONSIDERATIONS**

#### PART 1 – GENERAL

### 1.01 SPECIAL PROJECT REQUIREMENTS

- A. Work on the project may begin after issuance of Notice to Proceed, but must not interfere with the park operation beyond the project site.
- B. The project site will be closed to the general public from January 1<sup>st</sup>, 2022 to March 27<sup>th</sup>, 2022.
- C. The immediate areas surrounding the construction site shall be open to the public from start of construction until the specified completion date. The Contractor shall coordinate with the Project Manager to provide both access and public safety during construction. Devices required to provide for public safety during construction shall be provided and installed by the Contractor.
- D. Construction operations shall be restricted to the hours between 7:00 a.m. and 7:00 p.m.
- E. No work shall be performed on any legal holiday or weekends without approval from the Project Manager.

#### 1.02 CONSTRUCTION STAKEOUT

A. The Project Manager has provided reference points for the Contractor's stakeout of the construction work. The reference points are in the form of reference elevation and coordinates from existing survey control points, as shown on the Drawings. The Contractor will be solely responsible for laying out the work from coordinate point stakeout control shown on the Drawings, and no additional stakeout will be provided by the Project Manager.

### 1.03 EXISTING UTILITIES

- A. In general, the locations of existing major utilities, whether aboveground or underground, are indicated on the Drawings. This information has been obtained from utility maps and field surveys. The Owner does not guarantee the accuracy or completeness of this information. It is understood there may be interfering utilities, service laterals and other underground pipes, drains and structures encountered on underground projects that are not shown or are shown incorrectly on the Plans and/or have not been previously discovered in the field. The Contractor agrees that a reasonable number of these occurrences are usual and ordinary on underground projects and are reflected in the Bid and plan of operation. Furthermore, bidders understand and agree that work in some cases must be done in close proximity to said utilities and underground pipes, drains, and structures not shown or shown incorrectly on the Plans which may require a change in operations and may cause sloughing of the trench, additional traffic control, additional pavement and backfill costs, and time.
- B. Determine the exact location of existing underground facilities in advance of construction as necessary to avoid unnecessary damage, maintenance costs; and to ensure continuity of customer service and to verify locations so as not to affect main pipeline installation. All

Division 1

- costs associated with the obtaining of such locating services are to be borne by the Contractor.
- C. Contact all utility companies and departments having underground facilities within the construction area and request they locate and mark their utilities. The Contractor shall comply with Oregon "locate law".
- D. Comply with Oregon Administrative Rules Division 952, Relating to Abandoned Underground Facilities. Abandoned Facility means an underground facility that is no longer in service and is physically disconnected from the operating facility that is in service. In addition to notification requirements of this rule, notify Project Manager of any Abandoned Underground Facilities which are discovered during the course of the project.

#### 1.04 SPECIFICATION LANGUAGE

A. Portions of the Specifications are written in imperative and streamlined form. This imperative language is directed to the Contractor, unless specifically noted otherwise. The words "shall be" shall be included by inference where a colon (:) is used within sentences or phrases. Example: Aggregate: ASTM C33.

### 1.05 NOTICE

A. Give reasonable notice to occupants of buildings on property adjacent to the Work to permit the occupants to remove vehicles, trailers and other possessions, as well as salvage or relocate plants, trees, fences, sprinkler systems, or other improvements which are designated for removal or which might be destroyed or damaged by work operations.

### 1.06 TEMPORARY UTILITIES

- A. Connections to existing utilities (electric, water, sewer, telephone service) may be allowed as approved by the Project Manager. Contractor to make arrangements for connections. Contractor to pay for cost of connection and use. Exercise measures to conserve energy and water.
- B. Provide toilet and wash-up facilities for the work force at the site. Comply with applicable laws, ordinances and regulations pertaining to public health and sanitation.

### 1.07 CONSTRUCTION FACILITIES

- A. Provide barriers to prevent unauthorized entry to construction areas and to protect existing facilities from damage during construction and demolition operations.
- B. There is limited area for parking, staging and stockpiling at the proposed site. The Contractor is responsible for maintaining parking, staging and stockpiling areas.

#### 1.08 PROGRESS CLEANING

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipes and other closed or remote spaces.
- C. Remove waste materials, debris and rubbish from the site immediately upon such materials

becoming unfit for use in the work. In the event this material is not removed, Project Manager reserves the right, but does not have the duty, to have the material removed and the expense shall be charged to the Contractor.

D. Provide legal, debris disposal off-site.

**PART 2 - MATERIALS (not applicable)** 

**PART 3 - EXECUTION (not applicable)** 

# **SECTION 01025 - MEASUREMENT AND PAYMENT**

### **PART 1 - GENERAL**

#### 1.01 DESCRIPTION

- A. All Payments shall be as provided in the State of Oregon Standard Conditions for Public Improvement Contracts. References to other documents in the Drawings and in the Technical Specifications, such as ODOT and ODOT/APWA are not intended to include references to measurement and payment that may exist in those other documents. Specific Measurements for Payment are detailed in this specification Section 01025.
- B. If no Item exists for a portion of the Work, include the costs in a related Item.
- C. No separate payment will be made for any item that is not specifically set forth in the Solicitation and all costs therefore shall be included in the prices named in the Solicitation for the various appurtenant items of work.
- D. Quantities listed in the Contract Document do not govern final payment. Payments to the Contractor will be made only for actual quantities of Contract items performed in accordance with terms of the Contract and for items of work actually performed under Change Orders.
- E. Indirect costs, such as supervision and overhead, profit, and the general conditions specified in the Contract, all shall be allocated to each item as applicable for Work defined in the item. No separate payment will be made to the Contractor for these items.

### 1.02 ITEM MEASUREMENT AND PAYMENT

## A. ITEMS:

- 1. Mobilization: Payment for Mobilization shall be made on a lump sum basis. The amount to be allowed for Mobilization in the partial payment to be made under the Contract will be as follows:
  - a) When 5% of the total original contract amount is earned from other items, not including advances on materials, 50% of the amount bid for Mobilization, or 2.5% of the original contract amount, whichever is the least, less normal retainage, will be paid.
  - b) When 10% of the total original contract amount is earned from other items, not including advances on materials, 100% of the amount bid for Mobilization, or 5% of the original contract amount, whichever is the least, less normal retainage, will be paid.
  - c) Upon completion of all work on the project, payment of any amount bid for Mobilization in excess of 5% of the total original contract amount will be paid.
  - d) The above schedule of progress payments for Mobilization shall not limit or preclude progress payments otherwise provided by the Contract.
- 2. Permit & Fee Allowance:

- a) Measurement for Permit Allowance shall be per actual unit cost as documented on official invoices for the following items:
  - 1) Permit Fees
  - 2) Post Construction Surveying.
  - 3) 3<sup>rd</sup> Party Geotechnical and Pipe Testing Services.
- b) Payment shall include full compensation for all materials, equipment, and labor required. Costs for retesting of previous tests and inspections resulting in failure and contractor labor to assist the testing agency will be considered incidental to this bid item.

#### 3. Erosion Control:

- a) Measurement for Erosion Control shall be made on a lump sum basis.
- b) Payment shall include full compensation for all materials, tools, equipment, and labor necessary for the installation, maintenance, and inspection of erosion control measures, and all other related Work in accordance with the requirements of the Contract Documentation and as shown on the Drawings.
- 4. Removal of Existing Structures and Obstructions:
  - a) Measurement for Removal and/or salvage of Existing Structures and Obstructions shall be made on a lump sum basis for all material removed as shown on the Drawings.
  - b) Payment shall include full compensation for all labor, materials, tools and equipment necessary for the removal of all structures, removal of trees, removal and reinstallation of signs, hauling and legal disposal of excess material off-site, and all other related Work in accordance with the requirements of the Contract Documents and as shown on the Drawings.
- 5. Trench Restoration Native Seeding:
  - a) Measurements shall be made on a per square yard basis installed.
  - b) Payment shall include full compensation for all materials, equipment, tools and labor necessary for providing and installing native grass seed in conformance with the specifications, and all other related Work in accordance with the requirements of the Contract Documents and as shown on the Drawings.
- 6. Trench Restoration Camp Road:
  - a) Measurement shall be made on a per square yard basis installed.
  - b) Payment shall include full compensation for all materials, equipment, tools, and labor necessary for providing, installing, asphalt pavement, geotextile fabric, and aggregate base rock in conformance with the specifications, and all other related Work in accordance with the requirements of the Contract Documents and as shown on the Drawings.

# 7. Trench Restoration – Main Road:

- a) Measurement shall be made on a per square yard basis installed.
- b) Payment shall include full compensation for all materials, equipment, tools, and labor necessary for providing, installing, asphalt pavement, geotextile fabric, and aggregate base rock in conformance with the specifications, and all other related Work in accordance with the requirements of the Contract Documents and as shown on the Drawings.

### 8. Trench Restoration –Paver:

- a) Measurement shall be made on a per square yard basis installed.
- b) Payment shall include full compensation for all materials, equipment, tools, and labor necessary for salvaging, cleaning, and reinstalling pavers in conformance with the specifications, and all other related Work in accordance with the requirements of the Contract Documents and as shown on the Drawings. Sand bedding course, base course, and geotextile fabric are considered incidental to this bid item.

### 9. Trench Restoration – Sidewalk:

- a) Measurement shall be made on a per square foot basis installed.
- b) Payment shall include full compensation for all materials, equipment, tools, and labor necessary for providing, installing, and testing asphalt pavement, geotextile fabric, and aggregate base rock in conformance with the specifications, and all other related Work in accordance with the requirements of the Contract Documents and as shown on the Drawings.

# 10.- 13. Sanitary Sewer Piping - Gravity:

- a) Measurement shall be made on a lineal foot basis installed.
- b) Payment shall include full compensation for all materials, equipment, tools, and labor necessary for furnishing, transportation, and installation of the gravity sanitary sewer pipe including fittings, trench excavation, pipe zone material, backfill, dewatering, tracer wire, removal of existing sewer pipe, and all other related Work in accordance with the requirements of the Contract Documents and as shown on the Drawings. Fittings are considered incidental to this bid item.

# 14. Sanitary Sewer Cleanouts:

- a) Measurement shall be made on a per each basis installed.
- b) Payment shall include full compensation for all materials, equipment, tools, and labor necessary for furnishing and installation of the cleanouts including removal of existing cleanouts, fittings, trench excavation, backfill, lid, concrete backfill and ballast, and all other related Work in accordance with the requirements of the Contract Documents and as shown on the Drawings.

### 15. Reconnect Existing Laterals:

- a) Measurement shall be made on a per each basis installed.
- b) Payment shall include full compensation for all materials, equipment, tools, and labor necessary for furnishing and installation of new sanitary fittings and pipe to reconnect the existing lateral pipe to the existing sewer pipe. Work shall be in accordance with the requirements of the Contract Documents and as shown on the Drawings.

# 16. Sanitary Sewer Manhole Rehabilitation:

- a) Measurement shall be made on a per each basis installed.
- b) Work shall include full compensation for all materials, equipment, tools, and labor necessary for furnishing and installation of the sanitary sewer manhole repair, including resealing joints, lid plugs, chimney seals, backfill, surface restoration, cleaning, surface preparation, dewatering, and all other related Work in accordance with the requirements of the Contract Documents and as shown on the Drawings.

#### 17. Manhole:

- a) Measurement shall be made on a per each basis installed.
- b) Work shall include full compensation of all materials, equipment, tools, and labor necessary for furnishing and installation of a sanitary manhole, including sealing external joints, lid plugs, chimney seals, backfill, surface restoration, cleaning, surface preparation, dewatering, and all other related Work in accordance with the requirements of the Contract Documents and as shown on the Drawings.

## 18. Wetwell Improvements:

- a) Measurement for Sanitary Sewer Pump Station improvements as shown on the plans shall be made on a lump sum basis installed.
- b) Work shall include full compensation for all materials, equipment, tools, and labor necessary for the design, fabrication, furnishing, transportation, and installation of the pumps, check valve, ball valve, gate valves, rail guides, wetwell insert, hatch and cable tray, pump disconnect panel, control panel, piping, and all other related Work in accordance with the requirements of the Contract Documents and as shown on the Drawings. Dewatering, cleaning, and decontaminating the vault to allow for the work to be performed is considered incidental to this bid item.

# 19. Electrical Improvements, Complete:

- a) Measurement shall be made on a lump sum basis installed.
- b) Payment shall include full compensation for all materials, equipment, and labor to complete installation of power service to the site as shown on the plans, including but not limited to pump installation, utility vaults, primary feeders, transformer and meter. Coordination with PUD is incidental to this bid item.

# 20. As-Built/O&M Manuals:

- a) Measurement shall be made on a lump sum basis.
- b) Payment will include full compensation for all materials, equipment, and labor to document as-built conditions for Record Drawings to be developed at the end of the project and development of all required O&M Manuals as specified in the technical specifications.

**PART 2 - MATERIALS (not applicable)** 

**PART 3 - EXECUTION (not applicable)** 

# **SECTION 01028 - MODIFICATION PROCEDURES**

# **PART 1 - GENERAL**

### 1.01 SUMMARY

- A. Section Includes: Administrative requirements for Requests for Information and Proposal Requests.
- B. Prior to execution of a change order, the following documents shall be submitted as indicated.

# 1.02 REQUEST FOR INFORMATION (RFI)

### A. General:

- 1. RFI's are requests for information originated, prepared and submitted by the Contractor to the Project Manager only when the Contractor is unable to determine from the Contract Documents, the material, process, system or work to be installed. The Contractor will endeavor to keep the number of RFI's to a minimum. For critical or emergency items, contact Project Manager at once.
- 2. In the event the Contractor believes that a clarification by the Project Manager results in additional cost or time, the Contractor shall not proceed with the work indicated by the RFI until the Project Manager provides an approved copy of the RFI to the Contractor or until a Proposal Request is fully-executed. A Change Order will be processed to include this type of change.
- 3. Submit RFI's on form provided by Project Manager.
- 4. Number RFI's sequentially; include date submitted.
- 5. Identify Project, pertinent Plan sheet, detail number, and Specification Section.
- 6. Specifically identify time response information as required to avoid impact on Construction Schedule or Cost. Project Manager shall endeavor to respond to proper RFI's within 7 Days, if possible.
- B. RFI's shall include written and graphic solutions proposed by Contractor. Project Manager will determine if Contractor's proposal is in accordance with Contract Documents and design intent of Project.

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- 1. Contractor's failure to make a reasonable effort to propose realistic solution may result in RFI's being returned with no action.
- 2. RFI's that request information that is clearly shown in the Contract Documents will be considered frivolous/improper and will be returned with no action.
- C. Contractor to maintain current and accurate RFI Log.

# 1.03 PROPOSAL REQUEST (PR)

# A. General:

- 1. Contractor shall provide quotations for extra work or changes in work when requested by the Project Manager, on a Proposal Request form to be provided by the Project Manager.
- 2. Contractor shall provide a detailed itemization of the costs to the degree necessary for evaluation by the Project Manager and shall indicate if a change in the Contract Period is warranted.
- B. Contractor to maintain current and accurate Proposal Request log.
- C. A Proposal Request shall not be interpreted as an authorization to proceed with extra or changed work. Contractor shall not proceed with the work indicated in the Proposal Request until the Project Manager provides a fully-executed copy. A Change Order will be processed to include approved Proposal Requests.

PART 2 - MATERIALS (not applicable)

**PART 3 - EXECUTION (not applicable)** 

# **SECTION 01062 - PERMITS AND FEES**

# PART 1 – GENERAL

# 1.01 DESCRIPTION

A. This section describes the permitting requirements for the project that are in addition to those indicated in the State of Oregon Standard Conditions for Public Improvement Contracts, including the roles and responsibilities of the Project Manager and the Contractor.

### 1.02 PERMITS

- A. Permits will be obtained by Oregon Parks and Recreation Department (OPRD) from the City of Bandon are in effect for work. The permits can be reviewed at the OPRD headquarters at 1115 Commercial Street NE in Salem.
- B. Contractor shall obtain all required electrical and plumbing over the counter permits.
- C. Comply with applicable terms and conditions contained in such permits.
- D. Contractor shall obtain all other permits necessary to complete the project.

#### 1.03 FEES

- A. Contractor shall provide a certified third-party inspection firm to provide testing such as but not limited to asphalt compaction testing, backfill compaction testing, etc. as described in the technical specifications.
- B. Contractor shall utilize a surveyor licensed in the State of Oregon to perform record drawing documentation as detailed in Specification 333100 Sanitary Utility Sewerage Piping.

# **PART 2 - MATERIALS (not applicable)**

# **PART 3 - EXECUTION (not applicable)**

# **SECTION 01090 – REFERENCE STANDARDS**

#### PART 1 - GENERAL

### 1.01 REFERENCE STANDARDS

A. All Work shall conform to the issue of following referenced standards which is current at date of receipt of bids. Whenever the following abbreviations are used in these Contract Documents, they are to be construed the same as follows.

AA -- Aluminum Association

AASHTO -- American Association of State Highway and Transportation Officials

ACI -- American Concrete Institute ACM -- American Construction Manual

AISC -- American Institute of Steel Construction

APA -- American Plywood Association
APWA -- American Public Works Association
ASTM -- American Society for Testing and Materials
AWPA -- American Wood Preservers' Association

AWS -- American Welding Society

AWWA -- American Water Works Association
NEC -- National Electric Code (Oregon Amended)

ODOT -- Oregon Standard Specifications for Highway Construction by the Oregon

Department of Transportation

ODOT/APWA -- 2002 Oregon Standard Specifications for Construction by the Oregon

Department of Transportation and Oregon Chapter of APWA

OSHA -- Occupational Safety and Health Administration

OPL -- Qualified Products Listing by the Oregon Department of Transportation,

Materials and Research Section

UBC -- Uniform Building Code State of Oregon, Structural Specialty Code

Amended

UPC -- Uniform Plumbing Code State of Oregon, Plumbing Specialty Code

WCLIB -- West Coast Lumber Inspection Bureau

# PART 2 - MATERIALS (Not Used)

# **PART 3 - EXECUTION (Not Used)**

# SECTION 01100 - SPECIAL PROJECT PROCEDURES

#### **PART 1 - GENERAL**

# 1.01 SPECIAL PROJECT REQUIREMENTS

- A. Contractor is advised that this is a public recreation facility. The parking lot and camp site will be closed as required for on-site construction operations. Contact the Park Manager, a minimum of 15 days in advance, to schedule closure of additional areas to the public during the construction period.
- B. All construction debris shall be disposed of in such a manner that it cannot enter the waterway.
- C. Care shall be taken to prevent any petroleum products, chemicals or other deleterious material from entering drainage ways or waterways.
- D. All areas disturbed or newly created by the construction activity, shall be seeded, sodded, revegetated or given some other type of protection against subsequent erosion and returned back to its original condition.

#### 1.02 PROGRESS CLEANING

- A. Maintain areas free of waste materials, debris and rubbish. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipes and other closed or remote spaces.
- C. Remove waste materials, debris and rubbish from the site immediately upon such materials becoming unfit for use in the work. In the event this material is not removed, Project Manager reserves the right, but does not have the duty, to have the material removed and the expense shall be charged to the Contractor.

## 1.03 TEMPORARY UTILITIES

- A. Connections to existing utilities (electric, water, sewer, telephone service) may be allowed as approved by the Project Manager. Contractor to make arrangements for connections. Contractor to pay for cost of connection and use. Exercise measures to conserve energy and water.
- B. Provide toilet and wash-up facilities for the work force at the site. Comply with applicable laws, ordinances and regulations pertaining to public health and sanitation.

# **PART 2 – MATERIALS (not applicable)**

# PART 3 – EXECUTION (not applicable)

# **SECTION 01300 - SUBMITTALS**

#### PART 1 – GENERAL

### 1.01 DESCRIPTION

A. This Section specifies transmittal instructions, the number of copies of Contractor submittals to be provided, and distribution of those submittals as required in the State of Oregon General Conditions for Public Improvement Contracts (B.18).

# PART 2 – MATERIALS (not applicable)

### **PART 3 – EXECUTION**

### 3.01 SUBMITTALS

### A. General:

- 1. For each required submittal, the Contractor shall submit four (4) copies of all the required information not less than fourteen (14) Days prior to purchase and/or installation. Two (2) will be returned to the Contractor. Individual sheets shall not exceed 22 inches x 34 inches.
- 2. Submittals regarding material and equipment shall be accompanied by Submittal/Transmittal Form. A separate form shall be used for each specific item, class of material, equipment, and items specified in separate, discrete sections for which the submittal is required. Submittals for various items shall be made with a single form when the items taken together constitute a manufacturer's package, or are so functionally related that expediency indicates checking or review of the group or package as a whole.
- 3. A unique number, sequentially assigned, shall be noted on the transmittal form accompanying each item submitted. Original submittal numbers shall have the following format: "XXX"; where "XXX" is the sequential number assigned by the Contractor. Resubmittals shall have the following format: "XXX Y"; where "XXX" is the originally assigned submittal number and "Y" is a sequential letter assigned for resubmittals, i.e., A, B or C being the 1st, 2nd and 3rd resubmittals, respectively. Submittal 25B, for example, is the second resubmittal of Submittal 25.
- B. Deviation from Contract: Submit a request for substitution for deviations from the Specifications or Plans. Include the reason for the deviation and cost differential for the deviation. Deviations from the Contract shall be authorized in writing by the Project Manager.
- C. Submittal Completeness: Submittals which do not have all the information required to be submitted are not acceptable and will be returned without review.
- D. The Project Manager reserves the right to ask for submittals that are not referenced in this document.

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Division 1 01300 – SUBMITTALS

### 3.02 REVIEW PROCEDURE

- A. The Project Manager will review the submittal and return it to the Contractor. The returned material will consist of two (2) marked up copies of the submittal. The returned submittal will indicate one of the following actions:
  - 1. If the review indicates the material, equipment or work method is in general conformance with the Plans/Specifications, the submittal copies shall be marked "Approved." In this event, the Contractor may begin to incorporate the material/equipment/work method covered in the submittal.
  - 2. If the review indicates the submittal is insufficient or that limited corrections are required, the submittal copies may be marked "Approved as Noted." The Contractor may begin to implement the work method or incorporate materials/comments covered in the submittal in accordance with the corrections/comments noted.
  - 3. If the review reveals the submittal is insufficient or contains incorrect data and the comments require revision and resubmittal, the submittal copies shall be marked "Not Approved, Resubmit". In this case, the Contractor shall not then undertake work covered by this submittal until the submittal has been revised, resubmitted and returned to the Contractor with a marking of "Approved" or "Approved as Noted".
  - 4. If the review reveals the material, equipment, or work does not require submittal, then the submitted copies shall be marked "Review Not Required Per Contract Documents." In this event, the Contractor may begin to incorporate the material/equipment/work covered by the submittal and no further action is required.

### 3.03 EFFECT OF REVIEW OF CONTRACTOR'S SUBMITTALS

- A. A mark of "Approved" or "Approved as Noted" shall mean the Project Manager has no objection to the Contractor, upon the Contractor's own responsibility, using the plan or method of work proposed, or providing the materials or equipment proposed.
- B. The Contractor shall furnish to the Project Manager the following items for equipment, articles and materials incorporated in the work:
  - 1. Submittals for items identified in individual specification sections.

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- 2. Manufacturer's special tools and special accessories normally furnished by the manufacturer and which, by their specific nature and special design, are suited for convenient and expeditious adjustment, maintenance and repair.
- 3. Two (2) sets of installation instructions, parts lists; routine preventative maintenance and operation manuals; corrective maintenance instructions; Plans and other like data pertinent for maintenance and repair.



# SECTION 01410 - INSPECTION AND MATERIAL TESTING

#### **PART 1 - GENERAL**

### 1.01 DESCRIPTION

A. This section describes the responsibilities of all parties pertaining to testing and inspections for quality control.

# 1.02 CONTRACTOR'S RESPONSIBILITY FOR QUALITY CONTROL

- A. Testing required by regulation or permit or by individual specification sections.
- B. Monitor quality control over suppliers, manufacturers, products, services, site conditions and workmanship, to produce work of specified quality.
- C. Comply fully with manufacturer's instructions.
- D. Should manufacturer's instructions conflict with Contract Documents, request clarification from Project Manager before proceeding.
- E. Furnish copies of quality assurance documentation to the Project Manager prior to end of job.

### 1.03 TESTING

- A. The Project Manager may make tests of the work at any time during construction of the Work, during the production, fabrication, or preparation and use of materials, parts, products and equipment. Contractor shall provide access for performance of these tests, including the excavation of shelves in the backfill trench for the safe performance of density testing.
- B. Project Manager reserves the right to require samples and to test products for compliance with pertinent requirements irrespective of prior certification of the products by the manufacturer.
- C. When such tests of the Work are necessary, as determined by the Project Manager, such tests will be made by and at the expense of Owner unless otherwise specified. The Contractor shall provide such facilities and cooperate as required for collecting and forwarding samples and furnish the required samples without charge and in ample time to permit testing prior to use, and provide safety measures and devices to protect those who take the samples.
- D. In the absence of any reference specification, materials shall meet the specifications and requirements of the American Society for Testing and Materials (ASTM), or the American Association of State Highway and Transportation Officials (AASHTO). When there is not pertinent coverage under ASTM or AASHTO, the material shall meet specifications and requirements of applicable commercial standards. Lacking such coverage, materials shall meet requirements established by reputable industry standards for a high-quality product of the kind involved.

E. Cost for re-testing due to Contractor's nonconformance to specified requirement or testing performed for the convenience of the Contractor shall be charged to the Contractor and withheld from any payment due.

PART 2 - MATERIALS (not applicable)

**PART 3 - EXECUTION (not applicable)** 

# **SECTION 01560 – ENVIRONMENTAL CONTROLS**

#### **PART 1 - GENERAL**

### 1.01 DESCRIPTION

A. This section specifies environmental mitigation and temporary environmental controls required to be maintained during construction. Nothing in this section shall relieve any person from the obligation to comply with the regulations or permits of any federal, state, or local authority.

#### **PART 2 - MATERIALS**

#### 2.01 SUBMITTALS

- A. Submittal: Develop and maintain for the duration of the contract an Erosion Control Plan (ECP) that will effectively incorporate and implement environmental protection precautions. The Contractor's ECP shall include methods and interim facilities to be constructed and/or used concurrently during construction to control erosion in such a manner as to ensure that sediment and sediment-laden water does not enter any drainage system, roadways, or violate applicable water quality standards. The ECP shall be in strict conformance with the requirements of the permits. Visible or measurable erosion which enters, or is likely to enter, a public storm and surface water system, wetland or stream is prohibited. The ECP shall include the name of the Contractor's employee authorized to supervise and enforce compliance with the ECP and telephone number(s) to contact that person at any time.
- B. The ECP shall be submitted and approved prior to initiating clearing activities.
- C. In the event a regulatory agency or jurisdiction determines the ECP to be inadequate to protect the environment:
  - 1. The Contractor shall immediately stop the affected work in progress until adequate environmental protection measures are implemented.
  - 2. The Contractor shall modify the ECP to meet the requirements of said regulatory agencies or jurisdictions and provide the Project Manager with the revisions to the ECP within five (5) Days of the notice of deficiency.

### 2.02 EROSION CONTROL

- A. Temporary Sediment Fences:
  - 1. Synthetic filter fabric shall contain ultraviolet ray inhibitors and stabilizers.
  - 2. Filter fabric fence shall have manufactured stitched loops for 2"x2" post installation. Stitched loops shall be installed on the up-hill side of the sloped area, with posts spaced a maximum of 6 feet apart.
  - 3. Where practical, the filter fabric shall be purchased in a continuous roll to the length required to avoid the use of joints.

- 4. The physical integrity of all materials shall be sufficient to meet the requirements of their intended use and withstand normal wear and tear.
- B. Straw Bale Sediment Barrier/Bio-Filter Bags: Standard 40 to 60-pound rectangular bales of cereal grain or seed straw. Wooden stakes (2"x2"x 3 feet) shall be used for straw bales and bio-filter bags.
- C. Plastic Sheeting: Polyethylene and have a minimum thickness of 6 mil.

### **PART 3 – EXECUTION**

### 3.01 SITE MAINTENANCE

- A. Dust shall be minimized by the Contractor to the extent practicable, utilizing all measures necessary including, but not limited to:
  - 1. Sprinkling haul and access roads and other exposed dust-producing areas with water.
  - 2. Use of covered haul equipment.

# 3.02 STREET CLEANING

- A. Prevent dirt, mud, and dust from escaping trucks departing the work site, by covering dusty loads and cleaning truck tires before leaving the construction site.
- B. All streets in the construction area used by Contractor's trucks or any other equipment hauling material to and from the area, whether within the Contract limits or adjacent thereto, shall be kept clean by the Contractor and shall be continuously serviced by the Contractor's use of sprinkling trucks to control dust. All cleaning and sprinkling shall be at the Contractor's expense. Violations of these requirements are sufficient grounds for the Project Manager to order the streets in question to be cleaned by others. The expense of the street cleaning will be charged against the Contractor and cost withheld from Contractor's payments.

# 3.03 NOISE CONTROL

- A. Comply with all local controls and noise level rules, regulations and ordinances.
- B. Each internal combustion engine used on the job, or related to the job, shall be equipped with a muffler of a type recommended by the manufacturer. No internal combustion engine shall be operated on the project without said muffler.
- C. Noise levels for scrapers, pavers, graders, backhoes and trucks shall not exceed 90 dBA. For other equipment, noise levels shall not exceed 85 dBA. Equipment that cannot meet these levels shall be quieted by use of improved exhaust mufflers, noise attenuation barriers or other means approved by the Project Manager.
- D. If special circumstances or emergency conditions require work beyond the hours as specified, the Contractor shall:
  - 1. Notify the Project Manager 72 hours in advance of any proposed extended work

hours for preauthorization. The Contractor's written request shall specify the work to be performed and the circumstances that warrant the request. The request shall include any additional measures to mitigate noise generated by this construction activity, if deemed necessary by the Project Manager.

2. If an emergency situation occurs that warrants extended hours, the Contractor shall notify the Project Manager immediately upon determining the need for this work.

## 3.04 TREE AND PLANT PROTECTION

- A. The Contractor shall minimize vegetation removal during his construction operations.
- B. The Contractor shall protect all existing ornamental landscaping and trees from damage by construction activities. Work areas shall be carefully located and marked to reduce potential damage. Trees shall not be used as anchors for stabilizing working equipment. Work performed adjacent to ornamental landscaping and trees shall include protecting each tree or ornamental with a high visibility perimeter barrier fence. The barrier fence shall be an orange snow fence or approved equal. The Contractor shall not remove any ornamental landscaping or trees without written approval from Project Manager.
- C. Where existing vegetation or landscaped areas have been removed or disturbed by the Contractor's operations, the site shall be regraded and restored by the Contractor as soon as practicable, with no additional cost to the Owner.
- D. If ornamental landscaping or trees are damaged or destroyed by the Contractor's operations without prior authorization by the Project Manager, the Contractor shall replace the ornamental landscaping or tree in species, size and grade to the satisfaction of the Project Manager, at no cost to the Owner. The Contractor shall maintain the replacement ornamental landscaping for a period of 8 weeks, and replacement trees for a period of one year, to assure a satisfactory replacement. Replacement ornamental plantings or trees that are dead or dying, as determined by the Project Manager, at the end of the 8 week or one-year establishment period shall be replaced by the Contractor to the satisfaction of the Project Manager and at no cost to the Owner. Should it not be practical to replace the ornamental landscaping or tree, the Contractor shall pay damages in accordance with requirements of the Project Manager. In the event the Contractor does not perform this replacement work in a timely manner as determined by the Project Manager, the Project Manager reserves the right to have the work performed by others. The expense of replacing ornamental landscaping or trees will be charged against the Contractor and the cost withheld from Contractor's payments.

### 3.05 ADDITIONAL TREE PROTECTION

A. A critical root zone (CRZ) shall be established for all trees on-site that need protection. The CRZ shall be the area between the tree trunk and a surrounding protective barrier fence. The protective barrier fence shall be placed at a minimum distance of the dripline for broad-crowned trees (usually deciduous) and 1.5 times the dripline for narrow-crowned trees (usually conifers). For asymmetrical crowns, the dripline shall be determined at the crown's widest point. The Project Manager shall have the discretion to require fencing to be placed at a distance of a 1-1.5' radius for each inch of tree diameter at 4.5' (diameter breast height) if he/she feels that the dripline does not provide adequate protection. Regardless of diameter, fencing shall be placed at a minimum of 6' from the

- trunk of a tree. No disturbance of any kind shall take place within the fenced area (CRZ). Fencing shall not be removed or relocated without approval from Project Manager.
- B. When roots greater than 2" diameter are exposed, root pruning with a saw shall take place under the supervision of the Project Manager.
- C. When tree removals are required, stumps shall be ground rather than pulled when roots are intertwined with the root systems of adjacent trees. Stumps may be pulled when there is no danger of interfering with the roots of adjacent trees.
- D. The Project Manager may request that a 6-10" layer of mulch be applied over the critical root zones of trees on site before any construction activity begins to help reduce soil compaction. Following construction, the mulch shall be reduced to a depth of 4". The Project Manager may also request travel lanes for heavy equipment.
- E. Contractor shall monitor tree health throughout the construction process and notify Project Manager immediately of any damages to trees as a result of construction activities. Contractor shall not implement any tree care practices without approval from Project Manager.

# F. Trenching & Tunneling:

1. When trenching is utilized, it shall be done as far from the tree trunk as possible. For trees less than 7" in diameter, trenching should be avoided under the dripline. A general guideline for a minimum trenching distance is .5' for each inch of trunk diameter measured at 4.5' (dbh). The following table lists minimum distances for tree diameters:

Tree diameter	Minimum trenching distance from
(dbh-4.5')	trunk
10-12"	5-6'
14-16"	7-8'
18-20"	9-10'
22-24"	11-12'
26-28"	13-14'
30-32"	15-16'

- 2. In some cases, trenching inside of the minimum distance is unavoidable. When roots greater than 2" diameter are encountered while trenching inside of the minimum distance, equipment operation shall cease and roots shall be exposed by hand digging. Roots shall then be pruned cleanly with a saw to the depth of the required excavation, and on the edge of the trench closest to the tree. No root pruning shall take place without Project Manager's supervision.
- 3. Soil removed from the trenches shall be replaced as soon as possible. Exposed, pruned, or broken roots shall not be allowed to dry out prior to final backfill. Building materials, compacted soil, or soil with a permeability significantly different than the surrounding natural soil shall not be used to fill trenches.

Where feasible, a combination of trenching and tunneling may be utilized. Trenching may be used in gaps between trees where root damage is not an issue. When the trench approaches a tree's root zone, tunneling may be implemented until safely out of the root

zone. Another guideline is to replace trenching with tunneling when roots 1" in diameter are encountered. The following table lists some tunneling distances for tree diameters:

Tree diameter	Minimum tunneling distance from
	any side of tree
6-9"	5'
10-14"	10'
15-19"	12'
Over 19"	15'

- 4. Tunneling is the preferred method over trenching for root protection. Tunneling at a minimum depth of 2' is recommended; 3-4' is safer. It is best to tunnel at least 1-2' away from the tree trunk in order to avoid a conflict with a taproot.
- G. Grade Changes in root zones can cause significant damage and death of trees. Raising the grade can suffocate roots; lowering the grade can be detrimental as valuable feeder roots are destroyed. If enough larger roots are removed, the tree may pose a risk from reduced stability. Changing the grade within the root zone of any tree on the site shall be avoided and shall be approved by the Project Manager.

#### 3.06 DEWATERING AND WATER CONTROL

- A. The Contractor shall not divert storm drainage or sewer flow through any portion of new sewer or any other new facility until after that portion of the pipeline to be used has been field-acceptance tested in accordance with the Specifications, and until specific written approval from the Project Manager has been received. No direct water from construction activities shall be diverted to new or existing sanitary sewer.
- B. Maintain excavations free from water while construction is in progress. Keep trenches and other areas free from water as required to permit continuous progress of, or to prevent damage to, the work or the work of others.

### 3.07 FISH AND WILDLIFE HABITAT

- A. The requirements of local, state, and federal agencies charged with wildlife and fish protection shall be adhered to by the entire construction work force.
- B. <u>All equipment to be used in the work shall be cleaned prior to mobilization to the site</u>, to prevent noxious and non-native seed contamination of the site.

#### 3.08 EROSION CONTROL

- A. Execute the approved ECP.
- B. Temporary Sediment Fences:
  - 1. Filter fabric fence shall have a minimum vertical burial of 6 inches. All excavated material from filter fence installation shall be firmly re-deposited along the entire trenched area on the uphill side of the fence.
  - 2. The filter fabric shall be installed to follow the contours where feasible. The fence posts shall be spaced a maximum of 6 feet apart and driven securely into

- the ground a minimum of 24 inches.
- 3. Sediment fences shall be inspected by the Contractor immediately after each rainfall and at least daily during prolonged rainfall. Any required repairs, relocations or additions shall be made immediately.
- 4. At no time shall more than one foot of sediment be allowed to accumulate behind a sediment fence. Sediment should be removed or regraded into slopes, and the sediment fences repaired and reestablished as needed.
- C. Straw Bale Sediment Barrier/Bio-Filter Bags: This method may be used to divert runoff around active work areas or into sediment filtration/sedimentation areas.
  - 1. Bio-filter bags can be used in drainage ditches and/or swales.
  - 2. Straw bales and bio-filter bags shall be secured with stakes driven through them and into the ground to a minimum depth of 12 inches. Straw bales shall be keyed into the existing ground 2 to 4 inches.
  - 3. At no time shall more than one foot of sediment be allowed to accumulate behind a straw bale sediment barrier and/or bio-filter bag system. Sediment should be removed or regraded into slopes, or new lines of barriers installed uphill of sediment-laden barriers.

# D. Plastic Sheeting:

- 1. Spoils piles and exposed earth slopes shall be covered in wet weather or if wet weather is anticipated. Plastic sheeting shall be installed and maintained tightly in place by using sandbags or tires on ropes with a maximum 10 feet grid spacing in all directions. All seams shall be taped or weighted down full length and there shall be at least 12-inch overlap of all seams. For seams parallel to the slope contour, the uphill sheet shall overlap the downhill sheet. No runoff shall be allowed to run under the plastic covering.
- 2. Drainage from areas covered by plastic sheeting shall be controlled such that no discharge occurs directly onto uncontrolled, disturbed areas of the construction site.
- E. Excavated materials shall be placed on the uphill side of the excavation except when there are overriding safety requirements or lack of available space. In no case shall excavated material be placed in streams, watercourses, or wetlands without required permits.
- F. Vegetative Buffer Protection: Areas within or adjacent to the project may have steep slopes, or buffers of associated streams, watercourses, or wetlands that need to be avoided and protected from disturbance. The Contractor shall limit disturbance to existing vegetation in these areas to the extent possible. In no case shall the Contractor cause disturbance in associated streams, watercourses, or wetlands without required permits.
- G. Under no circumstance shall Contractor's vehicles or equipment enter a property adjacent to a stream, watercourse, or other storm and surface water facility, or a wetland without

- an ECP having been approved by the Project Manager and implemented.
- H. The Contractor shall not drag, drop, track, or otherwise place or deposit, or permit to be deposited, mud, dirt, rock or other such debris into any part of the public storm or surface water system, or any part of a private storm or surface water system. The Contractor at the Contractor's expense shall immediately remove any such deposit of material. No material shall be washed or flushed into any part of the storm or surface water system without erosion control measures installed to the satisfaction of the Project Manager.
- I. The Contractor shall maintain the facilities and techniques contained in the approved ECP so as to continue to be effective during the construction or other permitted activity. If the facilities and techniques approved in an ECP are not effective or sufficient as determined by the Project Manager, the Contractor shall revise the plan upon notification by the Project Manager. Upon approval of the revised plan by the Project Manager, the Contractor shall immediately implement the additional facilities and techniques. In cases where erosion is occurring, the Project Manager may require the Contractor to install interim control measures prior to submittal of the revised ECP.
- J. The Contractor shall ensure that all necessary pollution control equipment, supplies, or materials are available to implement the ECP.
- K. Filter fabric fences, sediment barriers and other erosion control devices shall be removed by the Contractor when they have served their useful purpose, but not before the upslope area has been permanently protected and stabilized.

# 3.09 CULTURAL RESOURCES

- A. Attention is directed to the National Historic Preservation Act of 1966 and 36 CFR 800, which provide for the preservation of potential historical, architectural, archaeological or cultural resources (hereinafter "cultural resources").
- B. The Project Manager intends to conform to the applicable requirements of the National Historic Preservation Act of 1966 as it relates to the preservation of cultural resources and fair compensation to the Contractor for delays resulting from such cultural resources investigations.
- C. Monitoring: In the event potential cultural resources are uncovered during subsurface excavations at the worksite, the following procedures will be instituted:
  - 1. Project Manager will issue a verbal work suspension directing the Contractor to cease all construction operations at the location of a potential cultural resources discovery. Project Manager will contact a professional archaeologist to evaluate the significance of the find. A written work suspension order will be issued within four hours of the verbal work suspension order.
  - 2. Such work suspension will be effective until such time as the qualified archaeologist can evaluate the potential cultural resources for their significance and make recommendations to the State Historic Preservation Officer. Any work suspension direction will contain the following:
  - a) A clear description of the work to be suspended.

- b) Any instructions regarding issuance of further orders by the Contractor for material services.
- c) Specific direction to the Contractor to minimize the work suspension costs (i.e., work elsewhere while archaeologist is evaluating find).
- d) Estimated duration of the temporary suspension.
- 3. If the archaeologist determines the cultural resource is eligible to be nominated to the National Register of Historic Places, Project Manager may extend the duration of the work suspension order in writing.
- 4. Equitable adjustment of the construction Contract time will be made for temporarily suspended work in accordance with the General Conditions.

# 3.10 FINES

D. Contractor shall be responsible for all fines incurred from non-compliance with regulations of governing authorities.

# SECTION 01650 - STARTUP OF SYSTEMS/COMMISSIONING

#### PART 1 - GENERAL

### 1.01 DESCRIPTION

- A. This section includes general requirements for the commissioning of the Work, starting, testing, and operating the completed Work, including systems and equipment, until substantial completion is achieved and the completed Work, including systems or equipment, is accepted by the Project Manager.
- B. Contractor shall cooperate, coordinate and schedule activities with the Project Manager in the operation, maintenance, and adjustment of the Work.

# 1.02 DEFINITIONS

- A. Commissioning: The series of activities necessary to bring a component, system, or unit process from installation to readiness for substantial completion. Commissioning includes, but is not limited to, field testing, dry testing, wet testing, performance testing, manufacturer's checkout, start-up, and operational demonstration.
- B. Start-up: Narrowly defined as placing a component, system, or unit process on-line. Can be a commissioning activity or a normal operating activity.
- C. Operational Demonstration: A commissioning activity performed by the Contractor wherein the Contractor operates and maintains a fully functional component, system, or unit process for a period of time after stable operation has been achieved.
- D. Field Testing: Testing performed on-site by the Contractor to satisfy requirements of the manufacturer and Contract Documents.
- E. Manufacturer's Checkout: Field inspection, testing, adjustments, and sign off by the manufacturer's representative, indicating that the component, system or unit process meets the manufacturer's requirements.

## **PART 2 - MATERIALS**

### 2.01 SUBMITTALS

A. Field Installation Reports - Submit reports by manufacturer's representative.

#### **PART 3 - EXECUTION**

# 3.01 EXAMINATION AND VERIFICATION OF CONDITION

- A. The Contractor shall inspect systems and equipment prior to each start-up and verify their readiness for start-up. Conditions hazardous to equipment or personnel shall be corrected by the Contractor prior to start-up of equipment.
  - 1. Start-up operations shall not proceed using temporary power or temporary

instrumentation and control wiring. All electrical and control connections shall be permanent and complete, and all such electrical components and equipment fully functional.

- 2. Use of repair parts during start-up operations shall not be permitted, except in such situations where the actual on-site verification of such repair parts' operability is specified.
- 3. The Contractor shall verify that all copies of the Maintenance and Operating Instructions have been received, and are acceptable, and the only outstanding item is the field verification of the Instructions.

# 3.02 PREPARATION

- A. Prior to start-up of equipment or systems, all necessary test equipment shall be in place and operable.
- B. Contractor shall ensure manufacturer's representative(s) shall be present for the initial startup of systems or equipment.
- C. The Contractor shall request permission to start-up equipment, including electrical gear, and notify the Project Manager of the start-up.
  - 1. The Start-Up Request shall be submitted to the Project Manager a minimum of 72 hours before the scheduled start-up. Requests shall be made during normal working hours.
  - 2. The Contractor shall obtain the approved Start-Up Request prior to the system or equipment start-up.
  - 3. If training is to be conducted in conjunction with the start-up this should be indicated on the Start-Up Request.
- D. Normal installation checks, such as for rotation, are not considered start-ups and do not normally require start-up notification.
  - 1. All electrical apparatus, which is energized, shall be clearly marked.

### 3.03 CONDUCT OF START-UP AND COMMISSIONING

#### A. Start-up

- 1. Contractor shall ensure all initial start-ups of equipment or systems shall be performed under the technical direction of the manufacturer's representative.
- 2. Any lack of readiness of associated systems or failure of a system or equipment previously started prior to the date of final acceptance of the Project shall require additional initial start-up service of the manufacturer to be performed.
- 3. The Contractor shall repair, replace or modify any equipment or system, which fails to perform.
- B. The Contractor shall commission all work.

- C. The Contractor is responsible for the performance and operation of the systems and equipment during commissioning.
- D. The Contractor shall make all adjustments and corrections necessary to achieve normal, stable operation of systems.
- E. Any failures of equipment or systems operated under the direction of the Contractor shall be considered deficiencies and shall be corrected.

# 3.04 QUALITY CONTROL

- A. Manufacturer's Representative Reports.
  - 1. Contractor shall ensure the manufacturer's representative prepare a daily report on each site visit for each system or item of equipment inspected, adjusted, started-up, or worked on.
  - 2. The report shall state the purpose of the visit, the representative's observations and conclusions, and recommendations for further visits or action.
  - 3. The reports shall be submitted to the Project Manager within three (3) days of the visit.

# SECTION 01730 - MAINTENANCE AND OPERATING INSTRUCTIONS

#### **PART 1 - GENERAL**

### 1.01 DESCRIPTION

- A. Work under this Section includes submittal of Maintenance and Operating Instructions.
- B. The Contractor shall prepare and furnish Maintenance and Operating Instructions for installation, maintenance and operation of all equipment.

### 1.02 DEFINITIONS

- A. The Maintenance and Operating Instructions will be used by the Owner for both routine and major maintenance. Maintenance and Operating Instructions shall include complete and specific information for use by the Owner's operating and maintenance personnel. The Contractor is responsible for collecting, collating, and assembling the Maintenance and Operating Instructions.
- B. Depot-level Instructions are detailed instructions that would be used by the Manufacturer's factory, repair depot, or authorized service center to repair or rebuild an item of equipment or a component, part, or subassembly of an item of equipment deemed by the Manufacturer as "not user serviceable". These instructions will be used for both ordinary and major maintenance, and enable the Project Manager to overhaul or repair equipment in the event parts become unavailable.
- C. Original Equipment Manufacturer (O.E.M.) is the company that manufactured an item of equipment; or a component, part, or subassembly of an item of equipment.
- D. Original/First Generation Copies are direct reproductions of the Manufacturer's master printing document(s).

## **PART 2 - MATERIALS**

# 2.01 SUBMITTALS

#### A. Procedure

- 1. The Contractor shall prepare an initial submittal of three (3) original/first generation copies of Maintenance and Operating Instructions.
- 2. All Maintenance and Operating Instructions shall be specific for the equipment. Any portions of the submittal not pertinent to the equipment or component shall be crossed out with a bold line or marked with "does not apply", or clearly identify (and without question) the portions of the submittal that are pertinent. Note: Highlighting of submittals is not acceptable.
- B. Maintenance and Operating Instructions shall be fully depot-level as described in this Section and shall be complete enough to fully delineate the internal functions of all purchased encapsulated components or similar "black box" devices to the satisfaction of the Project Manager.

- 1. Certain information, also categorized under this Section as Maintenance and Operating Instructions, is to be submitted with the product data to provide the Project Manager with information regarding the incorporation of the equipment into the work and with functional data to evaluate equipment operation. The requirements for this information are also identified in this Section and are to be incorporated as part of the Maintenance and Operating Instructions submittal.
- 2. The Maintenance and Operating Instructions shall contain, unless otherwise specified, the following information.
  - a) Manufacturer's Data: Include general descriptive bulletins, brochures, or catalog sheets used to describe the equipment.
  - b) Operating Instructions / Operating Sequence Descriptions: These shall be complete, detailed written descriptions of the operating sequence of all control systems and operations in all modes. The descriptions shall be specifically prepared for this work and shall be fully referenced to control diagrams and system components. The descriptions shall include start-up and shut-down operations under manual, automatic and emergency (alarm) conditions and any alternate operating modes.

    Descriptions of system reactions and sequencing including the operation of switches, lights, timers, relays, contacts, valves, motors, and equipment components shall be included. Interlock functions shall be fully described including system safety functions.
  - c) Manufacturer's Instructions: This shall include instruction for storage, installation, routine preventive maintenance, and lubrication. This data shall include instructions that describe the proper procedure for moving, supporting, and anchoring of equipment, including tolerances for settings and adjustment. Also included shall be the storage requirements and procedures to protect products prior to installation; and, once installed, prior to start-up/periods of prolonged shut-down; and proper storage of repair parts.
  - d) Parts List: Include assembly, exploded view illustrations, or sectional drawings with all parts identified. Part listings shall include descriptions, quantity (per assembly) required, and original equipment manufacturer's part numbers.
  - e) Supplier Data: Provide addresses, telephone numbers, and names of contact persons for the equipment manufacturer and manufacturer's representative. Include both regional (local) and home offices.
  - f) Warranties and Guarantees: Include terms and conditions of the warranty. Include the manufacturer's express warranty and any special express warranties in addition to the general warranty. Draft warranties shall be submitted with the shop drawing submittals. Final warranties will become effective on the date of substantial completion applicable to the named equipment. Copies of the approved draft warranties are to be included in the initial Maintenance and Operating Instructions submittal. Following substantial completion, copies of the executed final warranties shall be provided to the Project Manager for insertion into the final Maintenance and Operating Instructions.

# **PART 3 - EXECUTION**

### 3.01 FIELD VERIFICATION

- A. The Contractor shall verify the accuracy of Maintenance and Operating Instructions by visual and physical inspection of the installed equipment. The Contractor shall:
  - 1. Perform field verification in the presence of the Project Manager.
  - 2. Do not perform field verification until the Maintenance and Operating Instructions have received an acceptable disposition from the Project Manager.
  - 3. Perform field verification after successful completion of Start-up, Testing, Adjusting, and Balancing.
  - 4. Physically trace and document as required, all wiring and piping.
  - 5. Visually inspect equipment and components and compare configurations and nameplate information to Maintenance and Operating Instructions.
  - 6. Submit any changes, additions, or deletions to the Maintenance and Operating Instructions identified during field verification.

# SECTION 033000 - CAST-IN-PLACE CONCRETE

# **PART 1 - GENERAL**

### 1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Reference General Structural Notes in the structural drawings for additional information.

### 1.02 SUMMARY

- A. Section includes cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes.
  - 1. Footings.
  - 2. Slabs-on-grade.
  - 3. Suspended slabs.
- B. Related Requirements:
  - 1. Section 31 20 00 "Earth Moving" for drainage fill under slabs-on-grade.

## 1.03 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash, slag cement, other pozzolans, and silica fume; materials subject to compliance with requirements.
- B. W/C Ratio: The ratio by weight of water to cementitious materials.

### 1.04 ACTION SUBMITTALS

- A. Product Data: For each type of product.
- B. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
  - 1. Reference General Structural Notes for mixing water to be withheld for later addition at Project site.
- C. Steel Reinforcement Shop Drawings:

- 1. Steel Reinforcement shop drawings shall contain sufficient detail and information to allow complete fabrication, bending, and placement of steel reinforcement without reference to the contract drawings either on the fabrication shop floor or at the project site. The detailer shall generate all shop drawing fabrication and installation details from the structural drawings and specifications. The use of reproductions or photocopies of the contract drawings shall not be permitted. When CAD or REVIT files are provided, it is the responsibility of the detailers to remove all information not directly relevant to the creation of the placing drawings as well as all references to the outside sources of the files.
  - a. Include bar sizes, lengths, material, grade, bar schedules, stirrup spacing, bent bar diagrams, bar arrangement, splices and laps, mechanical and welded connections, tie spacing, hoop spacing, and supports for concrete reinforcement. Bar arrangement to identify size, shape, grade, and location of steel reinforcement.
  - b. Provide details of fabrication, bending, and placement, prepared according to ACI SP-66 "ACI Detailing Manual." Include special reinforcement required for openings through concrete structures.
  - c. Shop drawings shall include plans for all slabs to show bar arrangement. Plans to include special reinforcement required for openings through concrete structures
  - d. Shop drawing re-submittals shall clearly identify all revisions to previous submittals.
    - 1) Heavy ink clouded outlines (revision clouds) shall be drawn around revised areas of individual sheets.
    - 2) Engineer will not review information outside of revision clouds on resubmitted drawings.
- 2. Location of construction joints is subject to approval of the Engineer.
- D. Samples: For waterstops.

## 1.05 INFORMATIONAL SUBMITTALS

A. Material Certificates: For each of the following, signed by manufacturers:

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- 1. Cementitious materials.
- 2. Admixtures.
- 3. Form materials and form-release agents.
- 4. Steel reinforcement and accessories.
- 5. Waterstops.
- 6. Curing compounds.

- 7. Slab treatments.
- 8. Bonding agents.
- 9. Adhesives.
- 10. Repair materials.

## 1.06 QUALITY ASSURANCE

- A. Installer Qualifications: A qualified installer who employs on Project personnel qualified as ACI-certified Flatwork Technician and Finisher and a supervisor who is an ACI-certified Concrete Flatwork Technician.
- B. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.

# 1.07 DELIVERY, STORAGE, AND HANDLING

- A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage.
- B. Waterstops: Store waterstops under cover to protect from moisture, sunlight, dirt, oil, and other contaminants.

# 1.08 FIELD CONDITIONS

- A. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
  - 1. When average high and low temperature is expected to fall below 40 deg F (4.4 deg C) for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301 (ACI 301M).
  - 2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
  - 3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.
- B. Hot-Weather Placement: Comply with ACI 301 (ACI 301M) and ACI 305.1 (ACI 305.1M), and as follows:

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1. Maintain concrete temperature below 90 deg F (32 deg C) at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.

2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

# **PART 2 - PRODUCTS**

#### 2.01 CONCRETE, GENERAL

- ACI Publications: Comply with the following unless modified by requirements in the A. Contract Documents:
  - 1. ACI 301 (ACI 301M).
  - 2. ACI 117 (ACI 117M).

#### 2.02 FORM-FACING MATERIALS

- Rough-Formed Finished Concrete: Plywood, lumber, metal, or another approved material. A. Provide lumber dressed on at least two edges and one side for tight fit.
- В. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch (19 by 19 mm), minimum.
- C. Form-Release Agent: Commercially formulated form-release agent that does not bond with, stain, or adversely affect concrete surfaces and does not impair subsequent treatments of concrete surfaces.
  - 1. Formulate form-release agent with rust inhibitor for steel form-facing materials.

#### 2.03 STEEL REINFORCEMENT

Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (Grade 420), deformed. A.

#### 2.04 REINFORCEMENT ACCESSORIES

- Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and A. fastening reinforcing bars and welded-wire reinforcement in place. Manufacture bar supports from steel wire, plastic, or precast concrete according to CRSI's "Manual of Standard Practice," of greater compressive strength than concrete and as follows:
  - 1. Use CRSI Class 1 plastic-protected steel wire or CRSI Class 2 stainless-steel bar supports.

#### 2.05 **CONCRETE MATERIALS**

Source Limitations: Obtain each type or class of cementitious material of the same brand A. from the same manufacturer's plant, obtain aggregate from single source, and obtain admixtures from single source from single manufacturer.

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- В. Cementitious Materials:
  - 1. Portland Cement: ASTM C 150/C 150M, Type I/II gray.
  - 2. Fly Ash: ASTM C 618, Class F or C.
  - 3. Slag Cement: ASTM C 989/C 989M, Grade 100 or 120.
- C. Normal-Weight Aggregates: ASTM C 33/C 33M.
  - 1. Maximum Coarse-Aggregate Size: 3/4 inch (19 mm) nominal.
- D. Air-Entraining Admixture: ASTM C 260/C 260M.
- E. Chemical Admixtures: Certified by manufacturer to be compatible with other admixtures and that do not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
  - 1. Water-Reducing Admixture: ASTM C 494/C 494M, Type A.
  - 2. Retarding Admixture: ASTM C 494/C 494M, Type B.
  - 3. Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type D.
  - 4. High-Range, Water-Reducing Admixture: ASTM C 494/C 494M, Type F.
  - 5. High-Range, Water-Reducing and Retarding Admixture: ASTM C 494/C 494M, Type G.
  - 6. Plasticizing and Retarding Admixture: ASTM C 1017/C 1017M, Type II.
- F. Water: ASTM C 94/C 94M and potable and ASTM C1602/C1602M.

#### 2.06 WATERSTOPS

- Self-Expanding Butyl Strip Waterstops: Manufactured rectangular or trapezoidal strip, A. butyl rubber with sodium bentonite or other hydrophilic polymers, for adhesive bonding to concrete, 1-1/4 by 1/2 inch (31 by 12 mm).
  - Manufacturers: Subject to compliance with requirements, provide products by the 1. following:
    - CETCO, a Minerals Technologies company. a.
    - b. Approved equal.

#### 2.07 **CURING MATERIALS**

Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, A. weighing approximately 9 oz./sq. yd. (305 g/sq. m) when dry.

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- B. Moisture-Retaining Cover: ASTM C 171, polyethylene film or white burlap-polyethylene sheet.
- C. Water: Potable.

### 2.08 RELATED MATERIALS

- A. Bonding Agent: ASTM C 1059/C 1059M, Type II, nonredispersible, acrylic emulsion or styrene butadiene.
- B. Epoxy Bonding Adhesive: ASTM C 881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class suitable for application temperature and of grade to suit requirements, and as follows:
  - 1. Types IV and V, load bearing, for bonding hardened or freshly mixed concrete to hardened concrete.

### 2.09 REPAIR MATERIALS

- A. Repair Overlayment: Cement-based, polymer-modified, self-leveling product that can be applied in thicknesses from 1/4 inch (6.4 mm) and that can be filled in over a scarified surface to match adjacent floor elevations.
  - 1. Cement Binder: ASTM C 150/C 150M, portland cement or hydraulic or blended hydraulic cement as defined in ASTM C 219.
  - 2. Primer: Product of topping manufacturer recommended for substrate, conditions, and application.
  - 3. Aggregate: Well-graded, washed gravel, 1/8 to 1/4 inch (3.2 to 6 mm) or coarse sand as recommended by topping manufacturer.
  - 4. Compressive Strength: Not less than 4000 psi (34.5 MPa) at 28 days when tested according to ASTM C 109/C 109M.

# 2.10 CONCRETE MIXTURES, GENERAL

- A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301 (ACI 301M).
  - 1. Reference the General Structural Notes for compressive strength, maximum W/C ratio, and air content.
- B. Cementitious Materials: Refer to General Structural Notes.
- C. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.
- D. Admixtures: Use admixtures according to manufacturer's written instructions.

1. Use water-reducing admixture in concrete, as required, for placement and workability.

#### 2.11 FABRICATING REINFORCEMENT

A. Fabricate steel reinforcement according to CRSI's "Manual of Standard Practice."

#### 2.12 **CONCRETE MIXING**

- Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to A. ASTM C 94/C 94M, and furnish batch ticket information.
  - When air temperature is between 85 and 90 deg F (30 and 32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.

### **PART 3 - EXECUTION**

#### 3.01 FORMWORK INSTALLATION

- Design, erect, shore, brace, and maintain formwork, according to ACI 301 (ACI 301M), A. and under the supervision of the formwork engineer, registered in the project state, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.
- B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117 (ACI 117M).
- C. Limit concrete surface irregularities, designated by ACI 347 as abrupt or gradual, as follows:
  - 1. Class C, 1/2 inch (13 mm).
- D. Construct forms tight enough to prevent loss of concrete mortar.
- E. Construct forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast-concrete surfaces.
  - 1. Install keyways, recesses, and the like, for easy removal.
  - 2. Do not use rust-stained steel form-facing material.
- F. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.

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G. Chamfer exterior corners and edges of permanently exposed concrete.

- H. Form openings, offsets, sinkages, keyways, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.
- I. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.
- J. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.
- K. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

#### 3.02 EMBEDDED ITEM INSTALLATION

- A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.
  - 1. Install anchor bolts, accurately located, to elevations required and complying with tolerances in Section 7.5 of AISC 303.
  - 2. Install hatch and cable tray in accordance with manufacturer requirements

#### 3.03 REMOVING AND REUSING FORMS

- A. Refer to General Structural Notes. Removal time shall not be less than the following:
  - 1. Twelve hours minimum for slab-on-grade sides.
  - 2. Four days minimum for elevated structural slabs.
- В. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material are not acceptable for exposed surfaces. Apply new form-release agent.
- C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by Architect.

#### 3.04 SHORING AND RESHORING INSTALLATION

A. Shoring is the contractor's responsibility and shall conform to ACI 347R-14 and ACI 347.2-17. Comply with ACI 318 (ACI 318M) and ACI 301 (ACI 301M) for design, installation, and removal of shoring and reshoring.

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1. Formwork shall not be removed from horizontal members before concrete strength is at least 70 percent of design strength, as determined by field cured cylinders. In addition, shoring shall not be removed sooner than the following cumulative time periods with surrounding temperature greater than or equal to 50 degrees Fahrenheit:

- a. Slab-on-Grade sides: 12 hours.
- b. Elevated Structural Slabs: 28 days.
- 2. Do not remove shoring until measurement of slab tolerances is complete.
- B. Plan sequence of removal of shores to avoid damage to concrete.

### 3.05 STEEL REINFORCEMENT INSTALLATION

- A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other foreign materials that reduce bond to concrete.
- C. Accurately position, support, and secure reinforcement against displacement. Locate and support reinforcement with bar supports to maintain minimum concrete cover. Do not tack weld crossing reinforcing bars.
- D. Set wire ties with ends directed into concrete, not toward exposed concrete surfaces.

#### 3.06 JOINTS

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Engineer.
  - 1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints unless otherwise indicated.
  - 2. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.

### 3.07 WATERSTOP INSTALLATION

A. Self-Expanding Strip Waterstops: Install at locations indicated, according to manufacturer's written instructions, adhesive bonding, mechanically fastening, and firmly pressing into place. Install in longest lengths practicable.

## 3.08 CONCRETE PLACEMENT

A. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301 (ACI 301M).

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1. Do not add water to concrete after adding high-range water-reducing admixtures to mixture.

- B. Deposit concrete continuously in one layer or in horizontal layers of such thickness that no new concrete is placed on concrete that has hardened enough to cause seams or planes of weakness. If a section cannot be placed continuously, provide construction joints as indicated. Deposit concrete to avoid segregation.
  - 1. Deposit concrete in horizontal layers of depth not to exceed formwork design pressures and in a manner to avoid inclined construction joints.
  - 2. Consolidate placed concrete with mechanical vibrating equipment according to ACI 301 (ACI 301M).
  - 3. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations to rapidly penetrate placed layer and at least 6 inches (150 mm) into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to lose plasticity. At each insertion, limit duration of vibration to time necessary to consolidate concrete and complete embedment of reinforcement and other embedded items without causing mixture constituents to segregate.
- C. Deposit and consolidate concrete for slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
  - 1. Consolidate concrete during placement operations, so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
  - 2. Maintain reinforcement in position on chairs during concrete placement.
  - 3. Screed slab surfaces with a straightedge and strike off to correct elevations.
  - 4. Slope surfaces uniformly to drains where required.
  - 5. Begin initial floating using bull floats or darbies to form a uniform and opentextured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.

### 3.09 FINISHING FORMED SURFACES

A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections that exceed specified limits on formed-surface irregularities.

### 3.10 FINISHING SLABS

- A. General: Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
- B. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power-driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture.

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- 1. Apply float finish to Base Slab.
- C. Broom Finish: Apply a broom finish to Top Slab and Apron.
  - 1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with Architect before application.

## 3.11 MISCELLANEOUS CONCRETE ITEM INSTALLATION

A. Filling In: Fill in holes and openings left in concrete structures after work of other trades is in place unless otherwise indicated. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete the Work.

### 3.12 CONCRETE PROTECTING AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and ACI 305.1 (ACI 305.1M) for hot-weather protection during curing.
- B. Formed Surfaces: Cure formed concrete surfaces, including underside of supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for remainder of curing period.
- C. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.
- D. Cure concrete according to ACI 308.1, by one or a combination of the following methods:
  - 1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
    - a. Water.
    - b. Continuous water-fog spray.
    - c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch (300-mm) lap over adjacent absorptive covers.
  - 2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches (300 mm), and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period, using cover material and waterproof tape.

#### 3.13 CONCRETE SURFACE REPAIRS

- A. Defective Concrete: Repair and patch defective areas when approved by Engineer. Remove and replace concrete that cannot be repaired and patched to Engineer's approval.
- B. Patching Mortar: Mix dry-pack patching mortar, consisting of 1 part portland cement to 2-1/2 parts fine aggregate passing a No. 16 (1.18-mm) sieve, using only enough water for handling and placing.
- C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.
  - 1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch (13 mm) in any dimension to solid concrete. Limit cut depth to 3/4 inch (19 mm). Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent.
  - 2. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement so that, when dry, patching mortar matches surrounding color. Patch a test area at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.
  - 3. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by Engineer.
- D. Repairing Unformed Surfaces: Test unformed surfaces, such as slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.
  - 1. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch (0.25 mm) wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
  - 2. After concrete has cured at least 14 days, correct high areas by grinding.
  - 3. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.
  - 4. Repair defective areas, except random cracks and single holes 1 inch (25 mm) or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least a 3/4-inch (19-mm) clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mixture as original concrete, except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.

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- 5. Repair random cracks and single holes 1 inch (25 mm) or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.
- E. Perform structural repairs of concrete, subject to Engineer's approval, using epoxy adhesive and patching mortar.
- F. Repair materials and installation not specified above may be used, subject to Engineer's approval.

## 3.14 FIELD QUALITY CONTROL

- A. Special Inspections: Owner will engage a special inspector and qualified testing and inspecting agency to perform field tests and inspections and prepare test reports.
  - 1. Steel reinforcement placement.
  - 2. Verification of use of required design mixture.
  - 3. Concrete placement, including conveying and depositing.
  - 4. Curing procedures and maintenance of curing temperature.
  - 5. Verification of concrete strength before removal of shores and forms from slabs.
- B. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172/C 172M shall be performed according to the following requirements:
  - 1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd. (4 cu. m), but less than 25 cu. yd. (19 cu. m), plus one set for each additional 50 cu. yd. (38 cu. m) or fraction thereof.
    - a. When frequency of testing provides fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
- C. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
  - 1. Air Content: ASTM C 231/C 231M, pressure method, for normal-weight concrete; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
  - 2. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F (4.4 deg C) and below or 80 deg F (27 deg C) and above, and one test for each composite sample.

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- 3. Compression Test Specimens: ASTM C 31/C 31M.
- a. Cast and laboratory cure two sets of two standard cylinder specimens for each composite sample.
- 4. Compressive-Strength Tests: ASTM C 39/C 39M; test one set of two laboratory-cured specimens at 7 days and one set of two specimens at 28 days.
  - a. A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.
- 5. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.
- 6. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi (3.4 MPa).
- 7. Test results shall be reported in writing to Engineer, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
- 8. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Engineer but will not be used as sole basis for approval or rejection of concrete.
- 9. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42/C 42M or by other methods as directed by Engineer.
- 10. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
- 11. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.

## **END OF SECTION**

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# SECTION 051200 - STRUCTURAL STEEL FRAMING

# **PART 1 - GENERAL**

### 1.01 SUMMARY

- A. Section Includes:
  - 1. Structural stainless steel.
  - 2. Anchor Bolts

## 1.02 DEFINITIONS

A. Structural Steel: Elements of the structural frame indicated on Drawings and as described in ANSI/AISC 303.

## 1.03 ACTION SUBMITTALS

- A. Product Data:
  - 1. Structural-stainless steel materials.
  - 2. Perforated metal.
- B. Shop Drawings: Show fabrication of structural steel components.

## 1.04 INFORMATIONAL SUBMITTALS

- A. Welding certificates.
- B. Mill test reports for structural-stainless steel materials, including chemical and physical properties.

# 1.05 QUALITY ASSURANCE

A. Welding Qualifications: Qualify procedures and personnel in accordance with AWS D1.6/D1.6M.

## **PART 2 - PRODUCTS**

# 2.01 PERFORMANCE REQUIREMENTS

A. Comply with applicable provisions of the following specifications and documents:

- 1. ANSI/AISC 303.
- 2. ANSI/AISC 360.

## 2.02 STRUCTURAL- STEEL MATERIALS

- A. Angles Shapes: ASTM A276 AISI 316 (UNS S31600 S31603), Grade 30
- B. Plate and Bar: ASTM A276, AISI 316 (UNS S31600 S31603), Grade 30
- C. Perforated Metal: Standard stainless steel mesh as provided by equipment and stand manufacturer.
- D. Welding Electrodes: Comply with AWS requirements.

## 2.03 ANCHOR BOLTS

- A. Unheaded Anchor Bolts: ASTM F1554, Grade 36.
  - 1. Configuration: Hooked.
  - 2. Finish: Hot-dip zinc coating, ASTM A153/A153M, Class C.

### 2.04 FABRICATION

A. Structural Steel: Fabricate and assemble in shop to greatest extent possible. Fabricate in accordance with ANSI/AISC 303 and to ANSI/AISC 360.

### 2.05 SHOP CONNECTIONS

A. Weld Connections: Comply with AWS D1.6/D1.6M for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.

## 2.06 SOURCE QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified testing agency to perform shop tests and inspections.
  - 1. Allow testing agency access to places where structural-steel work is being fabricated or produced to perform tests and inspections.
  - 2. Welded Connections: Visually inspect shop-welded connections in accordance with AWS D1.6/D1.6M and the following inspection procedures, at testing agency's option:
    - a. Liquid Penetrant Inspection: ASTM E165/E165M.

- b. Magnetic Particle Inspection: ASTM E709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration are not accepted.
- c. Ultrasonic Inspection: ASTM E164.
- d. Radiographic Inspection: ASTM E94/E94M.

### **PART 3 - EXECUTION**

#### 3.01 EXAMINATION

- A. Verify, with certified steel erector present, elevations of concrete-bearing surfaces and locations of anchor bolts, and other embedments for compliance with requirements.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

## 3.02 ERECTION

- A. Set structural steel accurately in locations and to elevations indicated and in accordance with ANSI/AISC 303 and ANSI/AISC 360.
- B. Maintain erection tolerances of structural steel within ANSI/AISC 303.

# 3.03 FIELD QUALITY CONTROL

- A. Special Inspections: Owner will engage a special inspector to perform the following special inspections:
  - 1. Verify structural-steel materials and inspect steel frame joint details.
  - 2. Verify weld materials and inspect welds.
  - 3. Verify connection materials and inspect bolted connections.
- B. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.

## **END OF SECTION**

## SECTION 260500 - COMMON WORK RESULTS FOR ELECTRICAL

### **PART 1 - GENERAL**

### 1.01 DESCRIPTION

- A. The General and Supplementary Conditions are a part of the requirements for the work under this Division of the Specifications.
- B. The general scope of this project is to replace two sewage pumps with new pumps, along with replacing the control panel. New conductors, conduit and circuit breaker are also to be furnished and installed. The alarm contactor panel is to be inspected as part of this scope to be considered for replacement.
- C. The sump pit can be considered a Class 1 Division 1 Hazardous Location, as the presence of flammable gasses and corrosive vapors are expected to exist. The pump house itself is not considered a hazardous location because of seals on sump pit lid.

### 1.02 WORK INCLUDED

- A. Provide labor and materials required to install, test and place into operation the electrical systems as called for in the Contract Documents, and in accordance with applicable codes and regulations.
- B. Provide labor, materials, and accessories required to provide complete, operating electrical systems. Labor, materials or accessories not specifically called for in the Contract Documents, but required to provide complete, operating electrical systems shall be provided without additional cost to the Owner.

## 1.03 QUALITY ASSURANCE

- A. Comply with the current applicable codes, ordinances, and regulations of the authority or authorities having jurisdiction, the rules, regulations and requirements of the utility companies serving the project and the Owner's insurance underwriter.
- B. Drawings, specifications, codes and standards are minimum requirements. Where requirements differ, the most stringent apply.
- C. Should any change in drawings or specifications be required to comply with governing regulations, notify the Engineer prior to submitting bid.
- D. All electrical equipment, materials, devices and installations shall meet or exceed minimum requirements of ADA, ANSI, ASTM, IEEE, IES, NEC, NEMA, NETA, NFPA, OSHA, SMACNA, UL, and the State Fire Marshal.
- E. Execute work in strict accordance with the best practices of the trades in a thorough, substantial, work-person like manner by competent work people. Provide a competent, experienced, full-time Superintendent who is authorized to make decisions on behalf of the Contractor.
- F. Equipment shall be certified for use in the State of the project and shall meet the State energy code.

## 1.04 ABBREVIATIONS AND DEFINITIONS

#### A. Abbreviations:

- 1. ADA Americans with Disabilities Act
- 2. ANSI American National Standards Institute
- 3. ASA Acoustical Society of America
- 4. ASTM American Society for Testing and Materials
- 5. BIL Basic Impulse Level
- 6. CBM Certified Ballast Manufacturers
- 7. ECC Engineer's Control Center
- 8. EIA Electronic Industries Alliance
- 9. ETL Electrical Testing Laboratories, Inc.
- 10. FCC Fire Control Center
- 11. FM Factory Mutual
- 12. IEEE Institute of Electrical and Electronic Engineers
- 13. IES Illuminating Engineering Society
- 14. IPCEA International Power Cable Engineers Association
- 15. LED Light Emitting Diode
- 16. NEC National Electric Code
- 17. NEMA National Electrical Manufacturers Association
- 18. NETA National Electrical Testing Association
- 19. NFPA National Fire Protection Association
- 20. OEM Original Equipment Manufacturer
- 21. OSHA Occupational Safety and Health Administration
- 22. SCC Security Control Center
- 23. SMACNA Sheet Metal and Air Conditioning Contractors National Association
- 24. TIA Telecommunications Industry Association
- 25. UL Underwriters Laboratories

### B. Definitions:

- 1. Where it is stated in these specifications to submit to Engineer for review, refer to architectural General and Supplementary Conditions for proper procedures.
- 2. FURNISH means to supply all materials, labor, equipment, testing apparatus, controls, tests, accessories and all other items customarily required for the proper and complete application.
- 3. INSTALL means to join, unit, fasten, link, attach, set up or otherwise connect together before testing and turning over to Owner, complete and ready for regular operation.
- 4. PROVIDE means to FURNISH and INSTALL.
- 5. AS DIRECTED means as directed by the Engineer, or the Engineer's representative.
- 6. CONCEALED means embedded in masonry or other construction, installed behind wall furring or within drywall partitions, or installed within hung ceilings.
- 7. SUBMIT means submit to Engineer for review.

#### 1.05 GUARANTEE

A. Submit a single guarantee stating that the work is in accordance with the Contract Documents. Guarantee work against faulty and improper material and workmanship for a period of one year from the date of final acceptance by the Owner, except that where guarantees or warranties for longer terms are provided or specified herein, the longer term shall apply. Correct any deficiencies, which occur during the guarantee period, within 24 hours of notification, without additional cost to the Owner, to the satisfaction of the Owner. Obtain similar guarantees from subcontractors, manufacturers, suppliers and subtrade specialists.

## 1.06 USE OF THE ENGINEER'S DRAWINGS

A. The Contractor shall obtain, at the Contractor's expense, from the Engineer, a set of AutoCad or compatible format engineering drawings on electronic media where desired by the Contractor and/or required by the Specifications for use in preparing the shop drawings, coordination drawings and record drawings. The Contractor shall provide to the Engineer a written release of liability acceptable to the Engineer prior to receiving the electronic media.

## **PART 2 - PRODUCTS**

# 2.01 EQUIPMENT AND MATERIALS

A. Provide products and materials that are new, clean, free of defects, and free of damage and corrosion.

- B. Products and materials shall not contain asbestos, PCB, or any other material that is considered hazardous by the Environmental Protection Agency or any other authority having jurisdiction.
- C. Replace materials of less than specified quality and relocate work incorrectly installed as directed by the Engineer at no additional cost to the Owner.
- D. Provide name/data plates on major components of equipment with manufacturer's name, model number, serial number, capacity data and electrical characteristics attached in a conspicuous place.
- E. Install materials and equipment with qualified trades people.
- F. Maintain uniformity of manufacturer for equipment used in similar applications and sizes.
- G. Fully lubricate equipment where required.
- H. Follow manufacturer's instructions for installing, connecting, and adjusting equipment. Provide a copy of such instructions at the equipment during installation.
- I. Where factory testing of equipment is required to ascertain performance, and attendance by the Owner's representative is required to witness such tests, associated travel costs and subsistence shall be paid for by the Contractor.
- J. Equipment capacities, ratings, etc., are scheduled or specified for job site operating conditions. Equipment sensitive to altitude shall be derated with the method of derating identified on the submittals.
- K. Enclosures for electrical equipment installed in mechanical equipment rooms shall be NEMA type 1 gasketed. Enclosures for electrical equipment installed outdoors shall be NEMA type 3R.
- L. Energy consuming equipment shall be certified for use in the State of the project and shall meet the State Energy Code and local energy ordinances.
- M. Electrical products installed in this project shall be listed by a recognized testing laboratory or approved in writing by the local inspection authority as required by governing codes and ordinances.
- N. Materials shall be new, of the best quality, and match or exceed current accepted industry standards. The materials shall be manufactured in accordance with NEMA, ANSI, U.L. or other applicable standards.

### 2.02 SUBSTITUTIONS

- A. Contract Documents are based on equipment manufacturers as called out in the Specifications and indicated on the Drawings. Acceptance of substitute equipment manufacturers does not relieve Contractor of the responsibility to provide equipment and materials, which meet the performance as, stated or implied in the Contract Documents.
- B. Submit proposals to provide substitute materials or equipment, in writing, with sufficient lead time for review prior to the date equipment must be ordered to maintain project

- schedule. Reimburse Owner for costs associated with the review of the proposed substitution whether substitution is accepted or rejected.
- C. Indicate revisions required to adapt substitutions including revisions by other trades. Substitutions that increase the cost of the work and related trades are not permitted.
- D. The proposed substitution shall conform to the size, ratings, and operating characteristics of the equipment or systems as specified and shown on the Drawings.
- E. Proposals for substitutions shall include the following information:
  - 1. A description of the difference between the Contract Document requirements and that of the substitution, the comparative features of each, and the effect of the change on the end result performance. Include the impact of all changes on other contractors and acknowledge the inclusion of additional costs to the other trades.
  - 2. Schematic drawings and details.
  - 3. List of revisions to the Contract Documents that must be made if the substitution is accepted.
  - 4. Estimate of costs the Owner may incur in implementing the substitution, such as test, evaluation, operating and support costs.
  - 5. Statement of the time by which a Contract modification accepting the substitution must be issued, noting any effect on the Contract completion time or the delivery schedule.
  - 6. A statement indicating the reduction to the Contract price if the Owner accepts the substitution. Include required modifications to all related trades.

## **PART 3 - EXECUTION**

### 3.01 FEES AND PERMITS

- A. Pay all required fees and obtain all required permits related to the electrical installation.
- B. Pay royalties or fees in connection with the use of patented devices and systems.
- C. Provide controlled inspection where required by authorities having jurisdiction or by these specifications.
- D. Contractor is responsible for paying for all utility shutdown and/or startup fees associated with electrical installation within the contract scope of work.

# 3.02 SUBMITTALS AND REVIEWS

- A. Submit shop drawings, manufacturer's product data sheets, samples, and test reports as specified.
- B. Within two months after notice to proceed by the Owner or Owner's Representative, or after execution of Owner/Contractor Agreement, submit a complete typed list of all

- electrical equipment manufacturers and material suppliers for the equipment proposed to be provided on this project, as well as names of all subcontractors.
- C. Within four months after notice to proceed by the Owner or Owner's Representative, or after execution of Owner/Contractor Agreement, prepare an index of all submittals for the project. Include a submittal identification number, a cross-reference to the Specification sections or Drawing number, and an item description. Prefix the submittal identification number by the Specification sections to which they apply. Indicate on each submittal, the submittal identification number in addition to the other data specified. All subcontractors shall utilize the assigned submittal identification number.
- D. After the Contract is awarded, obtain complete shop drawings, product data and samples from the manufacturers, suppliers, vendors, and all subcontractors, for all materials and equipment as specified. Submit data and details of such materials and equipment for review. Prior to submission, certify that the shop drawings, product data and samples are in compliance with the Contract Documents. Check all materials and equipment upon their arrival on the job site and verify their compliance with the Contract Documents. Modify any work, which proceeds prior to receiving accepted shop drawings as required to comply with the Contract Documents and the shop drawings.
- E. Review of submittals is for general compliance with the design concept and Contract Documents. Comments or absence of comments shall not relieve the Contractor from compliance with the Contract Documents. The Contractor remains solely responsible for details and accuracy, for confirming and correlating all quantities and dimensions, for selecting fabrication processes, for techniques of construction, for performing the work in a safe manner, and for coordinating the work with that of other trades.
- F. Review and recommendations by the Engineer are not to be construed as change authorizations. If discrepancies between the materials or equipment submitted and the Contract Documents are discovered either prior to or after the data is processed, the Contract Documents will govern.
- G. No part of the work shall be started in the shop or in the field until the shop drawings and samples for that portion of the work have been submitted and accepted.
- H. A minimum period of ten working days, exclusive of transmittal time, will be required in the Engineer's office each time a shop drawing, product data and/or samples are submitted for review. This time period must be considered by the Contractor in the scheduling of the work.
- I. Submit electronic copies of all items requiring shop drawings. Submit electronic copies of manufacturer's product submittals. Electronic copies of submittals, with applicable markups, will be returned. Additional copies are the responsibility of the Contractor.
- J. Submittals will be stamped as follows:

Stamp	Interpretation
No Exceptions Noted	Fabrication, manufacture, or construction may
	proceed providing submittal complies with the
	Contract Documents.
Exceptions Noted	Fabrication, manufacture, or construction may
[ ] Resubmit for Record	proceed providing submittal complies with the

[] No Resubmission	Contract Documents and the Engineer's notations.
Required	
Revise and Resubmit	Submittal does not comply with the Contract
	Documents. Do not proceed with fabrication,
	manufacture, or construction. The work and/or
	shop drawings are not permitted at the job site.
	Revise and resubmit submittal.
Reviewed for Information Only	Reyes Engineering, Inc. did not take part designing
	the system associated with this submittal. Reyes
	Engineering, Inc. has reviewed this submittal at the
	request of the project Engineer and/or facility
	owner for information only. The submittal has not
	been reviewed for conformance with any contract
	document produced under the supervision of Reyes
	Engineering, Inc. Any comments provided below
	are for general coordination or feedback purposes
	to the contractor or engineer of record.
Unreviewed	Submittal has not been reviewed.

- K. Submit materials and equipment by manufacturer, trade name, and model number. Include copies of applicable brochure or catalog material. Maintenance and operating manuals are not acceptable substitutes for shop drawings.
- L. Identify each sheet of printed submittal pages (using arrows, underlining or circling) to show applicable sizes, types, model numbers, ratings, capacities and options actually being proposed. Cross out non-applicable information. Note specified features such as materials or paint finishes.
- M. Include dimensional data for roughing in and installation and technical data sufficient to verify that equipment meets the requirements of the Contract Documents. Include wiring, piping and service connection data.
- N. Maintain a complete set of reviewed and stamped shop drawings and product data on site.
- O. For each room or area of the building containing electrical equipment, submit the following:
  - 1. Floor Plans: Plan and elevation layout drawings indicating the equipment in the exact location in which it is intended to be installed. These plans shall be of a scale not less than  $\frac{1}{4}$  inch = 1'-0". They shall be prepared in the following manner:
    - a. Indicate the physical boundaries of the space including door swings and ceiling heights and ceiling types (as applicable).
    - b. Illustrate all electrical equipment proposed to be contained therein. Include top and bottom elevations of all electrical equipment. The Drawings shall be prepared utilizing the dimensions contained in the individual equipment submittals. Indicate code and manufacturer's required clearances.

- c. Illustrate all other equipment therein such as conduits, detectors, luminaries, ducts, registers, pull boxes, wireways, structural elements, etc.
- d. Indicate the operating weight of each piece of equipment.
- e. Indicate the heat release from each piece of electrical equipment in terms of BTU per hour. This information shall be that which is supplied by the respective manufacturers.
- f. Illustrate concrete pads, curbs, etc.
- g. Indicate dimensions to confirm compliance with code-required clearances.
- h. Indicate maximum normal allowable operating temperature for each piece of equipment (as per each respective manufacturer's recommendation).
- i. Equipment removal routes.
- P. The work described in shop drawing submissions shall be carefully checked by all trades for clearances (including those required for maintenance and servicing), field conditions, maintenance of architectural conditions and coordination with other trades on the job. Each submitted shop drawing shall include a certification that related job conditions have been checked by the Contractor and each Subcontractor and that conflicts do not exist.
- Q. The Contractor is not relieved of the responsibility for dimensions or errors that may be contained on submissions, or for deviations from the requirements of the Contract Documents. The noting of some errors but overlooking others does not grant the Contractor permission to proceed in error. Regardless of any information contained in the shop drawings, product data and samples, the Contract Documents govern the work and are neither waived nor superseded in any way by the review of shop drawings, product data and samples.
- R. Inadequate or incomplete shop drawings, product data and/or samples will not be reviewed and will be returned to the Contractor for resubmittal.
- S. Number all pages and drawings in product data brochures consecutively from beginning to end. Unless the following information is included, the submittal will be returned for resubmission. Resubmittals of product data or brochures shall include a cover letter summarizing the corrections made in response to the review comments.
  - 1. Indicate the following on the lower right-hand corner of each shop drawing and on the coversheet of each product data brochure electronic submission:
    - a. The submittal identification number.
    - b. Title of the sheet or brochure.
    - c. Name and location of the project.

- d. Names of the Engineer, Contractor, Subcontractor, manufacturer, supplier and vendor.
- e. The date of submittal; and the date of each correction, version and revision.
- T. The distribution equipment, short circuit and coordination study, and room layout submittals shall be submitted concurrently. Failure to submit concurrently may result in the immediate return of the submittal marked REVISE AND RESUBMIT.

## 3.03 COORDINATION OF WORK

- A. The Contract Documents establish scope, materials and quality but are not detailed installation instructions. Drawings are diagrammatic.
- B. Coordinate work with related trades and furnish, in writing, any information necessary to permit the work of related trades to be installed satisfactorily and with the least possible conflict or delay.
- C. The electrical drawings show the general arrangement of equipment and appurtenances. Follow these drawings as closely as the actual construction and the work of other trades will permit. Provide offsets, fittings, and accessories, which may be required but not shown on the Drawings. Investigate the site, and review drawings of other trades to determine conditions affecting the work and provide such work and accessories as may be required to accommodate such conditions.
- D. The locations of lighting fixtures, outlets, panels and other equipment indicated on the Drawings are approximately correct, but they are understood to be subject to such revision as may be found necessary or desirable at the time the work is installed in consequence of increase or reduction of the number of outlets, or in order to meet field conditions, or to coordinate with modular requirements of ceilings, or to simplify the work, or for other legitimate causes.
- E. Exercise particular caution with reference to the location of panels, outlets, switches, etc., and have precise and definite locations accepted by the Engineer before proceeding with the installation.
- F. The Drawings show only the general run of raceways and approximate locations of outlets. Any significant changes in location of outlets, cabinets, etc., necessary in order to meet field conditions shall be brought to the immediate attention of the Engineer for review before such alterations are made. Modifications shall be made at no additional cost to the Owner.
- G. Verify with the Engineer the exact location and mounting height of outlets and equipment not dimensionally located on the Drawings.
- H. Circuit tags in the form of numbers are used where shown to indicate the circuit designation numbers in electrical panels. Show the actual circuit numbers on the as-built Record Drawings and on the associated typed panelboard directory card. Where circuiting is not indicated, provide required circuiting in accordance with the loading indicated on the Drawings and/or as directed.

- I. The Drawings generally do not indicate the number of wires in conduit for the branch circuit wiring of fixtures and outlets, or the actual circuiting. Provide the correct wire size and quantity as required by the indicated circuiting and/or circuit numbers indicated, the control intent, referenced wiring diagrams (if any), the specified voltage drop or maximum distance limitations, and the applicable requirements of the NEC.
- J. Carefully check space requirements with other trades to insure that equipment can be installed in the spaces allotted.
- K. Wherever work interconnects with work of other trades, coordinate with other trades to insure that they have the information necessary so that they may properly install the necessary connections and equipment. Identify items (remote ballast, pull boxes, etc.) requiring access in order that the ceiling trade will know where to install access doors and panels.
- L. Consult with other trades regarding equipment so that, wherever possible, motor controls and distribution equipment are of the same manufacturer.
- M. Furnish and set sleeves for passage of electrical risers through structural masonry and concrete walls and floors and elsewhere as required for the proper protection of each electrical riser passing through building surfaces.
- N. Provide firestopping around all pipes, conduits, ducts, sleeves, etc. which pass through rated walls, partitions and floors.
- O. Provide detailed information on openings and holes required in precast members for electrical work.
- P. Provide required supports and hangers for conduit and equipment, designed so as not to exceed allowable loadings of structures.
- Q. Examine and compare the Contract Documents with the drawings and specifications of other trades, and report any discrepancies between them to the Engineer and obtain written instructions for changes necessary in the work. Install and coordinate the work in cooperation with other related trades. Before installation, make proper provisions to avoid interferences.
- R. Wherever the work is of sufficient complexity, prepare additional detail drawings to scale to coordinate the work with the work of other trades. Detailed work shall be clearly identified on the Drawings as to the area to which it applies. Submit these drawings to the Engineer for review. At completion include a set of these drawings with each set of Record Drawings.
- S. Furnish services of an experienced Superintendent, who shall be in constant charge of all work, and who shall coordinate work with the work of other trades. No work shall be installed before coordinating with other trades.
- T. Coordinate with the local electric utility company and the local telephone company as to their requirements for service connections and provide all necessary metering provisions, grounding, materials, equipment, labor, testing, and appurtenances. Coordinate the electrical service installation with the Utility Company, contractor shall be responsible for all work related to the service that is not provided by the Utility. Coordinate with the

- owner's representative to arrange the existing building incoming service shutdown at least 4 weeks prior to commence,
- U. Before commencing work, examine adjoining work on which this work is in any way affected and report conditions, which prevent performance of the work. Become thoroughly familiar with actual existing conditions to which connections must be made or which must be changed or altered.
- V. Adjust location of conduits, panels, equipment, etc., to accommodate the work to prevent interferences, both anticipated and encountered. Determine the exact route and location of each conduit prior to fabrication.
  - 1. Right-of-Way: Lines which pitch have the right-of-way over those which do not pitch. For example: condensate, steam, and plumbing drains normally have right-of-way. Lines whose elevations cannot be changed have right-of-way over lines whose elevations can be changed.
  - 2. Provide offsets, transitions and changes in direction of conduit as required to maintain proper headroom and pitch on sloping lines.
- W. In cases of doubt as to the work intended, or in the event of need for explanation, request supplementary instructions from the Engineer.
- X. Before commencing work, examine adjoining work on which this work is in any way affected and report conditions, which prevent performance of the work. Become thoroughly familiar with actual existing conditions to which connections must be made or which must be changed or altered.
- Y. Adjust location of conduits, panels, equipment, etc., to accommodate the work to prevent interferences, both anticipated and encountered. Determine the exact route and location of each conduit prior to fabrication.
  - Right-of-Way: Lines which pitch have the right-of-way over those which do not pitch. For example: condensate, steam, and plumbing drains normally have rightof-way. Lines whose elevations cannot be changed have right-of-way over lines whose elevations can be changed.
  - 2. Provide offsets, transitions and changes in direction of conduit as required to maintain proper headroom and pitch on sloping lines.
- Z. In cases of doubt as to the work intended, or in the event of need for explanation, request supplementary instructions from the Engineer.

### 3.04 CONTRACTOR'S COORDINATION DRAWINGS

- A. The Contractor shall coordinate efforts of all trades and shall furnish (in writing, with copies to the Engineer) any information necessary to permit the work of all trades to be installed satisfactorily and with the least possible interference or delay.
- B. The Contractor and all trade contractors shall prepare a complete set of construction Coordination Drawings indicating the equipment actually purchased and the exact routing for all lines such as busway, conduit, piping, ductwork, etc., including conduit embedded

in concrete floors and walls. The Coordination Drawings shall be submitted complete to the Engineer within three months after notice to proceed is given, and in compliance with the construction schedule for the project. The sheet metal drawings, at a scale of not less than 1/4 inch to 1 foot, shall serve as the base drawings to which all other Contractors shall add their work. Each separate trade contractor shall draw their work on separate layers with different color assignments to facilitate coordination. Each Coordination Drawing shall be completed and signed off by the other Trade Contractors and the Contractor prior to the installation of the HVAC, plumbing, electrical and fire sprinkler work in the area covered by the specific drawing. The Contractor's work shall be installed according to the shop drawings and coordination drawings. If the Contractor allows one trade to install their work before coordination with the work of other trades, the Contractor shall make all necessary changes to correct the condition at no additional cost to the Owner.

- C. The Contractors' Coordination Drawings shall indicate structural loads at support points for all piping 10 inch and larger, racked piping, racked conduit, busway, and suspended electrical equipment. Submit to Structural Engineer for review and approval. The elevation, location, support points, static, dynamic and expansion forces and loads imposed on the structure at support and anchor points shall be indicated. All beam penetrations and slab penetrations shall be indicated and sized and shall be coordinated. Work routed underground or embedded in concrete shall be indicated by dimension to column and building lines and shall be coordinated. Coordination Drawings shall document all required structural penetrations for initial construction. Penetrations shall be dimensioned for walls, floors and roofs. These structural coordination requirements require review and approval by the Structural Engineer prior to completion and submittal of the drawings.
- D. This requirement for Coordination Drawings shall not be construed as authorization for the Contractor or trade contractors to make any unauthorized changes to the Contract Documents. Contract document space allocations shall be maintained such as ceiling height, designated clearance for future construction and flexibility, chase walls, equipment room size, unless prior written authorization is received from the Engineer to change them.
- E. Prior to final acceptance of the Work the Contractor shall submit the Coordination Drawings as part of the Record Drawings submittal.

## 3.05 EXAMINATION OF SITE

- A. Prior to the submitting of bids, visit the project site and become familiar with all conditions affecting the proposed installation and make provisions as to the cost thereof.
- B. The Contract Documents do not make representations regarding the character or extent of the sub-soils, water levels, existing structural, mechanical and electrical installations, above or below ground, or other sub-surface conditions which may be encountered during the work. Evaluate existing conditions, which may affect methods or cost of performing the work, based on examination of the site or other information. Failure to examine the Drawings or other information does not relieve the Contractor of responsibility for the satisfactory completion of the work.

## 3.06 CUTTING AND PATCHING

- A. Where cutting, channeling, chasing or drilling of floors, walls, partitions, ceilings or other surfaces is necessary for the proper installation, support or anchorage of conduit or other equipment, layout the work carefully in advance. Repair any damage to the building, piping, equipment or defaced finished plaster, woodwork, metalwork, etc., using skilled tradespeople of the trades required at no additional cost to the Owner.
- B. Do not cut, channel, chase or drill unfinished masonry, tile, etc., unless permission from the Engineer is obtained. If permission is granted, perform this work in a manner acceptable to the Engineer.
- C. Where conduit or equipment are mounted on a painted finished surface, or a surface to be painted, paint to match the surface. Cold galvanize bare metal whenever support channels are cut.
- D. Provide slots, chases, openings and recesses through floors, walls, ceilings, and roofs as required. Where these openings are not provided, provide cutting and patching to accommodate penetrations at no additional cost to the Owner.

### 3.07 MOUNTING HEIGHTS

- A. Mounting heights shall conform to ADA requirements.
- B. Verify exact locations and mounting heights with the Engineer before installation.
- C. Electrical and telecommunications outlets shall be mounted not lower than 15 inches above finished floor to bottom of outlet and not higher than 48 inches above finished floor to top of device.
- D. Electrical switches shall be mounted not lower than 36 inches above finished floor to center of switch and not higher than 48 inches above finished floor to center of switch.
- E. Fire alarm manual pull stations shall be mounted 48 inches above finished floor to center of manual pull station.
- F. Outlets for public and other wall mounted type telephones shall be installed so that the particular telephone installed conforms to ADA mounting height requirements.
- G. Visual Alarms: Mount not less than 80 inches to the bottom or 96 inches to the top of the device.
- H. Wall Mounted Exit Signs: 2 inches above top of door to bottom of sign.
- I. Low Level Exit Signs: 6 inches to bottom of sign.
- J. Stairwell and utility corridor wall mounted lighting fixtures shall be mounted 8 feet 6 inches above finished floor or 1 foot below ceiling or structure above, whichever is lower.

## 3.08 CONTINUANCE OF EXISTING SERVICES

A. Existing electrical services not specifically indicated to be removed or altered shall remain as they presently exist.

- B. Where existing services interfere with new construction, alter or reroute such existing equipment to facilitate new construction after obtaining written permission from the Engineer. Notification in writing giving two weeks advance notice of planned alteration is required.
- C. Preserve continuity of service of existing facilities (related to damage or alteration due to new construction). Unauthorized alteration to existing equipment shall be corrected without additional cost to the Owner.

## 3.09 DEMOLITION

- A. Remove, relocate, and reroute existing electrical equipment to facilitate new construction or remodeling work.
- B. Examine the site before submitting a bid to observe existing conditions.
- C. Schedule demolition in advance. Schedule work to avoid disruption of normal operations.
- D. Reconnect circuits serving equipment required to remain in service to other panelboards, motor control centers, or other appropriate distribution equipment. Provide additional panelboards, motor control centers, or other appropriate distribution equipment where there is insufficient available capacity in remaining existing equipment for reconnection.
- E. Remove existing conduit and wire back to panelboard, motor control center, or other distribution source.
- F. Where a circuit is interrupted by removal of a device or fixture from that circuit, provide additional conduit and wire to restore service to the remaining devices and fixtures on that circuit.
- G. Electrical equipment to be removed that is in good working order shall be carefully removed and offered to the Owner. Items rejected by the Owner shall be removed from the project site and properly disposed of.

#### 3.10 CLEANING UP

- A. Avoid accumulation of debris, boxes, loose materials, crates, etc., resulting from the installation of this work. Remove from the premises each day all debris, boxes, etc., and keep the premises clean and free of dust and debris.
- B. Clean all fixtures and equipment at the completion of the project. Wipe clean exposed lighting fixture reflectors and trim pieces with a non-abrasive cloth just prior to occupancy.
- C. All electrical equipment shall be thoroughly vacuumed and wiped clean prior to energization and at the completion of the project. Equipment shall be opened for observation by the Engineer as required.

### 3.11 WATERPROOFING

A. Avoid, if possible, the penetration of any waterproof membranes such as roofs, machine room floors, basement walls, and the like. If such penetration is necessary, make

penetration prior to the waterproofing and furnish all sleeves or pitch-pockets required. Advise the Engineer and obtain written permission before penetrating any waterproof membrane, even where such penetration is shown on the Drawings.

B. Restore waterproofing integrity of walls or surfaces after they have been penetrated without additional cost to the Owner.

#### 3.12 SUPPORTS

- A. Support work in accordance with the best industry practice. Provide supports, hangers, auxiliary structural members and supplemental hardware required for support of the work.
- B. Provide supporting frames or racks extending from floor slab to ceiling slab for work indicated as being supported from walls where the walls are incapable of supporting the weight. In particular, provide such frames or racks in electric closets and mechanical equipment rooms.
- C. Provide supporting frames or racks for equipment, which is installed in a freestanding position.
- D. Supporting frames or racks shall be of standard angle, standard channel or specialty support system steel members, rigidly bolted or welded together and adequately braced to form a substantial structure. Racks shall be of ample size to assure a workmanlike arrangement of all equipment mounted on them.
- E. Adequate support of equipment (including outlet, pull and junction boxes and fittings) shall not depend on electric conduits, raceways, or cables for support.
- F. Electrical equipment shall not rest on or depend for support on suspended ceiling media (tiles, lath, plaster, as well as splines, runners, bars and the like in the plane of the ceiling). Provide independent support of electrical equipment. Do not attach to supports provided for ductwork, piping or work of other trades.
- G. Provide required supports and hangers for conduit, equipment, etc., so that loading will not exceed allowable loadings of structure. Electrical equipment and supports shall not come in contact with work of other trades.

### 3.13 FASTENINGS

- A. Fasten equipment to building structure in accordance with the best industry practice.
- B. Where weight applied to the attachment points is 100 pounds or less, conform to the following as a minimum:
  - 1. Wood: Wood screws.
  - 2. Concrete and solid masonry: Bolts and expansion shields.
  - 3. Hollow construction: Toggle bolts.
  - 4. Solid metal: Machine screws in tapped holes or with welded studs.

- 5. Steel decking or sub-floor: Fastenings as specified below for applied weights in excess of 100 pounds.
- C. Where weight applied to building attachment points exceeds 100 pounds, but is 300 pounds or less, conform to the following as a minimum:
  - 1. At concrete slabs provide 24-inch x 24-inch x ½-inch steel fishplates on top with through bolts. Fishplate assemblies shall be chased in and grouted flush with the top of slab screed line, where no fill is to be applied.
  - 2. At steel decking or sub-floor for all fastenings, provide through bolts or threaded rods. The tops of bolts or rods shall be set at least one inch below the top fill screed line and grouted in. Suitable washers shall be used under bolt heads or nuts. In cases where the decking or sub-floor manufacturer produces specialty hangers to work with their decking or sub-floor such hangers shall be provided.
- D. Where weight applied to building attachment points exceeds 300 pounds, coordinate with and obtain the approval of Engineer and conform to the following as a minimum:
  - 1. Provide suitable auxiliary channel or angle iron bridging between building structural steel elements to establish fastening points. Bridging members shall be suitably welded or clamped to building steel. Provide threaded rods or bolts to attach to bridging members.
- E. For items, which are shown, as being ceiling mounted at locations where fastening to the building construction element above is not possible, provide suitable auxiliary channel or angle iron bridging tying to the building structural elements.
- F. Wall mounted equipment may be directly secured to wall by means of steel bolts. Groups or arrays of equipment may be mounted on adequately sized steel angles, channels, or bars. Prefabricated steel channels as manufactured by Kindorf or Unistrut are acceptable.

## 3.14 IDENTIFICATION

- A. Identify electrical equipment with permanently attached black phenolic nameplates with ½ inch high white engraved lettering. Identification shall include equipment name or load served as appropriate. Nameplates for equipment connected to the emergency power system shall be red with white lettering. Nameplates shall be attached with cadmium plated screws; peel and stick tape or glue on type nameplates are not allowed.
- B. Cable tags shall be flameproof secured with flameproof non-metallic cord.
- C. Provide an engraved nameplate for each switch controlling loads, which are not local to the switch.
- D. Wherever raceways for future use are terminated outside of the building, stake the location with a 2-foot-long, 1-inch x 1-inch clear heart redwood stake.
- E. See individual sections for additional identification requirements.

### 3.15 PROHIBITED LABELS AND IDENTIFICATIONS

- A. In all public areas, tenant areas, and similar locations within the project, the inclusion or installation of any equipment or assembly which bears on any exposed surface any name, trademark, or other insignia which is intended to identify the manufacturer, the vendor, or other source(s) from which such object has been obtained, is prohibited.
- B. Required UL labels shall not be removed nor shall identification specifically required under the various technical sections of the Specifications be removed.

# 3.16 EQUIPMENT PADS AND ANCHOR BOLTS

- A. Provide concrete pads under all floor mounted electrical equipment. Equipment pads shall conform to the shape of the piece of equipment it serves with a minimum 1-inch margin around the equipment and supports. Pads shall be a minimum of 4 inches high and made of a minimum 28 day, 2500psi concrete reinforced with 6-inch x 6-inch 6/6-gauge welded wire mesh. Trowel tops and sides of pad to smooth finishes, equal to those of the floors, with all external corners bullnosed to a ¾ inch radius. Shop drawings stamped NO EXCEPTIONS NOTED shall be used for dimensional guidance in sizing pads.
- B. Provide galvanized anchor bolts for all equipment placed on concrete equipment pads, inertia blocks, or on concrete slabs. Provide bolts of the size and number recommended by the manufacturer of the equipment and locate by means of suitable templates. Equipment installed on vibration isolators shall be secured to the isolator. Secure the isolator to the floor, pad, or support as recommended by the vibration isolation manufacturer.
- C. Where equipment is mounted on gypsum board partitions, the mounting screws shall pass through the gypsum board and securely attach to the partition studs. As an alternative, the mounting screws may pass through the gypsum board and be securely attached to 6 inches square, 18-gauge galvanized metal backplates, which are attached to the gypsum board with an approved non-flammable adhesive. Toggle bolts installed in gypsum board partitions are not allowed.

#### 3.17 DELIVERY, DRAYAGE AND HAULING

- A. Provide drayage, hauling, hoisting, shoring and placement in the building of equipment specified and be responsible for the timely delivery and installation of equipment as required by the construction schedule. If any item of equipment is received prior to the time that it is required, the Contractor shall be responsible for its proper storage and protection until the time it is required. Pay for all costs of drayage or storage.
- B. If equipment is not delivered or installed at the project site in a timely manner as required by the project construction schedule, the Contractor shall be responsible for resulting disassembly, re-assembly, manufacturer's supervision, shoring, general construction modification, delays, overtime costs, etc. at no additional cost to the Owner.

# 3.18 EQUIPMENT AND MATERIAL PROTECTION

A. Protect the work, equipment, and material of other trades from damage by work or workmen of this trade, and correct damaged caused without additional cost to the Owner.

- B. Take responsibility for work, materials, and equipment until finally inspected, tested and accepted. Protect work against theft, injury, or damage, and carefully store material and equipment received on site, which is not immediately installed. Close open ends of work with temporary covers or plugs during construction to prevent entry of obstructing material. Cover and protect equipment and materials from damage due to water, sprayon fireproofing, construction debris, etc. Store equipment to moisture damage in dry, heated spaces.
- C. Provided adequate means for fully protecting finished parts of materials and equipment against damage from whatever cause during the progress of the work until final acceptance. Protect materials and equipment in storage and during construction in such a manner that no finished surfaces will be damaged or marred, and moving parts are kept clean and dry. Do not install damaged items; take immediate steps to obtain replacement or repair.
- D. Lighting fixture troffers with parabolic reflectors shall be installed with factory mounted plastic protective bags around parabolic reflector assembly. Remove protective bag just prior to occupancy.

## 3.19 TESTING OF ELECTRICAL SYSTEMS

- A. Comply with the project construction schedule for the date of final performance and acceptance testing, and complete work sufficiently in advance of the Contract completion date to permit the execution of the testing prior to occupancy and Contract closeout. Complete any adjustments and/or alterations, which the final acceptance tests indicate as necessary for the proper functioning of all equipment prior to the completion date. See individual sections for extent of testing required.
- B. Provide a detailed schedule of completion indicating when each system is to be completed and outlining when field testing will be performed. Submit completion schedule for review within six months after the notice to proceed by Owner's Representative has been given. Update this schedule periodically as the project progresses.

#### 3.20 OPERATING INSTRUCTIONS

- A. Provide the services of factory trained specialists to provide an operating instructions seminar for equipment and systems. The seminar shall be conducted over a five day (consecutive) period. Instruction time is defined as straight time working hours and does not include nights, weekends, or travel time to and from the project.
- B. Submit seminar agenda, schedule and list of representatives to the Owner for approval thirty days prior to suggested date of seminar. Do not commence seminar until the Owner has issued a written acceptance of the starting time and attendees. Confirm attendance of seminar by written notification to participants.
- C. Instruct Owner's operating personnel in proper starting sequences, operation, shutdown, general maintenance and preventative maintenance procedures, including normal and emergency procedures.
- D. Submit final copies of Record Drawings and Operating and Maintenance Manuals to Owner at seminar.

E. Submit a written record of minutes and attendees of the seminar to the Owner.

## 3.21 OPERATING AND MAINTENANCE MANUALS

- A. Provide Operating and Maintenance Manuals for equipment and materials furnished under this Division.
- B. Maintenance manuals shall include complete cleaning and servicing data compiled in a clear and easily understandable format. Show model numbers of each piece of equipment, complete lists of replacement parts, capacity ratings, and actual loads.
- C. Provide the following information where applicable:
  - 1. Identifying name and mark number.
  - 2. Locations (where several similar items are used, provide a list).
  - 3. Complete nameplate data.
  - 4. Certified Record Drawings and Final Reviewed submittals.
  - 5. Parts list.
  - 6. Performance curves and data.
  - 7. Wiring diagrams.
  - 8. Manufacturer's recommended operating and maintenance instructions with all non-applicable information deleted.
  - 9. List of spare parts recommended for normal service requirements.
  - 10. Assembly and disassembly instructions with exploded view drawings where necessary.
  - 11. Test reports.
  - 12. Trouble shooting diagnostic instructions where applicable.
- D. Submit electronic copies of operating and maintenance data books for review at least ten (10) weeks before the completion date. Assemble data in a completely indexed volume or volumes electronically as indicated for each item.

## 3.22 RECORD DRAWINGS

A. The Contractor shall maintain on a daily basis at the Project site a complete set of Record Drawings. The Record Drawings shall initially consist of a set of blueline prints or AutoCAD files of the Contractor's Coordination Drawings. The prints shall be marked or the AutoCAD files electronically updated to show the precise location of all buried or concealed work and equipment, including embedded conduit, raceways and boxes, and all changes and deviations in the Electrical work from that shown on the Contract Documents. This requirement shall not be construed as authorization for the Contractor to make changes in the layout or work without definite written instructions from the

Engineer. The updated Coordination Drawings shall be used to produce the final Record Drawings that shall be delivered to the Owner in AutoCAD electronic format media upon Project completion.

- B. Record dimensions clearly and accurately to delineate the work as installed. Suitably identify locations of all equipment by at least two dimensions to permanent structures.
- C. The Contractor and Subcontractor shall mark all in-progress Record Drawings on the front lower right hand corner with a rubber stamp impression or an AutoCAD image similar to the following:

## RECORD DRAWING

(3/8 inch high letters)

To be used for recording Field Deviations and Dimensional Data Only

(5/16 inch high letters)

D. Upon completion of the work, the Contractor and subcontractors shall certify all Record Drawings on the front lower right hand corner adjacent to the above marking with a rubber stamp impression or an AutoCAD image similar to the following:

#### RECORD DRAWING

### **CERTIFIED CORRECT**

(3/8 inch high letters)

(Printed Name of General Contractor)

(5/16 inch high letters)

Date:

(Printed Name of Subcontractor)

(5/16 inch high letters)

Date:

E. Prior to final acceptance of the Work of this Division, the Contractor shall submit properly certified Record Drawings to the Engineer for review and shall make changes, corrections or additions as the Engineer may require to the Record Drawings. After the Engineer's review and any required Contractor revisions, the Record Drawings shall be delivered to the Owner on electronic media in AutoCAD format. The Engineer does not assume any responsibility for the accuracy or completeness of the Record Drawings.

## 3.23 FINAL PUNCHLIST

- A. Prior to the Final Punchlist, certify that systems and equipment are complete, operational, and are in compliance with the Contract Documents.
- B. During the Final Punchlist, provide personnel with access keys, hand held radios, and necessary expertise to operate each system and piece of equipment to demonstrate operational compliance with the Contract Documents.
- C. Any deficiencies noted on the Final Punchlist shall be expeditiously corrected and certified in writing.

## 3.24 EARLY OCCUPANCY

- A. Complete those systems which are necessary to allow partial early occupancy of the building.
- B. Verify and comply with requirements for temporary occupancy with the local Building and Fire Departments.

### END OF SECTION

## SECTION 260501 - MINOR ELECTRICAL DEMOLITION

### **PART 1 - GENERAL**

- 1.01 SECTION INCLUDES
  - A. Electrical demolition.
- 1.02 RELATED REQUIREMENTS

## **PART 2 - PRODUCTS**

- 2.01 MATERIALS AND EQUIPMENT
  - A. Materials and equipment for patching and extending work: As specified in individual sections.

### **PART 3 - EXECUTION**

### 3.01 EXAMINATION

- A. Verify field measurements and circuiting arrangements are as shown on Drawings.
- B. Verify that abandoned wiring and equipment serve only abandoned facilities.
- C. Demolition drawings are based on casual field observation and existing record documents.
- D. Report discrepancies to Resident Engineer before disturbing existing installation.
- E. Beginning of demolition means installer accepts existing conditions.

## 3.02 PREPARATION

- A. Disconnect electrical systems in walls, floors, and ceilings to be removed.
- B. Coordinate communications interruptions and shutdowns with Resident Engineer.
  - 1. Obtain permission from Owner at least 24 hours before partially or completely disabling system.
  - 2. Make temporary connections to maintain service in areas adjacent to work area.
- C. Provide temporary wiring and connections to maintain existing systems in service during construction. When work must be performed on energized equipment or circuits, use personnel experienced in such operations.
- D. Existing Electrical power distribution: Maintain existing system in service until new system is complete and ready for service. Disable system only to make switchovers and connections. Minimize outage duration.

- 1. Obtain permission from Owner at least 24 hours before partially or completely disabling system.
- 2. Make temporary connections to maintain service in areas adjacent to work area.

## 3.03 DEMOLITION AND EXTENSION OF EXISTING ELECTRICAL WORK

- A. Remove, relocate, and extend existing installations to accommodate new construction.
- B. Remove all abandoned communication cabling, power and lighting wiring to source of supply.
- C. Remove exposed abandoned conduit, including abandoned conduit above accessible ceiling finishes and below raised floor. Cut conduit flush with walls and floors, and patch surfaces.
- D. Disconnect abandoned outlets and remove devices. Remove abandoned outlets if conduit servicing them is abandoned and removed. Provide blank cover for abandoned outlets that are not removed.
- E. Disconnect and remove abandoned panelboards and distribution equipment.
- F. Disconnect and remove electrical devices and equipment serving utilization equipment that has been removed.
- G. Disconnect and remove abandoned luminaires. Remove brackets, stems, hangers, and other accessories.
- H. Disconnect, remove and store for later use all devices indicated on Drawings to be reused.
- Repair adjacent construction and finishes damaged during demolition and extension work.
- J. Maintain access to existing electrical installations and communications installations that remain active. Modify installation or provide access panel as appropriate.
- K. Extend existing installations using materials and methods compatible with existing electrical installations, or as specified.

### 3.04 CLEANING AND REPAIR

- A. Clean and repair existing materials and equipment that remain or that are to be reused.
- B. Panelboards: Clean exposed surfaces and check tightness of electrical connections. Replace damaged circuit breakers and provide closure plates for vacant positions. Provide typed circuit directory showing revised circuiting arrangement.
- C. Luminaires: Remove existing luminaires for cleaning. Use mild detergent to clean all exterior and interior surfaces; rinse with clean water and wipe dry. Replace lamps, ballasts and broken electrical parts.

## **END OF SECTION**

## SECTION 260519 – LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

### **PART 1 - GENERAL**

#### 1.01 WORK INCLUDED

- A. Conductor sizes are sized for copper and shall be considered minimum for ampacities and voltage drop requirements.
- B. Conductors for special systems shall be as recommended by the equipment manufacturer except as noted.
- C. Deliver conductors to the job site in cartons, protective covers, or on reels.
- D. The existing power distribution feeders are desired to be re-used where they can remain substantially undisturbed.

### 1.02 SUBMITTALS

- A. Product data.
- B. Test reports.

## **PART 2 - PRODUCTS**

### 2.01 CONDUCTORS - 600V

- A. Type:
  - 1. Copper: No. 12 AWG minimum size unless noted otherwise, No. 8 and larger, Class B concentric or compressed stranded.
- B. Insulation:
  - 1. Thermal setting, polyvinyl chloride: THW, THHN, THWN unless noted or specified otherwise.
  - 2. Cross linked polyethylene: XHHW-2
- C. Thru wiring in luminaires shall be rated for 90-degree C minimum.
- D. Manufacturers: Alcan, General, Essex, Rome, Southwire, or equal.
- E. Color coding of conductors by system voltage is required:
  - 1. For 120/208 Volt power systems, utilize: Black, Red and blue for phase conductors. Utilize white for neutral conductors. Utilize green for ground conductors.
  - 2. For 277/480 Volt power systems, utilize: Brown, Orange and yellow for phase conductors. Utilize gray for neutral conductors. Utilize green with a yellow stripe for ground conductors.
- F. Where a distinct color code system is currently in place, continue with that system.

## 2.02 POWER LIMITED WIRING

- A. Copper, stranded or solid as recommended by the system manufacturer.
- B. Insulation shall be appropriate for the system and location used.
- C. Provide pre-manufactured, UL listed and labeled cable supports.

### 2.03 CONNECTORS - 600V AND BELOW

- A. Branch Circuit Conductor Splices: Live spring type, Scotchlok, Ideal Wire Nut, Buchanan B-Cap, or 3M Series 560 self-stripping type.
- B. Cable Splices: Compression tool applied sleeves, Kearney, Burndy, or equal with 600V heat shrink insulation. For cable splices in sub-terrain/underground vaults or any wet locations shall be provided with 600V 3M Series DBR-6 or approved.
- C. Terminator Lugs for Stranded Wire:
  - 1. No. 10 Wire and Smaller: Spade flared, tool applied.
  - 2. No. 8 Wire and Larger: Compression tool applied, Burndy, Anderson, or equal. Set screw type terminator lugs supplied as an integral part of switches and circuit breakers will be acceptable for terminating only copper conductors.

## **PART 3 - EXECUTION**

## 3.01 CONDUCTORS

- A. Pulling compounds may be used for pulling all power system conductors. Clean residue from the conductors and raceway entrances after the pull is made.
- B. Pulleys or blocks shall be used for alignment of the conductors when pulling. Pulling shall be in accordance with manufacturer's specifications regarding pulling tensions, bending radii of the cable, and compounds. A dynamometer shall be utilized on all high voltage cable pulls to ensure that the maximum allowed cable tension is not exceeded. The Architect and Engineer shall be notified prior to all cable pulls. Record the maximum strain of each pull.
- C. Conductors entering terminal or junction boxes mounted on hermetically sealed refrigeration compressor motors shall be copper.
- D. Make up and insulate wiring promptly after installation of conductors. Wire shall not be pulled in until all bushings are installed and raceways terminations are completed. Wire shall not be pulled into conduit embedded in concrete until after the concrete is poured and forms are stripped.
- E. Wire devices external to isolating panels with copper stranded conductors having a cross-linked polyethylene insulation or equivalent with a dielectric constant of 3.5 or less.
- F. Minimum insulation wall thickness shall be 1/32" for #10 and #12 AWG and 5/64" for #8 AWG and larger conductors. Wiring shall be color coded in accordance with NEC and appropriate NFPA standards.

#### 3.02 CONNECTORS

- A. Control and special systems wires shall be terminated with a tool applied spade flared lug when terminating at a screw connection.
- B. All tool applied compression connectors shall be applied per manufacturer's recommendations and physically checked for tightness.

#### 3.03 COLOR CODING

- A. Secondary service, feeders, and branch circuit conductors shall be color coded. Phase color code to be consistent at all feeder terminations, A-B-C left-to-right, A-B-C top-to-bottom, or A-B-C front-to-back.
- B. Use solid color compound or solid color coating for No. 12 and No. 10 branch circuit conductors and neutral sizes.
- C. Phase conductors No. 8 and larger color code using one of the following:
  - 1. Solid color compound or solid color coating.
  - 2. Stripes, bands, or hash marks of color specified above.
  - 3. Colored as specified using 3/4-inch wide tape. Apply tape in half overlapping turns for a minimum of three inches for terminal points and in junction boxes, pull boxes, troughs, manholes, and handholes. Apply the last two laps of tape with no tension to prevent possible unwinding. Where cable markings are covered by tape, apply tags to cable stating size and insulation type.
- D. Switchlegs, travelers, etc., to be consistent with the phases to which connected or a color distinctive from that listed.
- E. Color coding of the flexible wiring system conductors and connectors shall be the manufacturer's standard.
- F. For modifications and additions to existing wiring systems, color coding shall conform to the existing wiring system.

#### 3.04 TESTS

- A. Perform insulation resistance tests on all new phase and neutral conductors of feeders and circuits over 100 Amperes ampacity, 480 Volt and below, with a 1000 Volt, direct current, megohmmeter. The written test report listing the results of the test to be submitted to Architect. Equipment which may be damaged by this test shall be disconnected prior to the test.
- B. Scheduling of electrical testing must be coordinated with Owner well in advance. The impact of the required testing is expected to affect employees and clients of Owner's facilities and services.

## **END OF SECTION**

## SECTION 260526 – GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS

#### PART 1 - GENERAL

### 1.01 WORK INCLUDED

- A. Expand the existing building reference ground electrode system.
- B. Expand the existing building reference ground access conductor system.
- C. Provide a complete ground system as specified herein and shown on the Drawings.
- D. Include bonding of conduit systems.
- E. Maintain electrical continuity of the existing ground array system as specified herein and shown on the Drawings. Included in this section are the minimum composition requirements and installation methods for the following:
  - 1. Busbars
  - 2. Bonding accessories

#### 1.02 QUALITY ASSURANCE

- A. All cable and equipment shall be installed in a neat and workmanlike manner. All methods of construction that are not specifically described or indicated in the contract documents shall be subject to the control and approval of the Owner or Owner Representative. Equipment and materials shall be of the quality and manufacture indicated. The equipment specified is based upon the acceptable manufactures listed. Where "approved equal" is stated, equipment shall be equivalent in every way to that of the equipment specified and subject to approval.
- B. Strictly adhere to all Building Industry Consulting Service International (BICSI), Electronic Industries Alliance (EIA) and Telecommunications Industry Association (TIA) recommended installation practices when installing communications/data cabling.
- C. Material and work specified herein shall comply with the applicable requirements of the following standards and the Authority Having Jurisdiction (AHJ).
  - 1. ANSI/TIA/EIA 568 Commercial Building Telecommunications Cabling Standard
  - 2. TIA 569 Commercial Building Standard for Telecommunications Pathways and Spaces
  - 3. ANSI/TIA/EIA 606 Administration Standard for the Telecommunications Infrastructure of Commercial Buildings
  - 4. ANSI-J-STD 607 Joint Standard for Commercial Building Grounding (Earthing) and Bonding Requirements for Telecommunications
  - 5. NFPA 70 National Electric Code

- 6. BICSI Telecommunications Distribution Methods Manual, 11th Edition,
- 7. PRODUCTS

#### 1.03 GROUNDING CONDUCTORS

- A. Green, 600 Volt, polyvinyl Chloride, THWN insulated copper for interior systems.
- B. Bare copper for underground or exterior systems.

#### 1.04 CONNECTORS

- A. Cast, Compression, set screw or bolted type for building internal conductor termination.
- B. Form poured, exothermic welds (Cadweld) for use: exterior to the building, where exposed to the elements or below grade or underground.
- C. Grounding lugs where provided as standard manufacturer's items on equipment.

#### 1.05 GROUND RODS

- A. Copper clad steel, 5/8"x10'-0" long ground rods. Where ground wells are indicated, provide a 12-inch deep, 8-inch diameter precast concrete well with flush lid for accessibility and inspection of welded connections.
- B. Utilize RCP Vaults No. 12R12A with 12R12-t cover.

# **PART 2 - EXECUTION**

## 2.01 INSTALLATION

- A. Grounding Conductors: Default sized in accord with Article 250, Tables 250-122 and 250-66 of the National Electrical Code. Where larger size conductors are indicated on the drawings, utilize the size indicated on the drawings.
- B. Grounding Conductor Connectors: Made up tight and located for future servicing and to insure low impedance.
- C. Ground the electrical system, the cold-water service, structural steel, and transformers to the building ground grid.
- D. All Plug-in Receptacles: Bonded to the boxes, raceways, and grounding conductor.
- E. Provide equipment grounding conductor in all PVC conduit runs.
- F. Provide ground bonding to above ground portion of metal gas piping per NEC 250-104(b).
- G. All separately derived systems shall be solidly grounded to the reference ground electrode system via the building reference ground access conductor system.
- H. Bond the new electrode to the panel ground bus.

I. Provide splice copper wire ground pathway that is visually traceable from the motor frame to the ground bus in the panel and from the ground bus in the panel there is to be a bonding connection between the neutral bus and the ground bus.

# 2.02 EQUIPMENT

- A. Provide separate green insulated equipment ground conductor in all non-metallic and flexible electrical raceways. Effectively ground all luminaires, panels, controls, motors, disconnect switches, exterior lighting standards, and noncurrent carrying metallic enclosures. Use bonding jumpers, grounding bushings, lugs, buses, etc., for this purpose.
- B. Provide grounding bushings on all feeder conduit entrances to panels and equipment enclosures and bond bushings to enclosures with minimum No. 10 AWG conductor. Connect the equipment ground to the building system ground. Use the same size equipment ground conductors as phase conductors, up through No. 10 AWG.

## **END OF SECTION**

## SECTION 260529 – HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

#### PART 1 - GENERAL

#### 1.01 SECTION INCLUDES

A. Support and attachment components for equipment, conduit, cable, boxes, and other electrical work.

# 1.02 RELATED REQUIREMENTS

A. Section 26 05 33, Raceway and Boxes for Electrical Systems

#### 1.03 REFERENCE STANDARDS

- A. ASTM A123/A123M Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2013.
- B. ASTM A153/A153M Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2009.
- C. ASTM B633 Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel; 2013.
- D. MFMA-4 Metal Framing Standards Publication; Metal Framing Manufacturers Association; 2004.
- E. NECA 1 Standard for Good Workmanship in Electrical Construction; National Electrical Contractors Association: 2010.
- F. NFPA 70 National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

## 1.04 ADMINISTRATIVE REQUIREMENTS

# A. Coordination:

- 1. Coordinate sizes and arrangement of supports and bases with the actual equipment and components to be installed.
- 2. Coordinate the work with other trades to provide additional framing and materials required for installation.
- 3. Coordinate compatibility of support and attachment components with mounting surfaces at the installed locations.
- 4. Coordinate the arrangement of supports with ductwork, piping, equipment and other potential conflicts installed under other sections or by others.
- 5. Notify Architect of any conflicts with or deviations from the contract documents. Obtain direction before proceeding with work.

#### 1.05 SUBMITTALS

- A. See Division 01 Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets for metal channel (strut) framing systems, non-penetrating rooftop supports, and post-installed concrete and masonry anchors.

### 1.06 QUALITY ASSURANCE

- A. Comply with NFPA 70.
- B. Comply with applicable building code.

#### **PART 2 - PRODUCTS**

#### 2.01 SUPPORT AND ATTACHMENT COMPONENTS

- A. General Requirements:
  - 1. Provide all required hangers, supports, anchors, fasteners, fittings, accessories, and hardware as necessary for the complete installation of electrical work.
  - 2. Provide products listed, classified, and labeled as suitable for the purpose intended, where applicable.
  - 3. Where support and attachment component types and sizes are not indicated, select in accordance with manufacturer's application criteria as required for the load to be supported with a minimum safety factor of 150% Include consideration for vibration, equipment operation, and shock loads where applicable.
  - 4. Do not use products for applications other than as permitted by NFPA 70 and product listing.
  - 5. Steel Components: Use corrosion resistant materials suitable for the environment where installed.
    - a. Zinc-Plated Steel: Electroplated in accordance with ASTM B633.
    - b. Galvanized Steel: Hot-dip galvanized after fabrication in accordance with ASTM A123/A123M or ASTM A153/A153M.
- B. Conduit and Cable Supports: Straps, clamps, etc. suitable for the conduit or cable to be supported.
  - 1. Conduit Straps: One-hole or two-hole type; steel or malleable iron.
  - 2. Conduit Clamps: Bolted type unless otherwise indicated.
  - 3. Manufacturers:

- a. Cooper Crouse-Hinds, a division of Eaton Corporation: www.cooperindustries.com.
- b. Erico International Corporation: www.erico.com.
- c. O-Z/Gedney, a brand of Emerson Industrial Automation: www.emersonindustrial.com.
- d. Thomas & Betts Corporation: www.tnb.com.
- e. Or Approved Equal
- C. Outlet Box Supports: Hangers, brackets, etc. suitable for the boxes to be supported.
  - 1. Manufacturers:
    - a. Cooper Crouse-Hinds, a division of Eaton Corporation: www.cooperindustries.com.
    - b. Erico International Corporation: www.erico.com.
    - c. O-Z/Gedney, a brand of Emerson Industrial Automation: www.emersonindustrial.com.
    - d. Thomas & Betts Corporation: www.tnb.com.
    - e. Or Approved Equal
- D. Metal Channel (Strut) Framing Systems: Factory-fabricated continuous-slot metal channel (strut) and associated fittings, accessories, and hardware required for field-assembly of supports.
  - 1. Comply with MFMA-4.
  - 2. Channel Material:
    - a. Indoor Dry Locations: Use painted steel, zinc-plated steel, or galvanized steel.
    - b. Outdoor and Damp or Wet Indoor Locations: Use galvanized steel.
  - 3. Manufacturers:
    - a. Cooper B-Line, a division of Eaton Corporation: www.cooperindustries.com.
    - b. Thomas & Betts Corporation: www.tnb.com.
    - c. Unistrut, a brand of Atkore International Inc: www.unistrut.com.
    - d. Substitutions: See Section 01 60 00 Product Requirements.
    - e. Source Limitations: Furnish channels (struts) and associated fittings, accessories, and hardware produced by a single manufacturer.

- E. Hanger Rods: Threaded zinc-plated steel unless otherwise indicated.
  - 1. Minimum Size, Unless Otherwise Indicated or Required:
    - a. Equipment Supports: 1/2 inch diameter.
    - b. Busway Supports: 1/2 inch diameter.
    - c. Single Conduit up to 1 inch (27mm) trade size: 1/4 inch diameter.
    - d. Single Conduit larger than 1 inch (27mm) trade size: 3/8 inch diameter.
    - e. Trapeze Support for Multiple Conduits: 3/8 inch diameter.
    - f. Outlet Boxes: 1/4 inch diameter.
    - g. Luminaires: 1/4 inch diameter.
- F. Non-Penetrating Rooftop Supports for Low-Slope Roofs: Steel pedestals with thermoplastic or rubber bases that rest on top of roofing membrane, not requiring any attachment to the roof structure and not penetrating the roofing assembly, with support fixtures as specified.
  - 1. Base Sizes: As required to distribute load sufficiently to prevent indentation of roofing assembly.
  - 2. Attachment/Support Fixtures: As recommended by manufacturer, same type as indicated for equivalent indoor hangers and supports.
  - 3. Mounting Height: Provide minimum clearance of 6 inches under supported component to top of roofing.
  - 4. Manufacturers:
    - a. Cooper B-Line, a division of Eaton Corporation: www.cooperindustries.com.
    - b. Erico International Corporation: www.erico.com.
    - c. Unistrut, a brand of Atkore International Inc: www.unistrut.com.
    - d. Or Approved Equal
- G. Anchors and Fasteners:
  - 1. Unless otherwise indicated and where not otherwise restricted, use the anchor and fastener types indicated for the specified applications.
  - 2. Concrete: Use preset concrete inserts, expansion anchors, or screw anchors.
  - 3. Solid or Grout-Filled Masonry: Use expansion anchors or screw anchors.
  - 4. Hollow Masonry: Use toggle bolts.

- 5. Hollow Stud Walls: Use toggle bolts.
- 6. Steel: Use beam clamps, machine bolts, or welded threaded studs.
- 7. Sheet Metal: Use sheet metal screws.
- 8. Wood: Use wood screws.
- 9. Plastic and lead anchors are not permitted.
- 10. Powder-actuated fasteners are not permitted.
- 11. Hammer-driven anchors and fasteners are not permitted.
- 12. Preset Concrete Inserts: Continuous metal channel (strut) and spot inserts specifically designed to be cast in concrete ceilings, walls, and floors.
  - a. Comply with MFMA-4.
  - b. Channel Material: Use galvanized steel.
  - c. Minimum Channel Thickness: Steel sheet, 12 gage, 0.1046 inch minimum base metal thickness.
  - d. Manufacturer: Same as manufacturer of metal channel (strut) framing system.
- 13. Post-Installed Concrete and Masonry Anchors: Evaluated and recognized by ICC Evaluation Service, LLC (ICC-ES) for compliance with applicable building code.
- 14. Manufacturers Mechanical Anchors:
  - a. Hilti, Inc: www.us.hilti.com.
  - b. ITW Red Head, a division of Illinois Tool Works, Inc: www.itwredhead.com.
  - c. Powers Fasteners, Inc: www.powers.com.
  - d. Or Approved Equal

# **PART 3 - EXECUTION**

#### 3.01 EXAMINATION

- A. Verify that field measurements are as shown on the drawings.
- B. Verify that mounting surfaces are ready to receive support and attachment components.
- C. Verify that conditions are satisfactory for installation prior to starting work.

#### 3.02 INSTALLATION

- A. Install products in accordance with manufacturer's instructions.
- B. Install support and attachment components in a neat and workmanlike manner in accordance with NECA 1.
- C. Install anchors and fasteners in accordance with ICC Evaluation Services, LLC (ICC-ES) evaluation report conditions of use where applicable.
- D. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
- E. Unless specifically indicated or approved by Architect, do not provide support from suspended ceiling support system or ceiling grid.
- F. Unless specifically indicated or approved by Architect, do not provide support from roof deck.
- G. Do not penetrate or otherwise notch or cut structural members without approval of Structural Engineer.
- H. Equipment Support and Attachment:
  - 1. Use metal fabricated supports or supports assembled from metal channel (strut) to support equipment as required.
  - 2. Use metal channel (strut) secured to studs to support equipment surface-mounted on hollow stud walls when wall strength is not sufficient to resist pull-out.
  - 3. Use metal channel (strut) to support surface-mounted equipment in wet or damp locations to provide space between equipment and mounting surface.
  - 4. Securely fasten floor-mounted equipment. Do not install equipment such that it relies on its own weight for support.
- I. Conduit Support and Attachment: Also comply with Section 26 05 33, Raceway and Boxes for Electrical Systems.
- J. Box Support and Attachment: Also comply with Section 26 05 33, Raceway and Boxes for Electrical Systems.
- K. Preset Concrete Inserts: Use manufacturer provided closure strips to inhibit concrete seepage during concrete pour.
- L. Secure fasteners according to manufacturer's recommended torque settings.
- M. Remove temporary supports.
- N. Identify independent electrical component support wires above accessible ceilings (only where specifically indicated or permitted) with color distinguishable from ceiling support wires in accordance with NFPA 70.

# 3.03 FIELD QUALITY CONTROL

- A. Inspect support and attachment components for damage and defects.
- B. Repair cuts and abrasions in galvanized finishes using zinc-rich paint recommended by manufacturer. Replace components that exhibit signs of corrosion.
- C. Correct deficiencies and replace damaged or defective support and attachment components.

# **END OF SECTION**

# SECTION 260533 – RACEWAY, BOXES AND CONDUITS FOR ELECTRICAL SYSTEMS

#### **PART 1 - GENERAL**

#### 1.01 WORK INCLUDED

- A. Provide raceways and conduits of specified types for all electrical systems wiring, except where clearly shown or specified otherwise. All fittings, boxes, hangers and appurtenances shall be included.
- B. Size raceways and conduits as specified. Where no size is indicated, conduit may be the minimum code permitted size for the quantity of conductors installed, based upon NEC tables for conductors with type THW/TW insulation.

#### **PART 2 - PRODUCTS**

## 2.01 METALLIC CONDUITS

- A. Galvanized Rigid Conduit (GRC): Smooth surfaced heavy wall mild steel tube of uniform thickness and temper, reamed and threaded at each end and protected inside and out with galvanizing, sherardizing, or equivalent process. GRC shall comply with NEC Article 346.
- B. Intermediate Metallic Conduit (IMC): Smooth surface, intermediate wall mild steel tube of uniform thickness and temper, reamed and threaded at each end, and protected inside and out with galvanizing, sherardizing, or equivalent process. IMC shall comply with NEC Article 345.
- C. Electrical Metallic Tubing (EMT): Smooth surface, thin wall mild steel tube of uniform thickness and temper, galvanized or sherardized on the outside, and enameled on the interior. EMT shall comply with NEC Article 348.
- D. Flexible Conduits (Flex):
  - 1. Flexible Metallic Conduit: Interlocking single strip steel construction, galvanized inside and out after fabrication. Flex shall comply with NEC Article 350.
  - 2. Liquid Tight: Similar to flexible metallic conduit, except encased in a liquid tight polyvinylchloride or equivalent outer jacket over the flexible steel core, and shall comply with NEC Article 351.

# 2.02 NON-METALLIC CONDUITS

- A. Underground Ducts:
  - 1. PVC, Encased Burial: Type EB for concrete encasement, shall meet or exceed the current requirements of EB-20/ASTM F512, NEMA TC-6 and U.L. 651. Rate for use with 90°C wire.
  - 2. PVC, Direct Burial: Type DB suitable for direct burial, shall meet or exceed the

current requirements of DB-20/ASTM F512 and NEMA TC-6. Rate for use with 90°C wire.

B. Rigid Non-Metallic Conduit: Type II PVC Schedule 40, suitable for use with 90°C rated wire. Conduit shall conform to UL Standard 65l and carry appropriate UL listing for above and below ground use.

#### 2.03 WIREWAYS

- A. Troughs: Steel, painted, square in cross section, preformed knock-outs on standard spacing, screw cover.
- B. Fittings: Tees, elbows, couplings as required for configuration shown on the Drawings.

## 2.04 FITTINGS

#### A. GRC and IMC:

- 1. Threaded Locknuts: Sealing type where used with NEMA 2, 3, 3R, 4 and 12 enclosures.
- 2. Threaded Bushings: 1 1/4 inch and larger, insulated, grounding type as required under Section 26 05 26, Grounding and Bonding for Electrical Systems.
- 3. Threaded Couplings: Standard threaded of the same material and as furnished with conduit supplied. Erickson type couplings may be used where required to complete conduit runs larger than 1 inch.

#### B. EMT:

- 1. Connectors: Steel compression ring or steel set screw type for conduit termination, with insulated throat, suitable for conditions used.
- 2. Steel EMT fittings are required to have at least 5% recycled steel content.
- 3. Use lay-in grounding type bushings where terminating grounding conductors.
- 4. Couplings: Steel compression ring or steel set screw type, concrete tight.
- C. Threadless: GRC and IMC couplings and box connectors may be steel threadless, compression ring or set screw type for use with conduits 1 inch and smaller where installed in poured concrete locations or where limited working space makes threaded fittings impractical.
- D. Weatherproof Connectors: Threaded.
- E. Expansion Couplings: Equal to O.Z. type EX with jumper.
- F. Seal-Offs: With filler fiber, compound, removable cover.

#### 2.05 METALLIC BOXES

- A. Flush and Concealed Outlet Boxes: For interior installation, provide:
  - 1. Electroplate Zinc galvanized stamped steel
  - 2. All interior installation backboxes are 4-inch square minimum, with 1-1/2-inch minimum depth
  - 3. Depth of backbox is required to be adjusted as required to meet current National Electrical code fill requirements
  - 4. Provide backboxes with screw ears for device ring mounting, knock-out plugs, mounting holes, and fixture studs if required
  - 5. Provide backboxes with green bolt, threaded ground conductor termination capability
  - 6. Terminate copper raceway bonding conductor at backbox threaded ground termination via green threaded bolt
  - 7. Terminate copper raceway bonding conductor on circuit ground conductor via conductor splice
  - 8. Isolated circuit ground conductors are not bonded to the backbox threaded ground termination
  - 9. RACO or equal
- B. Surface Outlet Boxes: Galvanized stamped steel same as above for use on ceilings; cast steel or aluminum with threaded hubs or bosses for use on walls.
- C. Large Boxes: Boxes exceeding 4-11/16 inches square when required shall be welded steel construction with screw cover and painted, steel gauge as required by physical size, Hoffman, Circle AW or equal.
- D. Systems: Boxes for systems devices shall be as recommended by the systems manufacturer, suitable for the equipment installed. Equip with grounding lugs, brackets, device rings, etc., as required.

#### **PART 3 - EXECUTION**

#### 3.01 INSTALLATION

- A. Mount backboxes staggered in wall framing spaces to reduce acoustic coupling from one space to another. Back to back backbox installation is not allowed.
- B. Conceal all conduits in finished spaces. Concealed conduits shall run in a direct line with long sweep bends and offsets. GRC and IMC embedded in concrete below grade or in damp locations shall be made watertight by painting the entire male thread with Rustoleum metal primer or equal before assembly.

- C. Route exposed conduit parallel or at right angles to structural building lines and neatly offset into boxes. Conduits attached directly to building surfaces shall closely follow the surfaces. Conduit fittings shall be used to "saddle" under beams. Drilling or notching of existing beams, trusses on structural members shall be coordinated with Architect prior to commencing.
- D. GRC and IMC terminations at boxes, cabinets, and general wiring enclosures shall be rigidly secured with double locknuts and bushings or approved fittings. Conduit shall be screwed in and shall engage at least five threads in hub where conduit boxes with threaded hubs or bosses are used. Insulating bushings shall be used for conduits 1-1/4 inches or larger.
- E. Keep conduit and raceways closed with suitable plugs or caps during construction to prevent entrance of dirt, moisture, concrete, or foreign objects. Raceways shall be clean and dry before installation of wire and at the time of acceptance.
- F. Pack spaces around conduits with polyethylene backing rods and seal with polyurethane caulking to prevent entrance of moisture where conduits are installed in sleeves or blockouts penetrating moisture barriers.

# 3.02 CONDUIT

- A. Minimum raceway size for power circuits is 3/4-inch, industry standard measure.
- B. Minimum raceway size for low energy control circuits is 1/2-inch, industry standard measure.
- C. Control circuits are to be routed via dedicated raceways, separate from power conductors. Control circuits with the same disconnecting means as the power circuit, and NEC compliant insulation matching the power circuit insulation rating may be routed in a common raceway with the power conductors.
- D. Raceways crossing structure expansion joints or structure seismic joints shall have adequate range (axial as well as transverse) of intrinsic motion compensation to meet the structure design motion limits.
- E. Provide NEC sized, bonded internal grounding continuity conductors within raceways crossing structure expansion joints or structure seismic joints as required to assure raceway ground continuity during and after the structure design motion limits.
- F. Structure design motion limits include shortening as well as lengthening of the instantaneous raceway length as compared to the circuit length. Conductors or cables installed in raceways crossing structure expansion joints or structure seismic joints shall have adequate coiled circuit length and coil storage space to meet the structure design motion limits. The conductors are expected to slide within the raceway system as required to maintain circuit continuity and insulation integrity during the structure design motion limits.
- G. Conduits for branch circuit use are required to have not more than 40% fill at the completion of the project.
- H. GRC may be used in all areas for wiring systems. GRC shall be installed for wiring

- underground in cast concrete construction, in damp locations, and in hazardous areas for serving fire pump controllers and where subject to mechanical injury with threaded fittings made up tight. IMC may be used in locations not in contact with earth or fill.
- I. EMT may be used in all other dry protected locations. Provide green equipment bonding conductor where used for power circuit feeders 2-inch and larger. EMT, whether exposed or concealed, shall be securely supported and fastened at intervals of nominally every 8 feet and within 24 inches of each outlet, ell, fitting, panel, etc.
- J. Flex shall be used for connections to vibration producing equipment and where installation flexibility is required with a minimum 12 inches slack connection. Limit flex length to 36 inches for exposed equipment connections and 72 inches in concealed ceiling and wall cavities. PVC jacketed flex shall be used in wet locations, areas subject to wash-down, and exterior locations.
- K. PVC Type II Schedule 40 may be used underground and in and under interior slabs, poured concrete walls, and where scheduled or noted on the Drawings. Make connections with waterproof solvent cement. Provide GRC at 60 degree and larger bends and where penetrating slabs.
- L. MC Cable may be used as permitted per NEC, state and local codes. MC Cable not permitted for feeders, service entrance feeders and homeruns.

#### 3.03 RACEWAYS

A. Surface metal wireways may be installed at locations to serve motor starters or other control devices where required by a multitude of wiring interconnections or physical layout.

### 3.04 FITTINGS

- A. Metallic raceways and conduits shall be assembled continuous and secured to boxes, panels, etc., with appropriate fittings to maintain electrical continuity. All conduit joints shall be cut square and reamed smooth with all fittings drawn up tight.
- B. Crimp-on, tap-on, indenter type, malleable iron or cast set screw fittings shall not be used.

#### 3.05 BOXES

- A. Boxes and outlets shall be mounted at nominal center line heights shown on the drawings. Adjust heights in concrete masonry unit (CMU) walls to prevent devices or finish plates from spanning masonry joints.
- B. Boxes are to be located and accessible for service, inspection or circuiting adjustment at the time of final project completion. Access clearance is required to meet current NEC, NESC, OHSA and NFPA 70E requirements.
- C. Permanently label all boxes per specification requirements. At a minimum, the panel of energization and circuit breaker number shall be visible.
- D. Circuiting exiting panel or switchboard enclosures shall have metal conduit protection.

- E. Outlet boxes shall be of code required size to accommodate all wires, fittings, and devices. Provide multi-gang boxes as required to accept devices installed with no more than one device per gang. Equip all metallic boxes with grounding provisions.
- F. Flush wall switch and receptacle outlets used with conduit systems shall be 4 inches square, 1-1/2 inches or deeper, with one or two-gang plaster ring mounted vertically. Where three or more devices are at one location, use one-piece multiple gang tile box or gang box with suitable device ring.
- G. Wall bracket and ceiling surface mounted luminaire outlets shall be 4-inch octagon 1-1/2 inches deep with 3/8-inch fixture stud where required. Wall bracket outlets to have single gang opening where required to accommodate fixture canopy. Provide larger boxes or extension rings where quantity of wires installed requires more cubic capacity.
- H. Junction boxes installed in accessible ceiling or wall cavities or exposed in utility areas shall be a minimum of 4 inches square, 1-1/2 inches deep with appropriately marked blank cover.
- I. Boxes for the special systems shall be suitable for the equipment installed. Coordinate size and type with the system supplier.
- J. Provide pull boxes where shown for installation of cable supports or where required to limit the number of bends in any conduit to not more than three 90-degree bends. Use galvanized boxes of code required size with removable covers installed so that covers will be accessible after work is completed.
- K. Recessed boxes shall be flush with finished surfaces or not more than 1/8-inch back. Set boxes level and plumb. Long screws with spacers or shims for mounting devices will not be acceptable. No combustible material shall be exposed to wiring at outlets.
- L. Covers for flush mounted boxes in finished spaces shall extend a minimum of 1/4-inch beyond the box edge to provide a finished appearance. Finish edge of cover to match cover face.
- M. Boxes installed attached to a stud in sheet rock walls shall be equipped with opposite side box supports equal to Caddy #760. Install drywall screw prior to finish taping. Methods used to attach boxes to studs shall not cause projections on the face of the stud to prevent full length contact of sheet rock to the stud face.

### 3.06 PULL WIRES

- A. Install nylon pull lines in all empty conduits larger than 1 inch where routing includes 25 feet or more in length or includes 180 degrees or more in bends.
- B. Where conduits requiring pull lines are stubbed out and capped, coil a minimum of 36 inches of pull line and tape at termination of conduit for easy future access. Label pull lines as to conduit starting or terminations point and intended future use.

### **END OF SECTION**

## SECTION 262000 - LOW-VOLTAGE ELECTRICAL DISTRIBUTION

## **PART 1 - GENERAL**

#### 1.01 WORK INCLUDED

- A. Furnish and install the materials for the complete secondary service and distribution system as specified herein and shown on the Drawings. Secondary distribution system shall be fully rated. Series rating shall not be acceptable.
- B. Provide a transformer pad and ground grid for use by the serving utility. Coordinate pad size, openings, type of construction, conduit arrangement and grounding requirements with the utility prior to construction.

#### 1.02 UTILITY METERING

- A. Provide utility metering facilities where indicated on the Drawings, complying with the established serving utility requirements. Provide quantity and style of meter sockets and accessories required by the utility.
- B. Include all metering charges or connection costs charged by the serving utility in the original proposal. Refer to Coordination of Work section of these Specifications.

#### 1.03 SUBMITTALS

- A. Shop drawings.
- B. Product data.
- C. Ground Fault Protection System Test Report.
- D. Coordination study.
- E. Operation and maintenance data.

#### **PART 2 - PRODUCTS**

#### 2.01 ACCEPTABLE MANUFACTURERS

A. Cutler Hammer, General Electric, Square D.

#### 2.02 MAIN DISTRIBUTION PANEL

- A. Panel: Sectionalized, floor standing, metal enclosed units containing molded or insulated case circuit breakers. Panel shall be listed by Underwriters' Laboratories and shall bear a UL label as suitable for use as service equipment; NEMA 3R Enclosure.
- B. Circuit Breakers: Main breakers and sub distribution feeder breakers shall be AC power type, dead front, with solid state trip devices. Interrupting rating shall be a minimum of 65,000 rms symmetrical amperes. Breakers shall be rated for standard continuous duty. Field adjustable trip functions shall consist of:

- 1. Long time ampere rating.
- 2. Long time delay.
- 3. Instantaneous pickup.
- 4. Short time pickup.
- 5. Short time delay.
- 6. Ground fault pickup.
- 7. Ground fault delay.
- C. Equip breakers with the following additional auxiliary devices:
  - 1. Shunt trip.
  - 2. Undervoltage trip.
  - 3. Normally (open) (closed) alarm switch.
  - 4. Electric operator.
  - 5. Ground fault test button.
  - 6. Ground fault trip indicator.
  - 7. Trip indication with auxiliary contacts.
  - 8. Overcurrent indication with auxiliary contacts.
- D. Equip breakers with zone selective interlocking on the (short time) (ground fault) (short time and ground fault) trip for maximum coordination.
- E. Bus work: Copper or aluminum, sized as shown on the Drawings, 100% neutral with a maximum hot-spot temperature rise of 65 degrees C. above an ambient of 40 degrees C. under continuous full load current and rated to withstand (42,000 A) (65,000 A) (100,000 A) fault current. Include bussing provisions for future devices in all spaces called for. Provide a copper ground bus in bottom of enclosure, full length of assembly.
- F. Digital Metering: Provide potential and current transformers, ammeter, voltmeter, power factor meter, required selector switches and associated accessories for monitoring the properties of the incoming secondary power as provided by the utility. Ammeter and voltmeter selector switches shall have provisions for reading individual phase amperes, individual phase to neutral volts, phase to phase volts and include a meter "off" position. Metering equipment shall be switchboard grade with nominal 2% accuracy.
- G. Finish: Primed and finished with not less than two coats of light gray enamel.

### 2.03 SUB-DISTRIBUTION PANELS

A. Panels: Similar in manufacture as the main distribution equipment, free standing, front

- operated circuit breaker type, fully enclosed with bussing provisions for future extension. Assemblies rated over 1000 amperes shall be of free-standing construction. Overcurrent protection ratings shall be as noted on the Drawings. All devices shall be capable of interrupting the fault current available.
- B. Bus Work: Copper or aluminum, sized as shown on the Drawings, 100% neutral with a maximum hot-spot temperature rise of 65 degrees C above an ambient of 40 degrees C under continuous full load current and rated to withstand 65,000 A fault currents. Include bussing provisions for mounting future devices in all spaces called for. Where panel configuration provides additional spaces within a section, these spaces shall be bussed to receive future devices. Make provisions for future extension of bussing. Provide a copper ground bus in bottom of enclosure.
- C. Circuit Breakers: Molded case, bolt-in thermal magnetic type. Breakers shall have short circuit capacity rating to withstand the maximum short circuit duty which can be expected at the breaker location in the electrical system. Minimum short circuit rating for any circuit breaker shall be 10,000 A.I.C. for 120V and 208V breakers, 14,000 A.I.C. for 277V and 480V breakers.
- D. Digital Sub-Metering: Provide metering provisions in separate sections of the distribution equipment to measure line amps and energy consumption of various selected loads indicated on the Drawings. Metering shall include the necessary potential and current transformers, ammeter with phase selector switch, watthour meter with demand register and associated accessories for recording the department usage on a regular basis. Metering equipment shall be switchboard grade with nominal 2% accuracy with provisions for flush mounting in the appropriate distribution panel section. Kilowatt hour meters shall be two stator polyphase complete with 15-minute interval sweep type demand register.
- E. Finish: Primed and finished with not less than two coats of light gray enamel.

#### 2.04 BRANCH PANELBOARDS

- A. Branch Circuit Panels: Bolt-in circuit breaker type with aluminum or copper bussing. Panels shall be fitted with flush lift latches and locks keyed alike, same as existing. Deliver all panel keys to the Owner at completion of the project.
- B. Main Circuit Breakers: Equip panels indicated with main circuit breakers sized as scheduled and mounted behind door at top of panel. Back feeding of branch circuit breakers is not acceptable.
- C. Branch Circuit Breakers: Molded case, thermal magnetic type. Breakers shall have short Circuit capacity rating to withstand the maximum short circuit duty which can be expected at the breaker location in the electrical system. Breakers mounted in branch panelboards shall be of the bolt-in type. Circuit breakers used for switching duty shall be UL listed for that purpose and marked "SWD". Minimum short circuit rating for any circuit breaker: 10,000 A.I.C. for 120V and 208V breakers, 14,000 A.I.C. for 277V and 480V breakers.
- D. Wiring Gutters: A minimum of 4 inches wide except where feeder conductors enter where a minimum of 6 inches clear shall be provided. Feeder conductors to enter directly in line with lug terminals wherever practicable. Provide separate feeder studs for each

feeder conductor compression lug.

- E. Cabinets: Flush doors with concealed hinges and mounting clamps equal to Square D Mono Flat, or ITE Decor trim. Surface panels shall have metal face trims with no sharp edges or corners. Finish surface panel tubs to match face trim. Equip with a sheet metal skirt to floor, finished to match panel to prevent dirt accumulation where conduits penetrate floor. Access panel on skirt may be screw type for access to interior.
- F. Ground Bus: Provide a grounding bus with termination capacity for the grounding conductor sized for the branch circuit equipment grounding conductors in isolated ground 208Y/120V panels identified by suffix IG. Grounding bus shall be (insulated from) (bonded to) the panel cabinet.

#### 2.05 DRY TYPE TRANSFORMERS

- A. Enclosed and ventilated, air cooled type, Class H insulation, designed for 115 degrees C temperature rise above 40 degrees C ambient temperature at full load continuous operation. Equip with two 2-1/2% FCAN taps and four 2-1/2% FCBN taps. Maximum sound level shall be N.E.M.A. standard with vibration isolators between the core and coil assembly and case.
- B. Case to be totally enclosed with louvers to prevent entry of foreign objects into the interior, manufactured in accordance with all NEMA & U.L. approval standards.
- C. Provide an isolation shield between the primary and secondary windings in transformers where noted or shown on the Drawings to attenuate line electrical disturbances. Insulate shield from the transformer windings and core and ground to transformer enclosure.

### **PART 3 - EXECUTION**

#### 3.01 INSTALLATION

- A. Install the secondary distribution system assemblies and equipment as shown on the Drawings, parallel and square with the building lines.
- B. Neatly lace and secure the conductors of the feeder circuits individually at maximum 2-foot intervals. The cable lugs shall not support the weight of the cables.
- C. Mount a spare fuse cabinet adjacent to each fusible distribution panel. Equip cabinet with one complete set of spare fuses of each size and type installed in the panel with appropriate fuse pullers.

#### 3.02 BRANCH PANELBOARDS

- A. Install panelboards plumb and level, located as shown on the Drawings up 6'-0" to top unless noted otherwise.
- B. Equip selected breakers with mechanical locking devices such that they may be locked in the "on" position. Selected breakers shall include those serving alarm systems, fire suppression systems, communications systems and other critical loads directed.
- C. Install a spare 3/4-inch conduit from flush panels for each three single pole breakers or

- spaces provided. Terminate conduits above accessible ceiling or as directed.
- D. Utilize circuit breakers in existing panels which are to remain. Where faulty or inadequate breakers are found in these panels, replace with suitable breakers from panels removed during demolition.
- E. Equip all circuit breakers associated with multi-wire branch circuit breakers with handle ties per NEC 210-4. Provide grouping of multi-wire branch circuits per NEC 210-4(D).

#### 3.03 TRANSFORMERS

- A. Install the indoor low voltage transformer with flexible conduit connections to housing. Make all cable and ground wire connections.
- B. In general, transformers will be floor mounted. When necessary to wall or trapeze mount, securely anchor to structure using a safety factory of 4.

### 3.04 CONCRETE PADS

A. Provide nominally 3 1/2-inch deep concrete housekeeping pads under all free-standing pieces of switchgear and floor mounted transformers. Pads shall extend nominally 2 inches beyond the edges of the equipment.

#### 3.05 COORDINATION AND ARC FLASH STUDY

- A. Provide arc flash study per NEC, IEEE 1584, and NFPA 70E.
- B. Coordination study shall be prepared for the electrical overcurrent devices to assure proper equipment and personnel protection.
- C. The study shall present an organized time-current analysis of each protective device in series from the individual device back to the source. The study shall reflect the operation of each device during normal and abnormal current conditions.
- D. The coordination study shall be prepared by qualified engineers of the switchgear manufacturer, Electro-Test, Electrical Systems Analysis, Inc. or approved. The contractor is responsible for providing all pertinent information required by the preparers to complete the study.
- E. The complete study shall include a system one-line diagram and protective coordination curves.
- F. Coordination curves shall be prepared to determine the required settings of protective devices to assure selective coordination. The curves shall graphically illustrate on loglog paper that adequate time separation exists between each protection device shall be plotted in such a manner that all upstream devices will be clearly depicted on one sheet. The following specified information shall also be shown on the coordination curves:
  - 1. Device identification.
  - 2. Voltage and current ratio for curves.
  - 3. 3-phase and 1-phase ANSI damage points for each transformer.

- 4. No-damage, melting, and clearing curves for fuses.
- 5. Cable damage curve.
- 6. Transformer in rush points.
- 7. Maximum short circuit cut-off pint.
- G. A table shall be developed to summarize the settings selected for the protective devices. Included in the table shall be the following:
  - 1. Device identification.
  - 2. Circuit breaker sensor rating, long-time, short-time, and instantaneous settings, and time bands.
  - 3. Fuse rating and type.
  - 4. Ground fault pickup and time delay.

# **END OF SECTION**

## **SECTION 262726 – WIRING DEVICES**

#### PART 1 - GENERAL

#### 1.01 WORK INCLUDED

A. Provide wiring devices and plates or blank plates only for all outlet boxes.

### 1.02 SUBMITTALS

A. Product data.

#### **PART 2 - PRODUCTS**

# 2.01 ACCEPTABLE MANUFACTURERS

A. Wiring Devices and Plates: Hubbell, Leviton, Pass & Seymour.

#### 2.02 MATERIALS

- A. Wiring devices shall be specification grade, with special devices as specified and required. Furnish a matching cap for all special purpose devices that do not have the common 120-volt NEMA 5-20R configuration.
- B. All lighting switches and duplex receptacles installed shall have similar appearance characteristics unless noted otherwise.

#### 2.03 WALL SWITCHES

- A. Line Voltage Switches: 20 ampere, 125-volt, quiet type, back and side wired. Verify finish color with architect. Hubbell CS-1221 series.
- B. Switch with pilot, lighted clear toggle, Hubbell HBL-1221-PL.
- C. Momentary Contact Switches: 15A, SPDT, center off. Verify finish color with architect. Hubbell HBL-1556.

# 2.04 RECEPTACLES

- A. Normal Power Duplex: 3-wire, 2-pole grounding, steel backstrap, NEMA 5-20R, back and side wired. Verify finish color with architect.
  - 1. General Application: Hubbell CR-5362 series.
- B. Ground Fault Interrupting Duplex: NEMA 5-20R. Verify finish color with architect. UL 943, Class A. Hubbell GFR-5352A series.
- C. Special Purpose Receptacles: As noted on Drawings with NEMA configurations.

#### 2.05 PLATES

A. Flush Finish Plates: Verify finish color with architect.

- B. Surface Covers: Galvanized or cadmium plated steel, 1/2" raised industrial type with openings appropriate for device installed.
- C. Weatherproof: Standard duplex GFI receptacle. Hubbell WP26MH cover mounted horizontally with hinges up. Special purpose receptacles. Hubbell WP723D.
- D. Identification: Identify receptacle plates with press on labels indicating serving panel and branch circuit number.

#### **PART 3 - EXECUTION**

### 3.01 INSTALLATION

- A. Devices and finish plates to be installed plumb with building lines. Wall mounted receptacles shall be installed vertically at centerline height shown on the Drawings. Unless otherwise noted on the drawings or shown/specified in the architectural drawings, details, and elevations the centerline of all receptacles shall be 18 inches above finished floor and the centerline of all light switches shall be 48 inches above finished floor per ADA. For all above counter devices, verify exact mounting heights with architectural drawings, details, and elevations.
- B. Finish plates and devices are not to be installed until final painting is complete. Scratched or splattered finish plates and devices will not be accepted.
- C. Provide weatherproof device covers on devices at all exterior locations and damp or wet label areas.

### 3.02 CORD CAPS

A. All special plugs provided with the receptacles shall be given to the Owner in their cartons with a letter stating the date and the Owner's representative that received the materials.

## 3.03 COORDINATION

- A. Refer to Architectural elevations, sections and details for exact locations.
- B. Coordinate with equipment installer the locations and methods of connection to devices mounted in cabinets, counters, work benches, service pedestals and similar equipment.

#### 3.04 TESTING

- A. Receptacles shall be tested for line to neutral, line to ground and neutral to ground faults. Correct any defective wiring.
- B. Test all GFI receptacles and replace defective units.

## **END OF SECTION**

#### **SECTION 311000 – SITE CLEARING**

#### PART 1 - GENERAL

#### 1.01 SUMMARY

- A. Section Includes:
  - 1. Protecting existing trees and vegetation to remain.
  - 2. Removing existing trees and other vegetation.
  - 3. Clearing and grubbing.
  - 4. Stripping and stockpiling topsoil.
  - 5. Removing above-grade and below-grade site improvements.
  - 6. Disconnecting, capping or sealing site utilities.

#### 1.02 SUBMITTALS

A. Product Data for each type of product indicated.

#### 1.03 MATERIAL OWNERSHIP

A. Except for stripped topsoil and other materials indicated to remain on Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site and disposed of properly.

#### 1.04 PROJECT CONDITIONS

- A. Traffic: minimize interference with adjoining roads, streets, walks and other adjacent occupied or used facilities during site-clearing operations.
  - 1. Do not close or obstruct streets, walks or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
  - 2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.
- B. Salvable Improvements: Carefully remove items indicated to be salvaged and store on Owner's premises where indicated.
- C. Utility Locator Service: Notify utility locator service for area where Project is located before site clearing.
- D. Do not commence site clearing operations until temporary erosion- and sedimentation-control and tree and vegetation-protection measures are in place.
- E. The following practices are prohibited within protection zones:
  - 1. Storage of construction materials, debris, or excavated material.

- 2. Parking vehicles or equipment.
- 3. Foot traffic.
- 4. Erection of sheds or structures.
- 5. Impoundment of water.
- 6. Excavation or other digging unless otherwise indicated.
- 7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.

#### 1.05 DEFINITIONS

A. Topsoil: Natural or cultivated surface-soil layer containing organic matter, sand, silt, and clay particles; friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than 2 inches in diameter; and free of weeds, roots, and other deleterious materials.

## **PART 2 - PRODUCTS**

### 2.01 MATERIALS

- A. Satisfactory Soil Material: Requirements for satisfactory soil material are specified in Section 31 20 00 "Earth Moving".
  - 1. Obtain approved borrow soil material off-site when satisfactory soil material is not available on-site.
- B. Combination of ryegrass and fine fescue grass seed or hydroseed mix. Contractor to submit proposed mix suitable for the site location for review prior to construction.

### **PART 3 - EXECUTION**

# 3.01 PREPARATION

- A. Protect and maintain benchmarks and survey control points from disturbance during construction.
- B. Locate and clearly identify trees, shrubs, and other vegetation to remain or to be relocated.
- C. Protect existing site improvements to remain from damage during construction.
  - 1. Restore damaged improvements to their original condition, as acceptable to Owner.

# 3.02 TEMPORARY EROSION AND SEDIMENTATION CONTROL

A. Provide temporary erosion- and sedimentation-control measures. Requirements for temporary erosion-and-sedimentation-control are specified in Section 31 25 00 "Erosion and Sedimentation Controls".

#### 3.03 TREE AND VEGETATION PROTECTION

- A. General: Protect trees and plants remaining on-site according to requirements below.
- B. Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations, in a manner approved by Owner.
- C. Where excavation for new construction is required within drip line of trees, hand clear and excavate to minimize damage to root systems. Use narrow-tine spading forks, comb soil to expose roots, and cleanly cut roots as close to excavation as possible.
  - 1. Cover exposed roots with burlap and water regularly.
  - 2. Temporarily support and protect roots from damage until they are permanently relocated and covered with soil.
  - 3. Coat cut faces of roots more than 1-1/2 inches in diameter with an emulsified asphalt or other approved coating formulated for use on damaged plant tissues.
  - 4. Cover exposed roots with wet burlap to prevent roots from drying out. Backfill with soil as soon as possible.
- D. Restore native surface with hydroseeding. Use a combination of ryegrass and fine fescues or equivalent for hydroseeding. Contractor to submit grass seed mix for approval prior to construction.

#### 3.04 UTILITIES

- A. Locate, identify, disconnect, and seal or cap utilities indicated to be removed or abandoned in place.
  - 1. Arrange with utility companies to shut off indicated utilities.
- B. Interrupting Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
  - 1. Notify Owner not less than two days in advance of proposed utility interruptions.
  - 2. Do not proceed with utility interruptions without Owner's written permission.
- C. Excavate for and remove underground utilities indicated to be removed.

## 3.05 CLEARING AND GRUBBING

- A. Remove obstructions, trees, shrubs, and other vegetation to permit installation of new construction. Removal includes digging out stumps and obstructions and grubbing roots.
  - 1. Do not remove trees, shrubs, and other vegetation indicated to remain or be relocated.
  - 2. Cut minor roots and branches of trees indicated to remain in a clean and careful manner where such roots and branches obstruct installation of new construction.
  - 3. Completely remove stumps and remove roots, obstructions, and debris to a depth

of 18 inches below exposed subgrade.

- 4. Use only hand methods for grubbing within protection zones.
- B. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.
  - 1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches and compact each layer to a density equal to adjacent original ground.

#### 3.06 TOPSOIL STRIPPING

- A. Remove sod and grass before stripping topsoil.
- B. Strip topsoil to depth of 6 inches in a manner to prevent intermingling with underlying subsoil or other waste materials.
- C. Stockpile topsoil away from edge of excavations without intermixing with subsoil. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust and erosion by water.

#### 3.07 SITE IMPROVEMENTS

- A. Remove existing above- and below-grade improvements as indicated and necessary to facilitate new construction.
- B. Remove paving, and curbs, at existing full-depth joints unless indicated otherwise. Neatly saw- cut length of existing pavement to remain with vertical faces prior to removing existing pavement.

# 3.08 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.
- B. Separate recyclable materials produced during site clearing from other nonrecyclable materials. Store or stockpile without intermixing with other materials and transport them to recycling facilities. Do not interfere with other Project work.

#### **SECTION 312000 – EARTH MOVING**

## **PART 1 - GENERAL**

## 1.01 SUMMARY

- A. Section Includes:
  - 1. Preparing subgrades
  - 2. Excavating and backfilling for structures.
  - 3. Base course for concrete pavers and pavements.
  - 4. Base course for asphalt paving.
  - 5. Excavating and backfilling for utility trenches.

#### 1.02 SUBMITTALS

- A. Product Data.
- B. Aggregate Sieve Analysis.

#### 1.03 DEFINITIONS

- A. Backfill: Soil material used to fill an excavation.
  - 1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
  - 2. Final Backfill: Backfill placed over initial backfill to fill a trench.
- B. Base Course: Course placed between the subbase course, or subgrade, and concrete, or hot-mix asphalt paving.
- C. Bedding Course: Course placed over the excavated subgrade in a trench before laying pipe.
- D. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.
- E. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.
  - 1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Engineer. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.
  - 2. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Engineer. Unauthorized excavation, as well as remedial work directed by Engineer, shall be without additional compensation.

- F. Fill: Soil materials used to raise existing grades.
- G. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.
- H. Subbase Course: Course placed between the subgrade and base course for hot-mix asphalt pavement, or cement concrete.
- I. Subgrade: Surface or elevation remaining after completing excavation, or the top surface of a fill or backfill immediately below subbase, drainage fill, drainage course, or topsoil materials.
- J. Utilities: On-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.
- K. Unified Soil Classification System:
  - 1. GW: Well-graded gravels; gravel/sand mixtures with little or no fines.
  - 2. GP: Poorly-graded gravels; gravel/sand mixtures with little or no fines.
  - 3. GM: Silty gravels; poorly-graded gravel/sand/silt mixtures.
  - 4. GC: Clayey gravels; poorly-graded gravel/sand/clay mixtures.
  - 5. SW: Well-graded sands' gravelly sands with little or no fines.
  - 6. SP: Poorly-graded sands; gravelly sands with little or no fines.
  - 7. SM: Silty sands; poorly, graded- sand/gravel/silt mixtures.
  - 8. SC: Clayey sands; poorly-graded sand/gravel/clay mixtures.
  - 9. ML: Inorganic silts; sandy, gravelly, or clayey silts.
  - 10. CL: Lean clays; inorganic, gravelly, sandy, or silty, low to medium-plasticity clays.
  - 11. OL: Organic, low-plasticity clays and silts.
  - 12. MH: Inorganic, elastic silts; sandy, gravelly or clayey elastic silts
  - 13. CH: Fat clays; high-plasticity, inorganic clays.
  - 14. OH: Organic, medium to high-plasticity clays and silts
  - 15. PT: Peat, humus, hydric soils with high organic content.

#### 1.04 PROJECT CONDITIONS

A. Utility Locator Service: Notify utility locator service for area where Project is located before beginning earth moving operations.

- B. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted in writing by Engineer and then only after arranging to provide temporary utility services according to requirements indicated.
- C. Site Information: Research public utility records and verify existing utility locations prior to ordering any material. Notify the Engineer immediately if any discrepancies are found in the project survey.

#### **PART 2 - PRODUCTS**

# 2.01 SOIL MATERIALS

- A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.
- B. Satisfactory Native Backfill Soils: Soil Classification Groups GW, GP, GM, SW, SP, and SM according to ASTM D 2487, or a combination of these groups; free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.
- C. Unsatisfactory Soils: Soil Classification Groups GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D 2487, or a combination of these groups.
  - 1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction.
- D. Subbase Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 1-1/2-inch and not more than 12 percent passing a No. 200 sieve.
- E. Base Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 95 percent passing a 1-1/2-inch sieve and not more than 8 percent passing a No. 200 sieve or use Oregon Standard Specifications for Construction 3/4-inch-0" BASE AGGREGATE.
- F. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; with at least 90 percent passing a 3-inch sieve and not more than 12 percent passing a No. 200 sieve.
- G. Bedding Course: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; except with 100 percent passing a 1-inch sieve and not more than 5 percent passing a No. 200 sieve or use Oregon Standard Specifications for Construction 3/4-inch—0-inch BASE AGGREGATE.
- H. Drainage Course: Narrowly graded mixture of washed crushed stone, or crushed or uncrushed gravel; ASTM D 448; coarse-aggregate grading Size 57; with 100 percent passing a 1-1/2-inch sieve and 0 to 5 percent passing a No. 8 sieve.
- I. Backfill and Fill:
  - 1. Satisfactory native soil materials

2. Initial trench backfill: Use OREGON STANDARD SPECIFICATIONS FOR CONSTRUCTION (3/4-inch – 0-inch) base aggregate.

### 2.02 ACCESSORIES

- A. Detectable Warning Tape: Acid- and alkali-resistant, polyethylene film warning tape manufactured for marking and identifying underground utilities, a minimum of 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility, with metallic core encased in a protective jacket for corrosion protection, detectable by metal detector when tape is buried up to 30 inches deep; colored to comply with local practice or requirements of authorities having jurisdiction or as follows:
  - 1. Red: electric.
  - 2. Yellow: Gas, oil, steam, and dangerous materials.
  - 3. Orange: telephone and other communications.
  - 4. Blue: Water systems.
  - 5. Green: Sewer systems.
- B. Tracer Wire: 12 AWG minimum solid copper insulated High Molecular Weight Polyethylene (HMW PE) tracer wire or approved equal. The tracer wire insulation shall be green for sewer pipe and blue for waterlines and be a minimum of 45 mil. thick. Joints or splices shall be waterproof. The wire shall be rated for 30 Volt.
- C. Separation Fabric: Woven geotextile, specifically manufactured as a separation geotextile; made from polyolefins, polyesters, or polyamides; and with the following minimum properties determined according to ASTM D 4759 and referenced standard test methods:
  - 1. Grab Tensile Strength: 180 lbf; ASTM D 4632.
  - 2. Tear Strength: 68 lbf; ASTM D 4533.
  - 3. Puncture Strength: 371 lbf; ASTM D 4833.
  - 4. Apparent opening size: No. 30; ASTM D 4751.

### **PART 3 - EXECUTION**

### 3.01 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth moving operations. Provide protective insulating materials as necessary.
- B. Preparation of subgrade for earthwork operations including removal of vegetation, topsoil, debris, obstructions, and deleterious materials from ground surface is specified in Division 31 Section "Site Clearing."
- C. Protect and maintain erosion and sedimentation controls, which are specified in Division 31 Section" Erosion and Sediment Control" during earth moving operations.

- D. Prevent surface water and ground water from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.
- E. Protect subgrades and foundation soils from freezing temperatures and frost. Remove temporary protection before placing subsequent materials.
- F. Protect subgrades from softening, undermining, washout, and damage by rain or water accumulation.
- G. Protect all areas designated to receive pervious pavers or pervious pavement from excessive compaction.

#### 3.02 EXPLOSIVES

1. Explosives: Do not use explosives.

#### 3.03 EXCAVATION

- A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions without prior approval by the Engineer.
  - 1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.

### 3.04 EXCAVATION FOR STRUCTURES

A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch (25 mm). If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.

#### 3.05 EXCAVATION FOR PAVEMENTS

A. Excavate surfaces under pavements to indicated lines, cross sections, elevations, and subgrades.

## 3.06 EXCAVATION FOR UTILITY TRENCHES

- A. Excavate trenches to indicated gradients, lines, depths, and elevations.
- B. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit unless otherwise indicated.
  - 1. Clearance: Refer to plans for clearance widths.
- C. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade and bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench subgrade.

- 1. Excavate trenches 6 inches deeper than elevation required in rock or other unyielding bearing material, or per Oregon Standard Drawing RD300. Hand excavate for bell of pipes.
- 2. Excavate utility structures to provide 6 inches clearance (enlarge as needed) to allow for compaction of backfill material.

### 3.07 SUBGRADE INSPECTION

- A. Proof-roll subgrade with a pneumatic-tired dump truck to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.
- B. Soft pockets and areas of excess yielding that have been identified shall be scarified and moistened or aerated, or removed and replaced with suitable soil materials to the depth required. Re-compact and retest until specified compaction is obtained.
- C. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Engineer, without additional compensation.

#### 3.08 UNAUTHORIZED EXCAVATION

- A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill, with 28-day compressive strength of 2500 psi, may be used when approved by Engineer.
  - 1. Fill unauthorized excavations under other construction, pipe, or conduit as directed by Engineer.

### 3.09 STORAGE OF SOIL MATERIALS

- A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
  - 1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

#### 3.10 BACKFILLS AND FILLS

- A. Backfill: Place and compact backfill in excavations promptly, but not before completing the following:
  - 1. Construction below finish grade including.
  - 2. Surveying locations of underground utilities for record documents.
  - 3. Inspecting and testing underground utilities.
  - 4. Removing concrete formwork.
  - 5. Removing trash and debris.
  - 6. Removing temporary shoring and bracing, and sheeting.

## 3.11 UTILITY TRENCH BEDDING

- A. Place bedding on subgrades free of mud, frost, snow, or ice.
- B. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.

#### 3.12 UTILITY TRENCH BACKFILL

- A. Trenches under Footings: Backfill trenches excavated under footings with satisfactory soil or approved backfill to within 18 inches from the bottom of footings elevation; fill remaining trench excavation with concrete up to the elevation of bottom of footings. Concrete is specified in "Cast-in-Place Concrete."
- B. Place and compact initial trench backfill material, backfill sizes per Oregon Standard Drawing RD300 and Oregon Standard Specifications for Construction Section 00405.
  - 1. Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of piping or conduit to avoid damage or displacement of piping or conduit. Coordinate backfilling with utilities testing.
- C. Place and compact final backfill of satisfactory native soil to final subgrade elevation.
- D. Install warning tape per Oregon Standard Drawing RD300.
- E. Install tracer wire in a continuous fashion above the utility in such a manner as to be able to properly trace utility lines without loss or deterioration of signal or without the transmitted signal migrating off the tracer wire. Bring tracer wire to the surface at every box, vault, drainage structure, or manhole.

# 3.13 SOIL FILL

- A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.
- B. Place and compact fill material in layers to required elevations as follows:
  - 1. Under grass and planted areas, use satisfactory soil material.
  - 2. Under walks and pavements, use satisfactory soil material.
  - 3. Under footings and foundations, use engineered fill.
  - 4. Under and around utility structures, use engineered fill.

## 3.14 SOIL MOISTURE CONTROL

- A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.
  - 1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.

2. Remove and replace, or scarify and air dry, otherwise satisfactory soil material that exceeds optimum moisture content by 3 percent and is too wet to compact to specified dry unit weight.

### 3.15 COMPACTION OF SOIL BACKFILLS AND FILLS

- A. Place backfill and fill soil materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.
- B. Place backfill and fill soil materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.
- C. Compact soil materials to not less than the following percentages of maximum dry unit weight according to ASTM D 698:
  - 1. Under pavements, scarify and recompact top 12 inches of existing subgrade and each layer of backfill or fill soil material at 95 percent.
  - 2. Under walkways, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 92 percent.
  - 3. Under turf or unpaved areas, scarify and recompact top 6 inches below subgrade and compact each layer of backfill or fill soil material at 85 percent.
  - 4. For utility trenches, compact each layer of initial and final backfill soil material at 95 percent.

#### 3.16 GRADING

- A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
- B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:
  - 1. Unpaved Areas: Plus or minus 1 inch.
  - 2. Pavements: Plus or minus 1/2 inch.

# 3.17 SUBBASE AND BASE COURSES UNDER PAVEMENTS

- A. Place subbase course on subgrades free of mud, frost, snow, or ice.
- B. On prepared subgrade, place subbase course under pavements and walks as follows:
  - 1. Shape subbase course to required crown elevations and cross-slope grades.
  - 2. Place subbase course that exceeds 6 inches in compacted thickness in layers of equal thickness, with no compacted layer more than 6 inches thick or less than 3 inches thick.
  - 3. Compact subbase course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of maximum dry unit weight according to ASTM D 698.

### 3.18 FIELD QUALITY CONTROL

- A. Testing Agency: Contractor will engage a qualified geotechnical engineering testing agency to perform tests and inspections.
- B. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.
- C. Testing Agency will test compaction of soils in place according to ASTM D 1556, ASTM D 2167, ASTM D 2922, ASTM D 2937, as applicable. Tests will be performed at the following locations and frequencies:
  - 1. Paved areas: At subgrade and at each compacted fill and backfill layer, at least one test for every 2000 sq. ft. or less of paved, but in no case fewer than three tests.
  - 2. Trench Backfill: At each compacted initial and final backfill layer, at least one test for each 150 feet or less of trench length, but no fewer than two tests.
- D. With the approval of the Engineer, proof-roll testing of subgrade and/or aggregate base may be substituted for other compaction testing.
- E. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; recompact and retest until specified compaction is obtained.

### 3.19 PROTECTION

- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
- C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
  - 1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.
- D. Weather permitting and as approved, stormwater infiltration facility plants shall be installed as soon as possible after placing and grading the growing media in order to minimize erosion and further compaction.

### 3.20 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Remove surplus satisfactory soil and waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

### **END OF SECTION**

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### SECTION 312500 - TEMPORARY EROSION AND SEDIMENT CONTROL

#### PART 1 - GENERAL

#### 1.01 SUMMARY:

- A. This section includes the following:
  - 1. Prevention of erosion due to construction activities.
  - 2. Prevention of sedimentation of waterways, open drainage ways, and storm and sanitary sewers due to construction activities.

# 1.02 PERFORMANCE REQUIREMENTS

- A. Comply with all requirements of U.S. Environmental Protection Agency for erosion and sedimentation control, as specified for the National Pollutant Discharge Elimination System (NPDES), under requirements for the 2012 General Permit for Discharges from Construction Activities.
- B. Also comply with all more stringent requirements of State of Oregon Erosion and Sedimentation Control Manual.
- C. Follow an Erosion and Sedimentation Control Plan.
- D. Do not begin clearing, grading, or other work involving disturbance of ground surface cover until applicable permits have been obtained; furnish all documentation required to obtain applicable permits.
- E. Timing: Put preventive measures in place as soon as possible after disturbance of surface cover and before precipitation occurs.
- F. Storm Water Runoff: Control increased storm water runoff due to disturbance of surface cover due to construction activities for this project.
  - 1. Prevent runoff into storm and sanitary sewer systems, including open drainage channels, in excess of actual capacity or amount allowed by authorities having jurisdiction, whichever is less.

# G. Inspections:

- 1. Inspections must be conducted by a person who:
  - a) Is knowledgeable in the principle and practice of erosion and sediment controls, and
  - b) Possesses the skills to assess conditions at the construction site that could impact stormwater quality, and
  - c) Is knowledgeable in the correct installation of the erosion and sediment controls, and
  - d) Is able to assess the effectiveness of sediment and erosion control

measures selected to control the quality of stormwater discharges from the construction activity.

- 2. Visual monitoring requirement: all areas of the site disturbed by construction activity must be inspected to ensure that BMPs are in working order. Locations where vehicles enter or exit the site shall be inspected for evidence of off-site sediment tracking as well as areas used for storage of materials that are exposed to precipitation for evidence of spillage or other potential to contaminate stormwater runoff. In addition, inspect all discharge points identified in the ESCP for evidence of or the potential for the discharge of pollutants, and to ascertain whether erosion and sediment control measures are effective in preventing significant impacts to surface waters. Where discharge points are inaccessible, nearby downstream locations must be inspected to the extent that such inspections are practicable.
- 3. All ESCP controls and practices must be inspected according to the following schedule:

Site Condition	Minimum Frequency
1. Active Period.	Daily when stormwater runoff,
	including runoff from snowmelt, is
	occurring. At least once every two
	weeks, regardless of whether
	stormwater runoff is occurring.
2. Prior to the site becoming inactive	Once to ensure that erosion and
or in anticipation of site	sediment control measures are in
inaccessibility.	working order. Any necessary
	maintenance and repair must be made
	prior to leaving the site.
3. Inactive periods greater than 14	Once every 2 weeks.
consecutive calendar days.	
4. Periods during which the site is	If practical, inspections must occur
inaccessible due to inclement	daily at a relevant and accessible
weather.	discharge point or downstream
	location.

- 4. Recordkeeping Requirements: Document all visual inspections in an onsite logbook. If there are no findings, simply record the inspection date, and inspector's name. In addition, record any findings, including:
  - a) At the designated discharge location(s):
    - i. Where to make observations:
      - a. At the discharge location if the discharge is to a conveyance system leading to surface waters;
      - b. From the discharge point to 50 feet downstream if the discharge is to surface waters; and
      - c. At any location where more than 1/2 of the width of the receiving surface water is affected.
    - ii. How to make observations:

- a. For turbidity and color, describe any apparent color and the clarity of the discharge, and any apparent difference in comparison with surface waters.
- b. Describe any sheen or floating material, or record that it is absent. If present, it could indicate concern about a possible spill or leakage from vehicles or materials storage.
- b) If a site is inaccessible due to inclement weather, record the inspections noted at a relevant discharge point or downstream location, if practical.
- c) Locations of BMPs that need to be maintained, inspections of all BMPs, including erosion and sediment controls, chemical and waste controls, locations where vehicles enter and exit the site, status of areas that employ temporary or final stabilization control, soil stockpile area, and non-stormwater pollution (e.g. paints, oils, fuels, adhesives) controls.
- d) Locations of BMPs that failed to operate as designed or proved inadequate for a particular location;
- e) Locations where additional BMPs are needed that did not exist at the time of inspection; and
- f) Corrective action required and implementation dates.
- All inspection records and monitoring results must be kept on site and maintained by the permit registrant. The records shall list the construction site name as it appears on the registrant's permit and the file or site number. These records must be made available to DEQ, Agent, or local municipality upon request. These records must be delivered or made available to DEQ within 3 working days of request. These inspection records and monitoring results must be maintained for at least 3 years after project completion. In addition, a copy of the ESCP and revisions must be retained on site and made available on request to the DEQ, Agent, or the local municipality. During inactive periods of greater than 7 consecutive calendar days, the ESCP must be retained by the permit registrant but does not need to be at the construction site.
- H. Erosion On-Site: Minimize wind, water, and vehicular erosion of soil on project site due to construction activities for this project.
  - 1. Control movement of sediment and soil from temporary stockpiles of soil.
  - 2. Prevent development of ruts due to equipment and vehicular traffic.
  - 3. If erosion occurs due to non-compliance with these requirements, restore eroded areas at no cost to Owner.
- I. Erosion Off-Site: Prevent erosion of soil and deposition of sediment on other properties due to construction activities for this project.
  - 1. Prevent windblown soil from leaving the project site.

- 2. Prevent tracking of mud onto public roads outside site.
- 3. Prevent mud and sediment from flowing onto sidewalks and pavements.
- 4. If erosion occurs due to non-compliance with these requirements, restore eroded areas at no cost to Owner.
- J. Sedimentation of Waterways On Site: Prevent sedimentation of waterways on the project site, including rivers, streams, lakes, ponds, open drainage ways, storm sewers, and sanitary sewers.
  - 1. If sedimentation occurs, install or correct preventive measures immediately at no cost to Owner; remove deposited sediments; comply with requirements of authorities having jurisdiction.
  - 2. If sediment basins are used as temporary preventive measures pump dry and remove deposited sediment after each storm.
- K. Sedimentation of Waterways Off-Site: Prevent sedimentation of waterways off the project site, including rivers, streams, lakes, ponds, open drainage ways, storm sewers, and sanitary sewers.
  - 1. If sedimentation occurs, install or correct preventive measures immediately at no cost to Owner; remove deposited sediments; comply with requirements of authorities having jurisdiction.
- L. Open Water: Prevent standing water that could become stagnant.
- M. Maintenance: Maintain temporary preventive measures until permanent measures have been established.

### 1.03 SUBMITTALS

- A. Product Data: For materials indicated in ESCP and additional materials included in ESCP revisions.
- B. Inspection Reports: Submit report of each inspection; identify each preventive measure, indicate condition, and specify maintenance or repair required and accomplished.

### **PART 2 PRODUCTS**

### 2.01 MATERIALS

- A. Bio-filtration Bags: Bark or woodchip filled bag of flexible netting.
  - 1. Fill material shall be clean, 100 percent recycled wood or compost product.
  - 2. Bags shall be made of nylon mesh.
- B. Silt Fence Fabric: Polypropylene geotextile resistant to common soil chemicals, mildew, and insects; non-biodegradable; in longest lengths possible; with the following properties:
  - 1. Average Opening Size: 30 U.S. Std. Sieve, maximum, when tested in accordance

with ASTM D 4751.

- 2. Permittivity: 0.05 sec^-1, minimum, when tested in accordance with ASTM D 4491.
- 3. Ultraviolet Resistance: Retaining at least 70 percent of tensile strength, when tested in accordance with ASTM D 4355 after 500 hours exposure.
- 4. Tensile Strength: 100 lb-f, minimum, in cross-machine direction; 124 lb-f, minimum, in machine direction; when tested in accordance with ASTM D 4632.
- 5. Elongation: 15 to 30 percent, when tested in accordance with ASTM D 4632.
- 6. Tear Strength: 55 lb-f, minimum, when tested in accordance with ASTM D 4533.
- 7. Color: Manufacturer's standard, with embedment and fastener lines preprinted.
- C. Silt Fence Posts: One of the following, minimum 4 feet long:
  - 1. Steel U- or T-section, with minimum mass of 1.33 lb per linear foot.
  - 2. Softwood, 4 by 4 inches in cross-section.
  - 3. Hardwood, 2 by 2 inches in cross-section.

#### **PART 3 EXECUTION**

### 3.01 EXAMINATION

A. Examine site and identify existing features that contribute to erosion resistance; maintain such existing features to greatest extent possible.

#### 3.02 PREPARATION

A. Schedule work so that soil surfaces are left exposed for the minimum amount of time.

#### 3.03 SCOPE OF PREVENTIVE MEASURES

- A. In all cases, if permanent erosion resistant measures have been installed temporary preventive measures are not required.
- B. Construction Entrances: Traffic-bearing aggregate surface.
  - 1. Width: As required; twenty (20) feet, minimum.
  - 2. Length: fifty (50) feet, minimum.
  - 3. Provide at each construction entrance from public right-of-way.
  - 4. Where necessary to prevent tracking of mud onto right-of-way, provide wheel washing area out of direct traffic lane, with drain into sediment trap or basin.
- C. Linear Sediment Barriers: Made of silt fences, wattles, or compost socks.

- 1. Provide linear sediment barriers:
  - a) Along downhill perimeter edge of disturbed areas, including soil stockpiles.
- 2. Space sediment barriers with the following maximum slope length upslope from barrier:
  - a) Slope of Less Than 2 Percent: 100 feet.
  - b) Slope Between 2 and 5 Percent: 75 feet.
  - c) Slope Between 5 and 10 Percent: 50 feet.
  - d) Slope Between 10 and 20 Percent: 25 feet.
  - e) Slope Over 20 Percent: 15 feet.
- D. Soil Stockpiles: Protect using one of the following measures:
  - 1. Cover with polyethylene film, secured by placing soil or sand bags on outer edges.
  - 2. Cover with mulch at least 4 inches thickness of pine needles, sawdust, bark, wood chips, or shredded leaves; or, 6 inches of straw or hay;
    - a) as approved by Owner's Representative.
- E. Temporary Seeding: Use where temporary vegetated cover is required.

### 3.04 INSTALLATION

- A. Temporary Traffic-Bearing Aggregate Surface:
  - 1. Excavate minimum of 6 inches.
  - 2. Place geotextile fabric full width and length, with minimum 12 inch overlap at joints.
  - 3. Place and compact at least 6 inches of 1.5 to 3.5 inch diameter stone.
- B. Silt Fences:
  - 1. Store and handle fabric in accordance with ASTM D 4873.
  - 2. Use nominal 36 inch high barriers with minimum 48 inch long posts spaced at 6 feet maximum, with fabric embedded at least 6 inches in ground.
  - 3. Install with top of fabric at nominal height and embedment as specified.
  - 4. Do not splice fabric width; minimize splices in fabric length; splice at post only, overlapping at least 18 inches, with extra post.
  - 5. Fasten fabric to wood posts using one of the following:

- a) Integral pockets.
- b) Four 3/4 inch diameter, 1 inch long, 14 gage nails.
- c) Five 17-gage staples with 3/4 inch wide crown and 1/2 inch legs.
- 6. Fasten fabric to steel posts using wire, nylon cord, or integral pockets.
- 7. Wherever runoff will flow around end of barrier, provide temporary splash pad or other outlet protection.

# C. Bio-Filter Bag:

- 1. Install bags in continuous rows with ends butting tightly, with one bag at each end of row turned uphill.
- 2. Anchor bags with at least two stakes per bag, into the ground.

### 3.05 MAINTENANCE

- A. Inspect preventive measures routinely (daily), within 24 hours after the end of any storm that produces 0.5 inches or more rainfall at the project site, and daily during prolonged rainfall.
- B. Repair deficiencies immediately.
- C. Silt Fences:
  - 1. Promptly replace fabric that deteriorates unless need for fence has passed.
  - 2. Remove silt deposits that exceed one-third of the height of the fence.
  - 3. Repair fences that are undercut by runoff or otherwise damaged, whether by runoff or other causes.

#### D. Bio-Filtration Bags:

- 1. Promptly replace bags that fall apart or otherwise deteriorate unless need has passed.
- 2. Remove silt deposits that exceed one-half of the height of the bags.
- 3. Repair bag rows that are undercut by runoff or otherwise damaged, whether by runoff or other causes.
- E. Clean out temporary sediment control structures weekly and relocate soil on site.
- F. Place sediment in appropriate locations on site; do not remove from site.

#### 3.06 CLEAN UP

A. Remove temporary measures after permanent measures have been installed, unless permitted to remain by Owners Representative.

B.	Clean out temporary sediment control structures that are to remain as permanent measures.
C.	Where removal of temporary measures would leave exposed soil, shape surface to an acceptable grade and finish to match adjacent ground surfaces.

# **END OF SECTION**

### **SECTION 321216 – ASPHALT PAVING**

### **PART 1 - GENERAL**

### 1.01 SUMMARY

- A. Section Includes:
  - 1. Hot-mix asphalt patching.
  - 2. Hot-mix asphalt paving.
  - 3. Related Requirements:
    - a) Section 31 20 00 "Earth Moving" for subgrade preparation, fill material, aggregate subbase and base courses, and aggregate pavement shoulders.

### 1.02 SUBMITTALS

- A. Product Data: For each type of product. Include technical data and tested physical and performance properties.
  - 1. Job-Mix Designs: Certification, by authorities having jurisdiction, of approval of each job mix proposed for the work.
  - 2. Job-mix Designs: For each job mix proposed for the Work.
- B. Material Certificates: For each paving material.

### 1.03 OUALITY ASSURANCE

- A. Regulatory Requirements: Comply with materials, workmanship, and other applicable requirements of Section 00744 of the 2018 Oregon Standard Specifications for Construction for asphalt paving work.
  - 1. Measurement and payment provisions and safety program submittals included in standard specifications do not apply to this Section.

# 1.04 PROJECT CONDITIONS

- A. Environmental Limitations: Do not apply asphalt materials if subgrade is wet or excessively damp, if rain is imminent or expect before time required for adequate cure, or if the following conditions are not met:
  - 1. Tack Coat: Minimum surface temperature of 60 deg F.
  - 2. Asphalt Base and Surface Course:

Dense Graded MixesSurface TemperatureLess than 2 inches60 degrees F2 inches - 2 1/2 inches50 degrees FGreater than 2 1/2 inches40 degrees F

- 3. If placing asphalt between March 15 and September 30, temperature may be lowered 5 degrees F.
- 4. Do not use field burners or other devices to heat the pavement to the specified minimum temperature.

#### **PART 2 - PRODUCTS**

#### 2.01 AGGREGATES

A. Conform to the requirements of 00744 of the 2018 Oregon Standard Specifications for Construction.

### 2.02 ASPHALT MATERIALS

- A. Asphalt Binder: AASHTO M 320 or AASHTO MP 1a, PG 64-22
- B. Tack Coat: ASTM D 977 or AASHTO M 140 emulsified asphalt.

#### 2.03 AUXILIARY MATERIALS

- A. Recycled Materials for Hot-Mix Asphalt Mixes: Reclaimed asphalt pavement; reclaimed, unbound-aggregate base material; and recycled tires, asphalt shingles, or glass from sources and gradations that have performed satisfactorily in previous installations, equal to performance of required hot-mix asphalt paving produced from all new materials.
- B. Herbicide: Commercial chemical for weed control, registered by the EPA. Provide in granular, liquid, or wettable powder form.

### 2.04 MIXES

- A. Recycled Content of Hot-Mix Asphalt: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 10 percent or more than 30percent by weight.
  - 1. Surface Course Limit: Recycled content no more than 30percent by weight.
- B. Hot-Mix Asphalt: Dense-graded, hot-laid, hot-mix asphalt plant mixes approved by Oregon Parks and Recreation and complying with the following requirements:
  - 1. Provide mixes with a history of satisfactory performance in geographical area where Project is located.
  - 2. Provide mixes conforming to section 00744 of the 2015 Oregon Standard Specifications for Construction.
  - 3. AC Base Course: Level 2, 1/2 inch dense, HMAC.

### **PART 3 - EXECUTION**

### 3.01 EXAMINATION

A. Proof-roll subgrade below pavements with heavy pneumatic-tired equipment to identify

soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.

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

#### 3.02 PATCHING

- A. Asphalt Pavement: Saw cut perimeter of patch and excavate existing pavement section to sound base. Excavate rectangular or trapezoidal patches, extending 12 inches into perimeter of adjacent sound pavement, unless otherwise indicated. Cut excavation faces vertically. Remove excavated material. Recompact existing unbound-aggregate base course to form new subgrade.
- B. Tack Coat: Apply tack coat uniformly to vertical asphalt surfaces. Apply at a rate of 0.05 to 0.15 gal./sq. yd..
  - 1. Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.
  - 2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.
- C. Placing Patch Material: Fill excavated pavement areas with hot-mix asphalt base mix for full thickness of patch and, while still hot, compact flush with adjacent surface.
- D. Asphalt and sand seal edges where new asphalt concrete meets existing pavement.

### 3.03 SURFACE PREPARATION

- A. General: Immediately before placing asphalt materials, remove loose and deleterious material from substrate surfaces. Ensure that prepared subgrade is ready to receive paving.
- B. Proof-roll subgrade below pavements with heavy pneumatic-tired equipment to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.
- C. Herbicide Treatment: Apply herbicide according to manufacturer's recommended rates and written application instructions. Apply to dry, prepared subgrade or surface of compacted-aggregate base before applying paving materials.
- D. Tack Coat: Apply uniformly to surfaces of existing pavement at a rate of 0.05 to 0.15 gal./sq. yd. .
  - 1. Allow tack coat to cure undisturbed before applying hot-mix asphalt paving.
  - 2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

# 3.04 PLACING HOT-MIX ASPHALT

- A. Machine place hot-mix asphalt on prepared surface, spread uniformly, and strike off. Place asphalt mix by hand in areas inaccessible to equipment in a manner that prevents segregation of mix. Place each course to required grade, cross section, and thickness when compacted.
  - 1. Spread mix at a minimum temperature of 250 deg F.

- 2. Regulate paver machine speed to obtain smooth, continuous surface free of pulls and tears in asphalt-paving mat.
- B. Place paving in consecutive strips not less than 10 feet wide unless infill edge strips of a lesser width are required.
- C. Promptly correct surface irregularities in paving course behind paver. Use suitable hand tools to remove excess material forming high spots. Fill depressions with hot-mix asphalt to prevent segregation of mix; use suitable hand tools to smooth surface.

#### 3.05 JOINTS

- A. Construct joints to ensure a continuous bond between adjoining paving sections. Construct joints free of depressions, with same texture and smoothness as other sections of hot-mix asphalt course.
  - 1. Clean contact surfaces and apply tack coat to joints.
  - 2. Offset longitudinal joints, in successive courses, a minimum of 6 inches.
  - 3. Offset transverse joints, in successive courses, a minimum of 24 inches.
  - 4. Construct transverse joints at each point where paver ends a day's work and resumes work at a subsequent time. Construct these joints using either "bulkhead" or "papered" method according to AI MS-22, for both "Ending a Lane" and "Resumption of Paving Operations."

#### 3.06 COMPACTION

- A. General: Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement. Compact hot-mix paving with hot, hand tampers or with vibratory-plate compactors in areas inaccessible to rollers.
  - 1. Complete compaction before mix temperature cools to 185 deg F.
- B. Breakdown Rolling: Complete breakdown or initial rolling immediately after rolling joints and outside edge. Examine surface immediately after breakdown rolling for indicated crown, grade, and smoothness. Correct laydown and rolling operations to comply with requirements.
- C. Intermediate Rolling: Begin intermediate rolling immediately after breakdown rolling while hot-mix asphalt is still hot enough to achieve specified density. Continue rolling until hot-mix asphalt course has been uniformly compacted to the following density:
  - 1. Average Density: 92 percent of reference maximum theoretical density according to ASTM D 2041, but not less than 90 percent or greater than 96 percent.
- D. Finish Rolling: Finish roll paved surfaces to remove roller marks while hot-mix asphalt is still warm.
- E. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while asphalt is still hot; compact thoroughly.

- F. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.
- G. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

#### 3.07 INSTALLATION TOLERANCES

- A. Pavement Thickness: Compact each course to produce the thickness indicated within the following tolerances:
  - 1. AC Base Course: Plus or minus 1/2 inch.
- B. Pavement Surface Smoothness: Compact each course to produce a surface smoothness within the following tolerances as determined by using a 10-foot straightedge applied transversely or longitudinally to paved areas:
  - 1. AC Base Course: 1/4 inch.
  - 2. Crowned Surfaces: Test with crowned template centered and at right angle to crown. Maximum allowable variance from template is 1/4 inch.
  - 3. Difference between adjacent panels: 1/8 inch.

#### 3.08 CORRECTION OF DEFECTS

- A. Correct all defects in materials and work at no additional cost to the owner, as follows:
  - 1. Fouled Surfaces: Immediately repair, clean, and re-tack fouled surfaces that would prevent full bond between successive lifts of mixture.
  - 2. Boils, Slicks, and Oversized Material: Immediately remove and replace boils, slicks, and oversized materials with fresh mixture.
  - 3. Segregation: Take immediate corrective measures when segregation or non-uniform surface texture is occurring in the finished mat. If segregation continues to occur, stop production until a plan for providing uniform surface texture is approved by the Port.
  - 4. Roller Damage to the Surface: Immediately correct surface damage from rollers with additional fresh mixture or by other means approved by the owner.
  - 5. Longitudinal Joints: Take immediate corrective measures when open longitudinal joints are being constructed or when the elevation of the two sides of a longitudinal joint does not match. If problems with the longitudinal joint continue to occur, stop production until a plan for providing tight, equal elevation longitudinal joints is approved by the owner.
  - 6. Corrective Measures: Take immediate corrective measures when the specified compaction density is not being achieved.
  - 7. Other Defects: Remove and replace any HMAC that:

- a) Is loose, broken or mixed with dirt.
- b) Visually shows too much or too little asphalt.
- c) Is defective in any way.

# 3.09 FIELD QUALITY CONTROL

- A. Testing Agency: Contractor will engage a qualified testing agency to perform tests and inspections.
- B. Replace and compact hot-mix asphalt where core tests were taken.
- C. Remove and replace or install additional hot-mix asphalt where test results or measurements indicate that it does not comply with specified requirements.

### 3.10 WASTE HANDLING

A. Except for material indicated to be recycled, remove excavated materials from Project Site and legally dispose of them in an EPA-approved landfill.

# **END OF SECTION**

### SECTION 33 05 00 - COMMON WORK RESULTS FOR UTILITIES

#### **PART 1 - GENERAL**

#### 1.01 SUMMARY

- A. This Section includes the following:
  - 1. Piping joining materials.
  - 2. Sleeves.
  - 3. Grout.
  - 4. Piping system common requirements.

#### 1.02 DEFINITIONS

- A. Exposed Installations: Exposed to view outdoors or subject to outdoor ambient temperatures and weather conditions.
- B. Concealed Installations: Concealed from view and protected from weather conditions and physical contact by building occupants but subject to outdoor ambient temperatures. Examples include installations within unheated shelters.

### **PART 2 - PRODUCTS**

#### 2.01 PIPING JOINING MATERIALS

- A. Pipe-Flange Gasket Materials: Suitable for chemical and thermal conditions of piping system contents.
  - 1. ASME B16.21, nonmetallic, flat, asbestos free, 1/8-inch maximum thickness, unless otherwise indicated.
    - a) Full-Face Type: For flat-face, Class 125, cast-iron and cast-bronze flanges.
    - b) Narrow-Face Type: For raised-face, Class 250, cast-iron and steel flanges.
  - 2. AWWA C110, rubber, flat face, 1/8 inch thick, unless otherwise indicated; and full-face or ring type, unless otherwise indicated.
- B. Flange Bolts and Nuts: ASME B18.2.1, carbon steel, unless otherwise indicated.
- C. Plastic, Pipe-Flange Gasket, Bolts, and Nuts: Type and material recommended by piping system manufacturer, unless otherwise indicated.
- D. Solvent Cements for Joining Plastic Piping:
  - 1. ABS Piping: ASTM D 2235.

- 2. CPVC Piping: ASTM F 493.
- 3. PVC Piping: ASTM D 2564. Include primer according to ASTM F 656.
- 4. PVC to ABS Piping Transition: ASTM D 3138.

### 2.02 SLEEVES

- A. Galvanized-Steel Sheet Sleeves: 0.0239-inch minimum thickness; round tube closed with welded longitudinal joint.
- B. Steel Pipe Sleeves: ASTM A 53/A 53M, Type E, Grade B, Schedule 40, galvanized, plain ends.
- C. Molded PVC Sleeves: Permanent, with nailing flange for attaching to wooden forms.
- D. PVC Pipe Sleeves: ASTM D 1785, Schedule 40.
- E. Molded PE Sleeves: Reusable, PE, tapered-cup shaped, and smooth outer surface with nailing flange for attaching to wooden forms.

#### 2.03 GROUT

- A. Description: ASTM C 1107, Grade B, nonshrink and nonmetallic, dry hydraulic-cement grout.
  - 1. Characteristics: Post hardening, volume adjusting, nonstaining, noncorrosive, nongaseous, and recommended for interior and exterior applications.
  - 2. Design Mix: 5000-psi, 28-day compressive strength.
  - 3. Packaging: Premixed and factory packaged.

#### **PART 3 - EXECUTION**

### 3.01 PIPING INSTALLATION

- A. Install piping according to the following requirements and utilities Sections specifying piping systems.
- B. Drawings, schematics and diagrams indicate general location and arrangement of piping systems. Indicated locations and arrangements were used to size pipe and calculate friction loss, expansion, pump sizing, and other design considerations. Install piping as indicated unless deviations to layout are approved on the Coordination Drawings.
- C. Install piping to permit valve servicing.
- D. Install piping at indicated slopes.
- E. Install piping free of sags and bends.
- F. Install fittings for changes in direction and branch connections.

- G. Select system components with pressure rating equal to or greater than system operating pressure.
- H. Sleeves are not required for core-drilled holes.

### 3.02 PIPING JOINT CONSTRUCTION

- A. Join pipe and fittings according to the following requirements and utilities. Sections specifying piping systems.
- B. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.
- C. Remove scale, slag, dirt, and debris from inside and outside of pipe and fittings before assembly.
- D. Threaded Joints: Thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full ID. Join pipe fittings and valves as follows:
  - 1. Apply appropriate tape or thread compound to external pipe threads unless dry seal threading is specified.
  - 2. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged. Do not use pipe sections that have cracked or open welds.
- E. Flanged Joints: Select appropriate gasket material, size, type, and thickness for service application. Install gasket concentrically positioned. Use suitable lubricants on bolt threads.
- F. Soldered Joints: Apply ASTM B 813 water-flushable flux, unless otherwise indicated, to tube end. Construct joints according to ASTM B 828 or CDA's "Copper Tube Handbook," using lead-free solder alloy (0.20 percent maximum lead content) complying with ASTM B 32.
- G. Brazed Joints: Construct joints according to AWS's "Brazing Handbook," "Pipe and Tube" Chapter, using copper-phosphorus brazing filler metal complying with AWS A5.8.
- H. Pressure-Sealed Joints: Assemble joints for plain-end copper tube and mechanical pressure seal fitting with proprietary crimping tool to according to fitting manufacturer's written instructions.
- I. Plastic Piping Solvent-Cemented Joints: Clean and dry joining surfaces. Join pipe and fittings according to the following:
  - 1. Comply with ASTM F 402 for safe-handling practice of cleaners, primers, and solvent cements.
  - 2. ABS Piping: Join according to ASTM D 2235 and ASTM D 2661 appendixes.
  - 3. CPVC Piping: Join according to ASTM D 2846/D 2846M Appendix.
  - 4. PVC Pressure Piping: Join schedule number ASTM D 1785, PVC pipe and PVC socket fittings according to ASTM D 2672. Join other-than-schedule-number

- PVC pipe and socket fittings according to ASTM D 2855.
- 5. PVC Nonpressure Piping: Join according to ASTM D 2855.
- 6. PVC to ABS Nonpressure Transition Fittings: Join according to ASTM D 3138 Appendix.
- J. Plastic Pressure Piping Gasketed Joints: Join according to ASTM D 3139.
- K. Plastic Nonpressure Piping Gasketed Joints: Join according to ASTM D 3212.
- L. Plastic Piping Heat-Fusion Joints: Clean and dry joining surfaces by wiping with clean cloth or paper towels. Join according to ASTM D 2657.
  - 1. Plain-End PE Pipe and Fittings: Use butt fusion.
  - 2. Plain-End PE Pipe and Socket Fittings: Use socket fusion.
- M. Bonded Joints: Prepare pipe ends and fittings, apply adhesive, and join according to pipe manufacturer's written instructions.

#### 3.03 PIPING CONNECTIONS

- A. Make connections according to the following, unless otherwise indicated:
  - 1. Install unions, in piping NPS 2 and smaller, adjacent to each valve and at final connection to each piece of equipment.
  - 2. Install flanges, in piping NPS 2-1/2 and larger, adjacent to flanged valves and at final connection to each piece of equipment.
  - 3. Install dielectric fittings at connections of dissimilar metal pipes.

# 3.04 GROUTING

- A. Clean surfaces that will come into contact with grout.
- B. Provide forms as required for placement of grout.
- C. Avoid air entrapment during placement of grout.
- D. Place grout, completely filling voids and provide smooth surface.
- E. Place grout around anchors.
- F. Cure placed grout.

#### **END OF SECTION**

### SECTION 33 31 00 - SANITARY UTILITY SEWERAGE PIPING

#### PART 1 - GENERAL

#### 1.01 SUMMARY

- A. Section Includes: gravity-flow, nonpressure and force-main, pressure sanitary sewerage outside the building, with the following components:
  - 1. Pipe and fittings.
  - 2. Nonpressure and pressure couplings.
  - 3. Cleanouts.
  - 4. Sewage Air Release Valve
  - 5. Ductile Iron Valves
  - 6. Manhole Rehabilitation
  - 7. Pump Station Equipment
  - 8. Manhole
  - 9. Valve Vault
  - 10. Concrete

### 1.02 PERFORMANCE REQUIREMENTS

- A. Gravity-Flow, Nonpressure, Drainage-Piping Pressure Rating: 10-foot head of water
- B. Force-main, pressure-piping rating: at least equal to system operating pressure but not less than 150 psig.

### 1.03 SUBMITTALS

- A. Product Data: For the following:
  - 1. Cleanouts
  - 2. Pipe material.
  - 3. Pipe Valves
  - 4. Mechanical plugs.
  - 5. Manhole Rehabilitation Products
  - 6. Pump Station Equipment
- B. Shop Drawings: For manholes, include plans, elevations, sections, details, and frames and

covers.

- C. Coordination Drawings: Show pipe sizes, locations, and elevations. Show other piping in same trench and clearances from sewer system piping. Indicate interface and spatial relationship between manholes, piping, and proximate structures.
- D. Field quality-control reports.

#### 1.04 PROJECT CONDITIONS

A. Site information: Research public utility records and verify existing utility locations prior to ordering any materials. Notify the Engineer immediately if any discrepancies are found in the project survey.

#### **PART 2 - PRODUCTS**

#### 2.01 MANUFACTURERS

- A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
  - 1. Available manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, manufacturers specified.
  - 2. Manufacturers: Subject to compliance with requirements, provide products by one of the manufacturers specified.

#### 2.02 PIPING MATERIALS

A. Refer to Part 3 "Piping Applications" Article for applications of pipe, fitting, and joining materials.

# 2.03 DUCTILE-IRON, PRESSURE PIPE AND FITTINGS

- A. Piping:
  - 1. Pipe: AWWA C151.
  - 2. Standard Fittings: AWWA C110, ductile or gray iron.
  - 3. Compact Fittings: AWWA C153.
  - 4. Grooved Fittings: AWWA C110.
  - 5. Gaskets: AWWA C111, rubber, of shape matching pipe and fittings.
  - 6. Lining: Ceramic epoxy coating for ductile iron force mains. Protecto 401 or approved equivalent

### 2.04 PVC PIPE AND FITTINGS

- A. PVC Sewer Piping, NPS 15 and Smaller:
  - 1. Pipe, NPS 15 and Smaller: ASTM D 3034, PVC Type PSM sewer pipe with bell-and-spigot ends for gasketed joints.

- 2. Fittings: ASTM D 3034, PVC with bell ends.
- 3. Gaskets: ASTM F 477, elastomeric seals.
- B. PVC Sewer Piping, NPS 18 (DN 450) and Larger:
  - 1. Pipe, NPS 18 (DN 450) and Larger: ASTM F679, [T-1] [T-2] wall thickness, PVC gravity sewer pipe with bell and spigot ends with integral ASTM F477, elastomeric seals for gasketed joints.
- C. PVC Pressure Piping:
  - 1. Pipe: AWWA C900, [Class 100] [Class 150] [and] [Class 200] PVC pipe with bell-and-spigot ends for gasketed jointsASTM E 1785 Schedule 80 pipe with plain ends for solvent-cement joints..
  - 2. Fittings: Ductile iron, compact fittings complying with AWWA C153 for push-on joints and using AWWA C111, rubber gaskets.ASTM D 2467, Schedule 80 socket-type fittings. Provide transition fittings as required.
- D. Ductile Iron Pressure Piping:
  - 1. Pipe
  - 2. Fittings
  - 3. Gaskets: ASTM F 477, elastomeric seals.
- E. PVC Service Pipe and Fittings: ASTM E 1785 Schedule [40] [80] pipe, with plain ends for solvent-cement joints with [ASTM D 2466, Schedule 40] [ASTM D 2467, Schedule 80] socket-type fittings.

### 2.05 NONPRESSURE-TYPE TRANSITION COUPLINGS

- A. Comply with ASTM C 1173, elastomeric, sleeve-type, reducing or transition coupling, for joining underground nonpressure piping. Include ends of same sizes as piping to be joined and corrosion-resistant-metal tension band and tightening mechanism on each end.
- B. Sleeve Materials:
  - 1. For Plastic Pipes: ASTM F 477, elastomeric seal or ASTM D 5926, PVC.
  - 2. For Dissimilar Pipes: ASTM D 5926, PVC or other material compatible with pipe materials being joined.
- C. Unshielded, Flexible Couplings:
  - 1. Description: Elastomeric sleeve with stainless-steel shear ring and corrosion-resistant-metal tension band and tightening mechanism on each end.
- D. Ring-Type, Flexible Couplings: Elastomeric compression seal with dimensions to fit inside bell of larger pipe and for spigot of smaller pipe to fit inside ring.
- 2.06 PRESSURE-TYPE PIPE COUPLINGS

- A. Tubular-Sleeve Couplings: AWWA C219, with center sleeve, gaskets, end rings, and bolt fasteners.
- B. Metal, bolted, sleeve-type, reducing or transition coupling, for joining underground pressure piping. Include 150-psig minimum pressure rating and ends of same sizes as piping to be joined.
- C. Center-Sleeve Material: Manufacturer's standard
- D. Gasket Material: Natural or synthetic rubber.
- E. Metal Component Finish: Corrosion-resistant coating or material.

#### 2.07 CLEANOUTS

- A. Cleanouts: At grade cleanouts shall have an adjustable sleeve-type housing, a threaded brass plug with counter sunk slot, and cast-iron frame and cover.
- B. PVC Cleanouts: PVC body with PVC threaded plug. Include PVC sewer pipe fittings and riser to cleanout.

### 2.08 SEWAGE AIR RELEASE & VACCUM BREAK VALVE

- A. Double orifice (small & large orifice) with bias mechanism for large volume air intake and controlled air discharge. Maximum operating pressure of 145 psi.
- B. Fusion bonded epoxy powder coated ductile iron body with high density polyethylene (solid) float and EPDM O-ring and nozzle seat.
- C. Vent-O-Mat Series RGX II or approved equal.

#### 2.09 DUCTILE IRON VALVES

- A. AWWA, Gate Valve:
  - 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - 2. Basis-of-Design Product: Subject to compliance with requirements, provide ductile iron resilient wedge gate valve with handwheel operator for bypass port valve, by one of the following:
    - a) American AVK Co.; Valves & Fittings Div.
    - b) American Flow Control Div.
    - c) McWane, Inc.; Clow Valve Co. Div. (Oskaloosa).
    - d) McWane, Inc.; Kennedy Valve Div.
    - e) McWane, Inc.; M & H Valve Company Div.
    - f) McWane, Inc.; Tyler Pipe Div.; Utilities Div.
    - g) Mueller Co.
    - h) NIBCO Inc.
    - i) U.S. Pipe and Foundry Company.

- j) Zurn Industries, Inc.
- k) Or approved equivalent
- 3. Nonrising-Stem, Resilient Wedge Gate Valve:
  - a) Description: ductile iron body bonnet and wedge. The wedge shall be encapsulated in rubber.
    - 1) Standard: AWWA C509
    - 2) Minimum Pressure Rating: 200 psig
    - 3) End Connections: Flanged
    - 4) Interior coating: Complying with AWWA C550

# B. Swing Check Valve:

- 1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
- 2. Basis-of-Design Product: Subject to compliance with requirements, provide ductile iron flanged swing check valve Val matic Swing-Flex Check Valve or an approved equivalent.
- 3. Standard: AWWA C508
- 4. Position Indicator and Manual Backflow Assembly

#### 2.10 MANHOLE REHABILITATION

- A. External Joint Sealer:
  - 1. External joint seal shall meet or exceed the requirements of ASTM C-877 type II.
  - 2. External joint seals shall consist of a collar 12-inch wide with an outer layer of polyethylene, with a minimum tensile strength of 4,000 psi and a minimum tear resistance of 1,500 psi, and an under layer of rubberized mastic that is reinforced with a woven polypropylene fabric. Two 5/8-inch steel straps shall be located within the collar 3/4-inch from each edge. The straps shall be confined in tubes that isolate them from the mastic and allow them to slip freely with mechanically tightened and locked around the manhole joint. The collar shall be furnished with a minimum of 6-inch overlap and a closing flap to cover any remaining exposed strap.

#### B. Manhole Lid Sealer:

1. Gasket and plugs shall be molded, cut, or extruded from a high quality rubber compound such as Nitrile, EPDM, Neoprene or a blend thereof. When extrusion is the method of manufacturer, the material shall be cured in a round forming mold to maintain a flat and circular finished form. The molded products shall have a minimum tensile strength of 1,500 psi. Products cut from sheet material shall have a minimum tensile strength of 800 psi and extruded products shall have a minimum of 1,200-psi and all shall have a hardness (durometer) of 60+/-5.

# C. External Chimney Seal:

- 1. Install external mechanically locking seal consisting of the following components:
  - a) Flexible rubber sleeve and extension shall be extruded or molded high-grade rubber compound confirming to the applicable material requirements of ASTM C-923 with a minimum 1500 psi tensile strength, maximum 18% compression set and a hardness (durometer) of 45+/-5. The rubber sleeve shall be corrugated, with a minimum thickness of 3/16 inches. The top section of the sleeve shall be designed to extend both over and under the manhole frame's base flange, thereby allowing it to be mechanically locked to the frame. The bottom section of the sleeve shall contain an integrally formed compression band recess and a series of sealing fins to facilitate a watertight seal. Any splice used to fabricate the sleeve or extension shall be hot vulcanized and have a strength such that the sleeve shall withstand a 180-degree bend with no visible separation.
  - b) Compression bands shall be integrally formed from 16-gauge stainless steel confirming to the applicable material requirements of ASTM C-923, Type 304, with no welded attachments and shall have a minimum width of 1-inch. The top compression band shall have a shape and width sufficient to, when tightened, will mechanically lock the sleeve to the manhole frame's base flange. The lower compression band shall be a flat strip to allow placement into the lower band recess of the seal and or extension. The tightening mechanism on both bands shall have the capacity to develop the pressure necessary to make a watertight seal and shall have a minimum adjustment ranges of 2 diameter inches. Screws, bolts, and nuts used on the bands shall be stainless steel conforming to ASTM F-593 and 594, Type 304.
  - c) The seal shall be designed to prevent leakage of water through the manhole chimney section throughout a 50-year design life. In addition, the seal shall be capable of repeated vertical movement of the frame of not less than 2-inches and/or repeated horizontal movement of not less than 1/2-inch after installation and throughout its design life.

#### 2.11 PUMP STATION EQUIPMENT

- A. Guide Rail Systems and Discharge Pipe Assemblies: 2-inch, schedule 40, stainless steel guide rail with stainless steel lifting cable or chain compatible for the specified pumps
- B. Pump Removal Crane
  - 1. Thern Portable Davit Crane Model #5PT20G-M2, 2000 lb capacity, or approved equivalent
  - 2. #ED300-DW11 Drill Drive, 120V/1Ph
  - 3. 5BW20G Standard Wall Mount Base, Galvanized
  - 4. 1/4" x 36' 304SS Wire Rope Assy. having 316SS Hook with Safety Latch
- C. Pump Station Wetwell Components.
  - 1. Xylem Flygt Concerto 6020 N80 submersible pumps. 230V 5.5 HP, FM approved, or approved equivalent.

- 2. TOP 150 Wetwell Insert, or approved equivalent
- 3. Pedestrian Rated Aluminum Safe Hatch
- 4. Cable Tray for Wetwell
- 5. NEMA 4x Stainless Steel Pump Disconnect Panel and Stand
- 6. NEMA 12 Painted Steel 230V Duplex Concertor XPC Control Panel with Touch Screen and XTU Cellular Autodialer
- 7. Floats
  - a) Requirements specified in Division 26 Electrical shall apply
- 8. Pump Liquid Level Control Pressure Transducer
- 9. 1/8" Stainless Steel Lifting Cable
- 10. Pump Power Cable. Each cable to have a stainless steel basket cable grip attached to hook on upper guide bar bracket.

#### 2.12 MANHOLES

- A. Standard Precast Concrete Manholes:
  - 1. Description: ASTM C 478, precast, reinforced concrete, of depth indicated, with provision for sealant joints rubber gasketed joints.
  - 2. Diameter: 48 inches minimum unless otherwise indicated.
  - 3. Ballast: Increase thickness of precast concrete sections or add concrete to base section, as required to prevent flotation if site conditions warrant and/or as shown in plans.
  - 4. Base Section: 6-inch minimum thickness for floor slab and 5 inch (125-mm) minimum thickness for walls and base riser section; with separate base slab or base section with integral floor.
  - 5. Riser Sections: 5-inch minimum thickness, of length to provide depth indicated.
  - 6. Top Section: Eccentric-cone type unless concentric-cone or flat-slab-top type is indicated; with top of cone of size that matches grade rings.
  - 7. Gaskets: ASTM C 443, rubber or preformed plastic.
  - 8. Joint Sealant: ASTM C 990, bitumen or butyl rubber.
  - 9. Resilient Pipe Connectors: ASTM C 923, cast or fitted into manhole walls, for each pipe connection.
  - 10. Steps: Individual FRP steps; wide enough to allow worker to place both feet on one step and designed to prevent lateral slippage off step. Cast or anchor steps into sidewalls at 12-inch intervals. Omit steps if total depth from floor of manhole to finished grade is less than 36 inches.

- 11. Adjusting Rings: Interlocking rings, with level or sloped edge in thickness and diameter matching manhole frame and cover, and with height as required to adjust manhole frame and cover to indicated elevation and slope. Include sealant recommended by ring manufacturer.
- 12. Grade Rings: Reinforced-concrete rings, 6- to 9-inch total thickness, with diameter matching manhole frame and cover, and with height as required to adjust manhole frame and cover to indicated elevation and slope.

#### B. Manhole Frames and Covers:

- 1. Description: Ferrous; 23-inch ID by 3- to 7-inch riser, with 3 1/4 -inch- minimum-width flange and 24 3/4-inch- diameter cover. Include indented top design with lettering cast into cover, using wording equivalent to "SANITARY SEWER."
- 2. Material: ASTM A 48, Class 30 gray iron designed for heavy duty service unless otherwise indicated.

#### 2.13 VALVE VAULT

### A. Precast Utility Vault:

- 1. Utility Vault by Old Castle, or approved equivalent.
- 2. Description: Precast, reinforced concrete, of depth indicated, with provision for sealant joints.
- 3. Base Section: 6-inch minimum thickness for floor slab and 4-inch minimum thickness for walls.
- 4. Joint Sealant: ASTM C990, butyl resin sealant, or per manufacturer's recommendation.

#### B. Hatch:

1. Locking galvanized steel doors per manufacturer's recommendation.

### 2.14 CONCRETE

- A. General: Cast-in-place concrete complying with ACI 318, ACI 350/350R, and the following:
  - 1. Cement: ASTM C 150, Type II.
  - 2. Fine Aggregate: ASTM C 33, sand.
  - 3. Coarse Aggregate: ASTM C 33, crushed gravel.
  - 4. Water: Potable.
- B. Portland Cement Design Mix: 3000 psi minimum, with 0.45 maximum water/cementitious materials ratio.

- 1. Reinforcing Fabric: ASTM A 185/A 185M, steel, welded wire fabric, plain.
- 2. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 deformed steel.
- C. Manhole Channels and Benches: Factory or field formed from concrete. Portland cement design mix, 3000 psi minimum, with 0.45 maximum water/cementitious materials ratio. Include channels and benches in manholes.
  - 1. Channels: Concrete invert, formed to same width as connected piping, with height of vertical sides to three-fourths of pipe diameter. Form curved channels with smooth, uniform radius and slope.
    - a) Invert Slope: Uniform slope through manhole to match invert elevations per plans, minimum 2 percent.
  - 2. Benches: Concrete, sloped to drain into channel.
    - a) Slope: 8 percent.
- D. Ballast and Pipe Supports: Portland cement design mix, 3000 psi minimum, with 0.58 maximum water/cementitious materials ratio.
  - 1. Reinforcing Fabric: ASTM A 185/A 185M, steel, welded wire fabric, plain.
  - 2. Reinforcing Bars: ASTM A 615/A 615M, Grade 60 (420 MPa) deformed steel.

### **PART 3 - EXECUTION**

#### 3.01 EARTHWORK

A. Excavating, trenching, and backfilling are specified in Section 31 20 00 "Earth Moving."

# 3.02 PIPING APPLICATIONS

- A. Pipe couplings and fittings with pressure ratings at least equal to piping rating may be used in applications below, unless otherwise indicated.
  - 1. Use nonpressure-type flexible couplings where required to join gravity-flow, nonpressure sewer piping, unless otherwise indicated.
    - a) Unshielded flexible couplings for same or minor difference OD pipes.
    - b) Unshielded, increaser/reducer-pattern, flexible couplings for pipes with different OD.
    - c) Ring-type flexible couplings for piping of different sizes where annular space between smaller piping's OD and larger piping's ID permits installation.
- B. Gravity-flow, Nonpressure Sewer Piping: Use any of the following pipe materials for each size range.

- 1. NPS 4 to NPS 15: PVC sewer pipe and fittings gaskets, and gasketed joints.
- C. Force-main Pressure Piping: use the following pipe materials for each size range:

NPS 1 to NPS 3 (DN 25 to DN 75): PVC Schedule [480] [80], service pipe; PVC Schedule [480] [80], service-pipe fittings; and solvent-cemented joints.

1. NPS 3 to NPS 4: Ductile-iron, grooved pressure pipe; ductile-iron standard or compact fittings; gaskets; and gasketed joints. Use "c" clamp to connect pipe.

#### 3.03 PIPING INSTALLATION

- A. Install tracer wire directly over piping and at outside edges of underground structures. See Section 31 20 00 "Earth Moving" for tracer wire material requirements.
- B. General Locations and Arrangements: Drawing plans and details indicate general location and arrangement of underground sanitary sewer piping. Location and arrangement of piping layout take into account design considerations. Install piping as indicated, to extent practical. Where specific installation is not indicated, follow piping manufacturer's written instructions.
- C. Install piping beginning at low point, true to grades and alignment indicated with unbroken continuity of invert. Place bell ends of piping facing upstream. Install gaskets, seals, sleeves, and couplings according to manufacturer's written instructions for using lubricants, cements, and other installation requirements.
- D. Install proper size increasers, reducers, and couplings where different sizes or materials of pipes and fittings are connected. Reducing size of piping in direction of flow is prohibited.
- E. Install gravity-flow, nonpressure, sewer piping according to the following:
  - 1. Install piping pitched down in direction of flow, at minimum slope of 2 percent or match existing conditions, unless otherwise indicated.
  - 2. Install piping with 3-foot of minimum cover.
  - 3. Install PVC Type PSM sewer piping according to ASTM D 2321 and ASTM F 1668.
  - 4. Core drill existing manhole and contractor to ensure adequate clearance between existing laterals. Fill annular space with non-shrink grout.
- F. Install force-main, pressure piping according to the following:
  - 1. Install piping with restrained joints at tee fittings and at horizontal and vertical changes in direction. Use corrosion-resistant rods, pipe or fitting manufacturer's proprietary restraint system, or cast-in-place-concrete supports or anchors.
  - 2. Install piping with 24 inch minimum cover.
  - 3. Install ductile-iron pressure piping according to AWWA C600 or AWWA M41.
  - 4. Install ductile-iron special fittings according to AWWA C600.

- 5. Contractor to provide all required restrained fittings to connect into existing 3 inch pressure line.
- G. Fill existing comminutor tank and lift station wetwell with control density fill when new pump station is active.
- H. Clear interior of piping and manholes of dirt and superfluous material as work progresses. Maintain swab or drag in piping, and pull past each joint as it is completed. Place plug in end of incomplete piping at end of day and when work stops.
- I. Protect existing piping and structures to prevent concrete or debris from entering while making tap connections. Remove debris or other extraneous material that may accumulate.
- J. Install air-vacuum valves per manufacturer's recommendations.

#### 3.04 PIPE JOINT CONSTRUCTION

- A. Basic piping joint construction is specified in Section 33 05 00 "Common Work Results for Utilities." Where specific joint construction is not indicated, follow piping manufacturer's written instructions.
- B. Join gravity-flow, nonpressure, drainage piping according to the following:
  - 1. Join PVC Type PSM sewer piping according to ASTM D 2321 and ASTM D 3034 for elastomeric-seal joints or ASTM D 3034 for elastomeric-gasket joints.
  - 2. Join dissimilar pipe materials with nonpressure-type, flexible couplings.
- C. Join force-main, pressure piping according to the following:
  - 1. Join ductile iron pressure piping with the PVC pressure piping piping according to ASTM D 2855.
  - 2. Join dissimilar pipe materials with pressure-type couplings.
- D. Pipe couplings with pressure ratings at least equal to piping rating may be used in applications below unless otherwise indicated.
  - 1. Use nonpressure flexible couplings where required to join gravity-flow, nonpressure sewer piping unless otherwise indicated.
    - a) Unshielded flexible couplings for pipes of same or slightly different OD.
    - b) Unshielded, increaser/reducer-pattern, flexible couplings for pipes with different OD.
    - c) Ring-type flexible couplings for piping of different sizes where annular space between smaller piping's OD and larger piping's ID permits installation.

### 3.05 MANHOLE INSTALLATION

A. General: Install manholes complete with appurtenances and accessories indicated.

- B. Install precast concrete manhole sections with sealants according to ASTM C 891.
- C. Form continuous concrete channels and benches between inlets and outlet.
- D. Set tops of frames and covers flush with finished surface for manholes that occur in pavements. Set tops 3 inches minimum above finished surface elsewhere unless otherwise indicated

#### 3.06 CONCRETE PLACEMENT

A. Place cast-in-place concrete according to ACI 318.

#### 3.07 CLEANOUT INSTALLATION

- A. Install cleanouts and riser extensions from sewer pipes to cleanouts at grade. Use pipe fittings in sewer pipes at branches for cleanouts, and use PVC pipe for riser extensions to cleanouts. Install piping so cleanouts open in direction of flow in sewer pipe.
  - Use Light-Duty, top-loading classification cleanouts in earth or unpaved foottraffic areas.
  - 2. Use Medium-Duty, top-loading classification cleanouts in paved foot-traffic areas.
  - 3. Use Heavy-Duty, top-loading classification cleanouts in vehicle-traffic service areas.
- B. Set cleanout frames and covers in earth in cast-in-place-concrete block, per the Detail. Set with tops 1 inch above surrounding grade.
- C. Set cleanout frames and covers in concrete pavement and roads with tops flush with pavement surface.

### 3.08 CONNECTIONS

- A. Connect nonpressure, gravity-flow drainage piping to building's sanitary building drain. Use transition fitting to join dissimilar piping materials.
- B. Make connections to existing piping and underground manholes.
  - 1. Use commercially manufactured wye fittings for piping branch connections. Remove section of existing pipe, install wye fitting into existing piping, and encase entire wye fitting plus 6-inch overlap with not less than 6 inches of concrete with 28-day compressive strength of 3000 psi.
  - 2. Make branch connections from side into existing piping, NPS 4 to NPS 20. Remove section of existing pipe, install wye fitting into existing piping, and encase entire wye with not less than 6 inches of concrete with 28-day compressive strength of 3000 psi.
  - 3. Make branch connections from side into existing piping, NPS 21 or larger, or to underground manholes by core drilling into existing unit. Make connection into existing pipe using an "Inserta-Tee" fitting per the manufacturer's recommendations or approved equal. Make connection to existing manhole using

round rubber gasket installed on the pipe per the manufacturer's instructions. Cut end of connection pipe passing through the manhole wall to conform to the shape of and be flush with the inside wall unless otherwise indicated. The opening around the gasket shall be grouted to a watertight seal. Existing manhole inverts, flow lines, channels, etc. shall be chipped out and re-grouted to accommodate the new pipe.

- a) Use concrete that will attain a minimum 28-day compressive strength of 3000 psi unless otherwise indicated.
- b) Use epoxy-bonding compound as interface between new and existing concrete and piping materials.
- 4. Protect existing piping and manholes to prevent concrete or debris from entering while making tap connections. Remove debris or other extraneous material that may accumulate.
- C. Make connections to existing piping and underground structures so finished Work complies with requirements specified for new Work.

#### 3.09 PUMP STATION INSTALLATION

- A. Pump Guide Rail: Install and anchor pump guide rail per manufacturer's recommendations.
- B. Valve Vault: Install per manufacturer's recommendations and as shown on plans.
- C. Wetwell: Install per manufacturer's recommendations and as shown on plans.

### 3.10 MANHOLE REHABILITATION

A. Clean existing manholes and install per manufacturer's recommendations.

#### 3.11 FIELD QUALITY CONTROL

- A. Inspect interior of piping to determine whether line displacement or other damage has occurred. Inspect after approximately 24 inches of backfill is in place, and again at completion of Project.
  - 1. Submit separate report for each system inspection.
  - 2. Defects requiring correction include the following:
    - a) Alignment: Less than full diameter of inside of pipe is visible between structures.
    - b) Deflection: Flexible piping with deflection that prevents passage of ball or cylinder of size not less than 92.5 percent of piping diameter.
    - c) Damage: Crushed, broken, cracked, or otherwise damaged piping.
    - d) Infiltration: Water leakage into piping.
    - e) Exfiltration: Water leakage from or around piping.

- 3. Replace defective piping using new materials, and repeat inspections until defects are within allowances specified.
- 4. Reinspect and repeat procedure until results are satisfactory.
- B. Test new piping systems, and parts of existing systems that have been altered, extended, or repaired, for leaks and defects.
  - 1. Do not enclose, cover, or put into service before inspection and approval.
  - 2. Test completed piping systems according to requirements of authorities having jurisdiction.
  - 3. Schedule tests and inspections by authorities having jurisdiction with at least 24 hours' advance notice.
  - 4. Submit separate report for each test.
  - 5. Hydrostatic Tests: Test sanitary sewerage according to requirements of authorities having jurisdiction and the following:
    - a) Fill sewer piping with water. Test with pressure of at least 10-foot head of water, and maintain such pressure without leakage for at least 15 minutes.
    - b) Allowable leakage is maximum of 50 gal./inch of nominal pipe size per mile pipe, during 24-hour period.
    - c) Close openings in system and fill with water.
    - d) Purge air and refill with water.
    - e) Disconnect water supply.
    - f) Test and inspect joints for leaks.
    - g) Option: Test concrete gravity sewer piping according to ASTM C 924.
  - 6. Air Tests: Test sanitary sewerage according to requirements of authorities having jurisdiction, UNI-B-6, and the following:
    - a) Option: Test plastic gravity sewer piping according to ASTM F 1417.
- C. Leaks and loss in test pressure constitute defects that must be repaired.
- D. Replace leaking piping using new materials, and repeat testing until leakage is within allowances specified.

### 3.12 CLEANING

A. Clean dirt and superfluous material from interior of piping.

### 3.13 AS-BUILTS

- A. Contractor shall utilize a surveyor licensed in the State of Oregon to document post construction of the sewer line. Provide the following information in AutoCAD Release 10 format:
  - 1. Rim Elevation
  - 2. Pipe Invert(s)
  - 3. Pipe Size(s)
- B. Perform a television inspection of the newly installed sanitary gravity lines.
  - 1. Notify the Engineer and Owner's Representative a minimum of 72-hours before cleaning or video inspection. Allow access to the Engineer or Owner's Representative at all times to observe the video monitor and all other operations.
  - 2. Clean the pipe of obstructions that will impede video inspection. Install a screen to catch debris at the downstream end of the pipe run. Avoid causing damage to pipe while completing the cleaning operations.
  - 3. Inspect the mainline pipes using a digital color video camera equipped with an illumination devise that provides clear and sharp images with all pipe sizes and material types. The camera and lighting shall be capable of operating in 100% humidity conditions and with ability to pan and tilt 275° and rotate 360°. Service line laterals can utilize a push camera with imaging capabilities and illumination requirements similar to that required for the mainline pipe.
  - 4. Perform continuous video inspection while pipe remains clean. Video inspect pipe one segment at a time. Do not move the camera at a speed greater than 30 feet per minute. Move the camera through the line in either direction, stopping, panning, or tilting as necessary to permit documentation of the pipe's condition including the location of all lateral connections.
  - 5. Provide a verbal narrative description on each video inspection recording. Include the following minimum information in the narrative: the beginning and the end of the video, access point identification, the total footage of the pipe inspected, the company name, the operator's name and the date, time and weather conditions. Make note of all joints, lateral connections, and other conditions within the pipe.
  - 6. Begin all video inspection with the footage meter set to zero and begin video inspection from the middle of the access point. Provide accurate on-screen distance measurements in the video recording. Ensure that the footage information on the recorded video corresponds to the footage references in the written inspection report.
  - 7. Record the video inspection using an approved file format.
  - 8. Record video continuously, without editing or starts and stops, in color from the beginning to the end of each pipe segment. Ensure that the pipe image is free of visual distortions and appears level and centered in the pipe being inspected. Ensure that the audio portion of the composite video recording is sufficiently free from electrical interference and background noise to provide complete clarity of

the narrative description.

9. Furnish one copy of all post-construction written inspection reports and video recordings within three days after completing the inspections or as specified.

Each delivered video recording will be reviewed and any pipe deficiencies noted. Correct all pipe deficiencies that are revealed in the recording and written report within 48 hours after receiving notification. Re-perform the video inspection, submit the new video and update the written report at no additional cost to the Client.

**END OF SECTION 333100** 

### **Oregon Parks and Recreation Commission**

### June 15, 2022

Agenda Item: 8b Action

Topic: Collier State Park McGiffert Log Loader and Skelton Cars Contract

Presented by: Matt Rippee, Central Park Services Administrator

Title: Collier State Park McGiffert Log Loader and Skeleton Cars Contract

Location: Collier Memorial State Park

**Description:** This project will restore 4 historic museum logging equipment that were partly destroyed in the 242 Fire that swept thru Collier Memorial State Park in 2020: the McGiffert Log Loader and 3 skeleton railroad flatcars. Scope of contract will be to hire rail restoration contractor to rebuild and restore these 4 items. Work will include removing and transporting items to contractor's workshop, developing specifications and drawings to restore items and restoring all 4 items. Contractor will also transport items back to Collier and reinstall items back into the exhibit space.

Project Manager: Christina Sweet, Historian/Preservation Specialist

Project Number: 36510

Project Budget: \$829,000 estimated (will know amount by commission meeting)

Funding for this project will be either from DAS Excess Insurance or FEMA Public Assistance Grant. If DAS Excess Insurance claim is denied FEMA has already approved this project as part of their Public Assistance Grant and will cover any costs not covered by DAS Excess Insurance.

#### Schedule:

Advertise	Bid Close	Contract Award	Contract Completion
April 2022	May 2022	June 2022	September 2024

**Prior Action by Commission:** None

**Action Requested:** Request approval for restoration of McGiffert Log Loader and 3 skeleton flatcars at Collier Memorial State Park.

**Attachments:** #1 – Photographs of McGiffert and skeleton flatcars (pre and post fire)

Prepared by: Christina Sweet, Historian/Preservation Specialist

### 8b Attachments: #1 – Photographs of McGiffert and skeleton flatcars (pre and post fire)

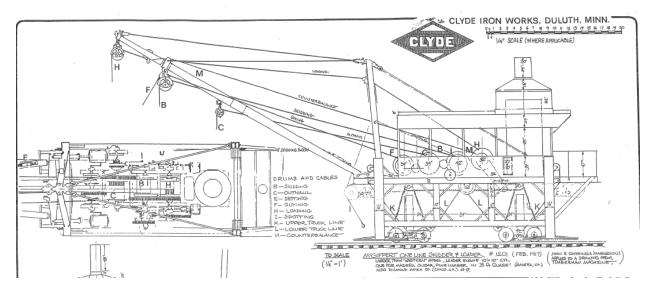
Pre-Fire and Historic Photos of McGiffert Log Loader and 3 skeleton flatcars



McGiffert Log Loader (blue arrow), 1 of 3 skeleton flatcars (red arrow)



Historic Photo of McGiffert Log Loader



McGiffert Log Loader – original drawings



2 of 3 skeleton flatcars – 1 flatcar sits behind McGiffert, 1 under McGiffert, and 1 in front of McGiffert (not shown in photo)



Historic photograph of 1 skeleton flatcar in pieces for transportation by truck (red arrow)



Miniature version of what Collier's 3 skeleton flatcars looked like

Post-Fire Photos of McGiffert Log Loader and 3 skeleton flatcars





### **Oregon Parks and Recreation Commission**

### June 15, 2022

Agenda Item: 9a Action

Public Comment Allowed: No

Topic: Adoption of OAR-736-050-0260 Committee Procedures for Review and

Approval of Nominations to the National Register

Presented by: Chris Havel

On October 21, 2021, an online meeting of the State Advisory Committee on Historic Preservation (SACHP) was interrupted when a public attendee began typing racial and homophobic slurs, personally directed at members of the committee. The meeting was open to the public, as required by Oregon Administrative Rule 736-050-0260(9). The staff administrator ended the meeting and the matter was referred to the Oregon State Police, who are conducted a criminal investigation, and the Oregon Department of Justice Bias Incident Hotline.

A public hearing is a necessary step in state consideration of nominations to the federal National Register of Historic Places. By rule, after the nomination is presented to the SACHP by the National Register Program Coordinator, public comment must be taken during the meeting. To protect the health and safety of committee members as they fulfill their duty to consider nominations to the National Register, the Oregon State Parks and Recreation Commission temporarily changed administrative rules in November 2021 to allow the committee chair to accept public comments during the meeting in writing, designating the OPRD staff meeting administrator to receive the comments and display them for the committee members' consideration.

The temporary rule was valid for 180 days and expired May 16, 2022. At its April 2022 meeting, the Oregon State Parks and Recreation Commission approved a staff request to take the temporary rule through the regular public process. If approved today, the changes would become permanent unless amended again.

As of the date this brief is due, the public comment period is still open and staff have not developed a recommendation. An updated brief will be provided to commissioners about a week before the business meeting.

**Prior Action by Commission:** November 17, 2021, approved Item 9e, adopting temporary rule. April 14, 2022, approved Item 9d, opening rulemaking.

**Action Requested:** Amend OAR 736-050-0260 as specified in Attachment B, and direct staff to promulgate policy guidance protecting free speech rights of members of the public testifying before the State Advisory Committee on Historic Preservation.

Attachments: A) Marked-up and B) clean versions of the rule.

**Prepared by:** Chris Havel

### OAR 736-050-0260

- (1) The committee must review all National Register nomination forms except for those prepared under OAR 736-050-0250(19)(a)(A) to (E) and when a CLG objects to a National Register nomination form as provided under OAR 736-050-0250(13).
- (2) The committee must make a recommendation to the SHPO whether the National Register nomination form meets the following criteria:
  - (a) All procedural requirements are met;
  - (b) The National Register nomination form is adequately documented;
  - (c) The National Register nomination form is technically and professionally correct and sufficient; and
  - (d) The National Register nomination form demonstrates that the nominated property meets the National Register criteria for evaluation.
- (3) Neither the SHPO nor the committee chairperson or vice chairperson will consider a National Register nomination form submitted after the opening of the public comment period.
- (4) The owner(s) and chief elected official may waive the CLG comment opportunity described in OAR 736-050-0250(13) by each submitting a written statement to the SHPO at least 15 calendar days before a scheduled committee meeting. The remaining provisions of OAR 736-050-0250 must be met.
- (5) Committee members must disclose actual and potential conflicts of interest in accordance with ORS 244.120 to ORS 244.130.
- (6) Committee members must not recuse themselves for a potential conflict of interest.
- (7) A quorum of 5 committee members are required to conduct business. The committee retains a quorum if by the removal of committee members for declared actual conflicts of interest the committee falls below 5 present, voting committee members.
- (8) For each National Register nomination form presented to the committee, the National Register Program Coordinator must provide a summary of:
  - (a) The argument presented in the National Register nomination form, and
  - (b) Public comment received prior to the committee meeting pursuant to OAR 736-050-0250(12).
- (9) The chairperson must call for comments from the proponent(s), opponent(s), and other interested

parties present following the National Register Program Coordinator's presentation. The total time allowed for comments must be determined by the chairperson or by practices adopted by comments must address one or more of the criteria in section (2) and may suggest an action under section (11). The total time allowed for comments must be determined by the chairperson or by practices adopted by the committee. Notwithstanding OAR 736-050-0250(12), the chairperson may direct that comments provided under this section be submitted in a manner prescribed by the department to the committee assistant designated Oregon Parks and Recreation Department staff who will provide the comments to the committee.

- (10) The SHPO, Deputy SHPO, Associate Deputy SHPO, and Oregon SHPO staff may participate in committee discussions, but are not voting committee members.
- (11) The committee must take one of the following actions when considering a National Register nomination form based on the committee's deliberations and comments received during the public comment period:
  - (a) Recommend that the SHPO find that the National Register nomination form meets the criteria in subsections (2)(a) to (d) as presented to the committee with no revisions;
  - (b) Recommend that the SHPO find that the National Register nomination form meets the criteria in subsections (2)(a) to (d) after making less than a major revision(s) to the National Register nomination form;
  - (c) Defer making a recommendation until a future committee meeting to allow the proponent to make revision(s) or for any other reason deemed appropriate by the committee related to the criteria in subsections (2)(a) to (d); or
  - (d) Recommend that the SHPO find that the National Register nomination form does not meet the criteria in subsections (2)(a) to (d). The committee must provide reasons for the recommendation. The committee may re-consider a recommendation at a later committee meeting after the SHPO determines that the proponent resolved the committee's objections.
- (12) The committee must defer making a recommendation until a future committee meeting if the National Register nomination form requires a major revision.
- (13) The SHPO must take action on a National Register nomination form reviewed by the committee as described in 36 CFR § 60.6(k) to (w) (2020).
- (14) The committee may provide courtesy comments on a National Register nomination form submitted to the Oregon SHPO by a federal agency or Tribe for properties administered by a federal agency or on lands held in trust by the United States of America on behalf of a Tribe or an individual allotment held by a tribal member. Reviews completed under section (14) are subject to the procedures described in OAR 736-050-0260(2)(b), (c), and (d), and sections (3), and (5) through (10).

STATUTORY/OTHER AUTHORITY: ORS 358.617 STATUTES/OTHER IMPLEMENTED: ORS 358.622(2)

### OAR 736-050-0260

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parties present following the National Register Program Coordinator's presentation. The comments must address one or more of the criteria in section (2) and may suggest an action under section (11). The total time allowed for comments must be determined by the chairperson or by practices adopted by the committee.

- (a) Notwithstanding OAR 736-050-0250(12), the chairperson may direct that comments provided under this section be submitted in a manner prescribed by the department to the designated department staff who will provide the comments to the committee.
- (b) Subsection (a) is not effective after December 31, 2025.
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### OAR 736-050-0260

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  - (b) Recommend that the SHPO find that the National Register nomination form meets the criteria in subsections (2)(a) to (d) after making less than a major revision(s) to the National Register nomination form;
  - (c) Defer making a recommendation until a future committee meeting to allow the proponent to make revision(s) or for any other reason deemed appropriate by the committee related to the criteria in subsections (2)(a) to (d); or
  - (d) Recommend that the SHPO find that the National Register nomination form does not meet the criteria in subsections (2)(a) to (d). The committee must provide reasons for the recommendation. The committee may re-consider a recommendation at a later committee meeting after the SHPO determines that the proponent resolved the committee's objections.
- (12) The committee must defer making a recommendation until a future committee meeting if the National Register nomination form requires a major revision.
- (13) The SHPO must take action on a National Register nomination form reviewed by the committee as described in 36 CFR § 60.6(k) to (w) (2020).
- (14) The committee may provide courtesy comments on a National Register nomination form submitted to the Oregon SHPO by a federal agency or Tribe for properties administered by a federal agency or on lands held in trust by the United States of America on behalf of a Tribe or an individual allotment held by a tribal member. Reviews completed under section (14) are subject to the procedures described in OAR 736-050-0260(2)(b), (c), and (d), and sections (3), and (5) through (10).

STATUTORY/OTHER AUTHORITY: ORS 358.617 STATUTES/OTHER IMPLEMENTED: ORS 358.622(2)



# **Rulemaking: Historic Preservation Advisory Committee Procedures**

Public comments received between comment period opening and May 31, 3pm



## Submit a public comment on a rule

### **Oregon Parks and Recreation Department**

**Proposed rule change:** 

Historic Preservation Advisory Committee Procedures

Commenter name (if provided):

Wendy Rahm

Location (if provided): Portland, OR

Date comment received:

May 25, 2022 10:28 AM

Commenter email (if provided):

wwrahm@aol.com

### **Public comment:**

Please include this testimony unanimously approved on May 24 by the Downtown Neighborhood Association Board in opposition to the proposed rule change to OAR 736-050-0260(9).

Wendy Rahm Portland, OR



Date: May 25, 2022

To: Oregon Parks and Recreation Commission

Copy: Oregon State Advisory Committee on Historic Preservation

From: Portland Downtown Neighborhood Association

Subject: Rulemaking for OAR 736-050-0260(9)

The Downtown Neighborhood Association (DNA) appreciates the service of both the Oregon Parks and Recreation Commission and the State Advisory Committee on Historic Preservation (SACHP).

The DNA was one of the groups affected by the October 2021 racist incident, resulting in the SACHP meeting being postponed which had been scheduled to hear the DNA-sponsored nomination of the South Park Blocks (SPB) to the National Register. This was expected to be the culmination of a two-and-a-half-year effort for this particular nomination, which many felt was long overdue. The DNA had managed to get testifiers to take time off from their work to be at this meeting. Its cancellation, while understandable, caused unrecognized damage to these individuals.

The temporary rule at the rescheduled meeting that created a digital firewall to protect members of the SACHP was understandable at that time. However, it eliminated the ability of presenters to be visible both to the committee and to other presenters. Public comments could not be delivered by individual testifiers, but were instead read by staff of Oregon Parks and Recreation Department.

It was soon apparent that this format harmed the voice and visible presence of the public at a public meeting. The negative impact was substantial in the case of the SPB nomination.

To respond to unjustifiable accusations, the DNA had scheduled one African American female testifier – the Oregon representative to the National Trust for Historic Preservation and Board President of the Architectural Heritage Center – and one female Native American-African American testifier, both of whom had strong personal testimony to deliver in support of the nomination. Instead of seeing their faces and hearing their testimony in their own voices, their testimony was read instead by a visible, white male staff moderator. The DNA went to great effort as did the testifiers to be sure there were demonstrable and varied perspectives at the hearing. And those who testified had taken time off to appear a second time.

It was clear to everyone that implementing this digital firewall did not serve equity interests at all. The rule was easily manipulated and misused so that the voices of some were elevated while others were neutralized.



The DNA submits that this rule is inconsistent with Oregon's Administrative Procedures Act (ORS 183). Now is not the time to add to the isolation brought on by the pandemic, nor is it the time to depersonalize (disembody) public voices or worse, silence them with baffling technology that also misfired. If implemented permanently, the new rule constitutes an undemocratic procedure.

The Portland City Council has returned to a mix of in person meetings with options for digital testimony. At a recent meeting, the atmosphere was joyous to have the City Commissioners face to face with the public. Both were smiling broadly. It restored a sense of democracy in action.

Therefore, the DNA opposes the adoption of language from the temporary rule and recommends instead that OAR 736-050-0260 should not be modified.

Thank you for your consideration.

Watter E. Weyler

Walter Weyler Chair, DNA Board Wendy Rahm

Vice-Chair, DNA Board



### Submit a public comment on a rule

### **Oregon Parks and Recreation Department**

Proposed rule change:

**Historic Preservation Advisory Committee Procedures** 

Commenter name (if provided):

**Brooke Best** 

Location (if provided): Portland, OR

Date comment received:

May 30, 2022 11:02 AM

Commenter email (if provided):

bvbseattle@comcast.net

### **Public comment:**

I'm submitting these comments regarding the proposed rulemaking OAR 736-050-0260(9) that takes a temporary rule for public testimony and makes it permanent. I'm aware that the Downtown Neighborhood Association (DNA) and Kirk Ranzetta have also submitted their comments related to this rulemaking.

First, I'd like to thank both the Oregon Parks and Recreation Commission (OPRC) and State Advisory Committee on Historic Preservation (SACHP) for your dedicated service, especially in light of what occurred at the previous scheduled meeting where SACHP members were assaulted by a racist incident that shut down the October 2021 virtual meeting. No one should be subjected to that in a public meeting or personally threatened while undertaking their committee obligations.

The SACHP temporary rules for public comment was instituted in order to protect SACHP members and meeting participants, which was necessary until a digital firewall could be installed to prevent future abuse. This was achieved by eliminating the ability of presenters to be visible to the Committee and having individual testifiers' public comments reviewed and read by an OPRD staff person.

While I understand the intent of this change, instituting this revised format as a permanent measure will have a profound impact on the public's ability to share their testimony, in their own voice, in a public setting.

We had first-hand experience of its impact at the rescheduled November SACHP meeting, when the South Park Blocks nomination was being considered. The DNA made great efforts to organize a range of individuals who took the time to prepare and present their testimony. While their remarks

were part of the public record, they were read by an OPRD moderator who was visible to the Committee. Instead of hearing and seeing the individual testifier, we heard an unimpassioned white male read the words verbatim. It was more painful and tone-deaf than anything else.

Even more frustrating was the fact that an administrator from Portland State University ((a white male) was able to testify before the SACHP, using his own voice, and express his objections to the nomination. He was elevated to this status by a moderator, who treated PSU as a "property owner," which is not the case. Instead, he should have been considered a member of the public and treated the same way as the other individual testifiers. Further disappointing was the fact that much of his testimony was irrelevant to the proceeding and did not meet the provisions set forth in this temporary rule, under Section 2, which served as a means to eliminate testimony that is not pertinent to the SACHP's consideration of the nomination. As Kirk Ranzetta clearly states:

Rather than limiting his concerns to the nomination's content, the administrator embarked upon a misguided commentary that outlined the purely speculative impacts of the nomination on the 25,000 students of PSU who would be harmed by the listing and how the nomination would serve as a hindrance to the University's future use of the park that it does not own. And yet, despite the lack of pertinency and even after it was reviewed by OPRD staff, the administrator's testimony was entered into the record by his own voice despite its unfounded and immaterial content. This behavior was allowed by OPRD's moderator and the Chair while presumably following the temporary rule's non-discretionary mandate that notes that "comments **must** [emphasis added] address one or more of the criteria in section (2)". The administrator's testimony can be listened to at the following link and proceeds from 35:12 to 39:32. See the video here https://www.youtube.com/watch?v=\_WmT-schruQ

It was very evident that implementing this temporary rule did not serve equity interests but, instead, showed how it could be misdirected. In this case, it denied the voices of some, while elevating the voices of others. More importantly, this rule is inconsistent with Oregon's Administrative Procedures Act (ORS 183).

As the DNA letter pointed out, the Portland City Council recently resumed in-person meetings at City Hall (using a hybrid model allowing other participants to be seen and heard virtually). I was part of a group of citizens who showed up to present in-person testimony and from the moment we set foot in the chambers, there was a sense of comradery (and moments of joy and laughter!) being there face-to-face. Everyone there was relieved and eager to be actively engaged with each other — listening and watching people's expressions and reactions. As the DNA letter states, "It restored a sense of democracy in action."

OPRD has the ability to develop policies that utilize well-established safeguards for online meeting formats, allowing members of the public to be given the opportunity to be seen and heard. Other boards and commissions across the state have done this, so can OPRD. As the Portland City Council meeting demonstrated, there's no substitute for in-person meetings. The SACHP should resume in-person meetings as soon as possible, and could easily implement a hybrid format that

Oregon State Parks and Recreation Commission, June 15, Agenda Item 9a, Attachment C -- Page 7

utilizes readily available online protection tools.

It would be a huge mistake for OPRC to institute the adoption of this language from the temporary rule. I strongly recommend that OAR 736-050-0260 should not be modified.

Thank you for your consideration.

**Brooke Best** 



## Submit a public comment on a rule

### **Oregon Parks and Recreation Department**

Proposed rule change:

Historic Preservation Advisory Committee Procedures

**Commenter name (if provided):** 

Kirk Ranzetta

Location (if provided):,

Public comment:

**Date comment received:** 

May 31, 2022 08:56 AM

Commenter email (if provided):

kranzetta@gmail.com

Please find attached my comments on the proposed rulemaking for the State Advisory Committee on Historic Preservation.

### **Oregon Parks and Recreation Commission**

Testimony of Kirk Ranzetta Concerning Rulemaking for OAR 736-050-0260(9)

\*\*A different version of this letter was distributed by OPRD staff to State Advisory Committee on Historic Preservation on February 9, 2022\*\*

Thank you members of the State Advisory Committee on Historic Preservation (SACHP) and the Oregon Parks and Recreation Commission (OPRC) for your service. I wanted to convey how sorry I was that the State instituted a temporary rule as a result of the racist incident that occurred during the aborted online October 2021 meeting of the SACHP. No one ever deserves to be threatened or subjected to abuse like that.

I truly understand that the temporary rule was instituted to install a digital firewall to protect members of the SACHP (and all meeting participants) by eliminating the ability of presenters to be visible to the Committee and for public comments to be reviewed and then read by staff of Oregon Parks and Recreation Department (OPRD).

While well intentioned, this format has a profound ability to significantly harm the voice and visible presence of the public.

As an example, during a November meeting of the SACHP, the temporary rule had the effect of eliminating the face and voice of a woman of color who testified in support of the South Park Blocks National Register Nomination when it was considered at the November SACHP meeting. While the remarks of this individual were entered into the public record, they were dispassionately read by an OPRD moderator who is a white male and was visible. To witness how well this process worked in this particular instance, please review the SACHP meeting from 39:59 to 45:04 for the video linked here: https://www.youtube.com/watch?v=\_WmT-schruQ

Furthermore, during the very same meeting an administrator (a white male) from Portland State University (PSU) was able to use his own voice to testify before the SACHP. He was provided this opportunity by a moderator under the imprimatur he was a "property owner" which PSU is not. He should have been considered a member of the public. Prior to the meeting, the representative had provided written testimony to OPRD staff prior to the meeting concerning the South Park Blocks nomination. Unfortunately, half of his testimony was clearly not germane to the proceeding as required under section 2 of OAR 736-050-0260. This provision is referred to in the temporary rule as a means of eliminating testimony that is not pertinent to the SACHP's consideration of the nomination. For reference section 2's text is included below:

- (a) All procedural requirements are met:
- (b) The National Register nomination form is adequately documented;
- (c) The National Register nomination form is technically and professionally correct and sufficient;

(d) The National Register nomination form demonstrates that the nominated property meets the National Register criteria for evaluation.

Rather than limiting his concerns to the nomination's content, the administrator embarked upon a misguided commentary that outlined the purely speculative impacts of the nomination on the 25,000 students of PSU who would be harmed by the listing and how the nomination would serve as a hindrance to the University's future use of the park that it does not own. And yet, despite the lack of pertinency and even after it was reviewed by OPRD staff, the administrator's testimony was entered into the record by his own voice despite its unfounded and immaterial content. This behavior was allowed by OPRD's moderator and the Chair while presumably following the temporary rule's non-discretionary mandate that notes that "comments <u>must</u> [emphasis added] address one or more of the criteria in section (2)". The administrator's testimony can be listened to at the following link and proceeds from 35:12 to 39:32. See the video here <a href="https://www.youtube.com/watch?v=\_WmT-schruQ">https://www.youtube.com/watch?v=\_WmT-schruQ</a>

The implementation of the temporary rule, from its outset, readily illustrated how the existing rule can be manipulated, misused, or implemented in a slipshod fashion by participants, agency officials, and commission members in such a way that efficiently denies the voices of some while elevating the voices of others.

Having witnessed the implementation of the rule, the format was on its face Draconian. At worst it was arbitrary, capricious, and inconsistent with Oregon's Administrative Procedures Act (ORS 183). It would not survive a contested case hearing.

Given the profound isolation that many Oregonians continue to grapple with, now is not the time to depersonalize the public, silence voices, and remove faces from the SACHP's record. If it were to be implemented, the new rule would constitute a horrendous precedent that other State boards and commissions will undoubtedly point to as an effective way to truncate the public's voice and their visible presence.

Instead of minimizing the power of public input, I would recommend that OPRD develop policies that utilize well-established safeguards for the online meeting format and that members of the public be given the opportunity to be seen and heard like other boards and commissions have done across the State already. I also firmly believe that inperson meetings provide the public more substantive and productive opportunities to participate. The SACHP should resume in-person meetings as soon as possible but implement a hybrid format that utilizes readily available online protection tools.

While the events at the October 2021 meeting were undoubtedly traumatic, and the impacts palpable, I would ask that the OPRC and OPRD utilize common sense digital protections as opposed to revising the procedures that serve to depersonalize the public, silence voices, and remove faces from a state proceeding.

OPRC should not adopt language from the temporary rule and OAR 736-050-0260 should not be modified.

### Oregon Parks and Recreation Commission Meeting June 15, 2022

Agenda Item: 10a Action

Topic: Director's Expense Report

Presented by: Daniel Killiam

### **Background:**

The Oregon Accounting Manual requires annual Commission review of specific financial transactions of the agency head. The review must be documented in the meeting minutes. Those transactions include travel, exceptional performance leave, and vacation payoff. Attached is a summary of Director Lisa Sumption's travel expenses. Travel reimbursement requests for all Department staff (including the director) are reviewed prior to payment by Financial Services Division staff to ensure compliance with state employee travel rules.

Director Sumption had no exceptional performance leave and no vacation payout for 2021.

### **Action Requested:**

Staff request approval of Director Sumptions's specific financial transactions, per the Oregon Accounting Manual.

Prepared by: Rebecca Jasso

# Oregon Parks and Recreation Department Report of Director Lisa Sumption Expenses For the Period January 1, 2021 through December 31, 2021 Expense

	Date	Travel Destination and Purpose	<b>Actual Cost</b>	Reimbursement	Document #	Comments
1	07/11/21	Bismark, Arkansas/NASPD Board Meeting	293.29	-	VP066033	Airfare paid with US Corporate Visa
2	06/09/21	Collier State Park Visit	43.42	43.42	VP066035	Gas Reimbursement for State Vehicle
3	07/27/21-07/30/21	Wheeling, West Virginia-SPLS Bismark, Arkansas/NASPD Board	588.65	-	VP066381	Airfare paid with US Corporate Visa
4	07/11/21-07/13/21	Meeting	209.40	209.40	VP066407	
5	07/26/21-07/30/21	Virginia - SPLS	213.75	213.75	VP066586	
5	07/26/21-07/30/21 09/10/2021	Virginia - SPLS	213.75	213.75	VP066619	
5	07/26/-07/30/21	Virginia - SPLS	(213.75)	(213.75)	WC121112	DUPLICATE CHECK CANCELLED
6	08/13/21	Coastal Meeting/Trip	59.01	59.01	VP066755	Fuel purchase
7	09/07/21	Air Travel Pittsburgh/Naspd	870.41	-	VP066885	
7	07/20/24	Air Troyal Virgina/Dortland	438.50		VDOCCOOL	ahan aad aakuusin a fii ahk
7	07/30/21	Air Travel Virgina/Portland	430.50	-	VP066885	changed returning flight
8	09/06/21-09/12/21	NASPD Conference	274.22	274.22	VP066898	
9	09/28/21-09/30/21	ORB/DG Meeting-John Day, OR	242.11	242.11	VP066898	
10	10/25/21-10/28/21	Chiloquin, OR / Stihl Tree Planting	761.09	761.09	VP067166	
10	10/25/21-10/28/21	Chiloquin, OR / Stihl Tree Planting	(761.09)	(761.09)	CR021044/ VP067166	Reimbursed duplicate payment
11	10/25/21-10/28/21	Chiloquin, OR / Stihl Tree Planting SOUTH CAROLINA AIRFARE FOR	893.84	893.84	VP067288	
12	12/20/21	MARCH 13, 2022 - MARCH 17, 2022 NASPD	425.95	-	VP067689	Airfare paid with US Corporate Visa
		TOTAL	4,552.55	1,935.75		

		O	REGON PARKS AND RE	CR	EATION DE	PARTMEN	Т				
			Procurem								
Executed	Contractor	Location	March ar	FIP	Original Contract \$	Current Amendment	Amendments To Date	Current Contract Value	Comments	Commision Approval Date	Number
GOODS AN	ID/OR SERVICES CONTRACTS				, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						
03/07/22	Cycle Oregon, Inc.	Statewide	Restart the Oregon Scenic Bikeways program		\$150,000			\$150,000	New Contract.		9023
03/15/22	Oregon Beach Rides, LLC	Nehalem Bay State Park in Tillamook County	Guided Equestrian Rides		\$265,000	\$0	\$0	\$265,000	Amendment 6 extends the termination date, adds mutual termination language and other provisions as negotiated. This is a concession contract with estimated revenue.		7408
03/23/22	Galls, LLC	Statewide	Uniform Items		\$0	\$0	\$0	\$0	Amendment 13 extends the termination date one year and updates the price list.		5765
04/04/22	Heart of Oregon Corps, Inc.	Prineville Reservoir State Park in Crook County	Trail Maintenance	х	\$5,000			\$5,000	New Cooperative Agreement for youth job development.		9060
04/04/22	Superaxe Contract Cutting, Inc	Wallowa Lake State Recreation Area in Wallowa County	Firewood		\$140,000	\$0	\$140,000	\$280,000	Amendment 6 extends the Price Agreement termination		7670
04/12/22	Tillamook Ice Company LLC	Cape Lookout State Park in Tillamook	Bagged Ice Service		\$37,500	\$0	\$0	\$37,500	Amendment 1 extends the termination date.		8251
04/27/22	Willamette Riverkeeper	County Willamette River Greenway in Multnomah, Benton, Columbia, Yamhill, Polk, Marion, Clackamas, Linn, and Lane Counties	Aquatic Invasive Species Management and Outreach		\$5,000			\$5,000	New Contract.		9082
PERSONAL	SERVICES CONTRACTS										
03/23/22	Jon Stover and Associates, LLC	Oregon Heritage Division	Oregon Main Street Impact Study		\$58,480			\$58,480	New Contract.		9018
04/08/22	SOLVE	Statewide	SOLVE's Ocean Shores and Riverside Clean Up, Outreach, and Adopt-A-Beach Program		\$80,000			\$80,000	New Contract.		9071
04/28/22	Sennewald Land-Use Consulting LLC	Coastal Region	Ocean Shores Permit Consultation Services		\$10,000	\$2,500	\$2,500	\$12,500	Amendment 1 reduces the Agreement termination date and increases funding.		9026
PUBLIC IM	PROVEMENTS CONTRACTS										
03/07/22	Cascade Civil Corp.	Yachats Ocean Road State Natural Site in Lincoln County	Amanda's Pedestrian Bridge Replacement	х	\$434,277	\$26,484	\$212,968	\$647,245	Change Order 3 adds additional materials and labor to complete the project.		8925
03/21/22	Cascade Civil Corp.	Yachats Ocean Road State Natural Site in Lincoln County	Amanda's Pedestrian Bridge Replacement	х	\$434,277	(\$1,200)	\$211,768	\$646,045	Change Order 4 removes line item 7.		8925
04/06/22	Jesse Rodriguez Construction, LLC	Pilot Butte State Scenic Viewpoint in Deschutes County	Pilot Butte Paving Project	х	\$538,007			\$538,007	New Contract.	11/18/2021	8878-2
ARCHITEC	TURAL AND ENGINEERING SE	RVICES CONTRACTS									
04/12/22	KPFF, Inc.	Silver Falls State Park in Marion County	RV Dump Station Engineering and Design	х	\$51,500			\$51,500	New Contract.		9070
ARCHITEC	TURAL AND ENGINEERING SE	RVICES CONTRACTS (RELA	TED SERVICES)	1		<u> </u>	<u> </u>	L			
03/30/22	Abbaté Designs, LLC	County	State Capitol State Park - Cherry Tree Succession Plan		\$7,000	\$17,609	\$17,609	\$24,609	Amendment 1 adds Phase 2 for a 20-year succession plan and adds additional funding.		9025
4/13/2022	Susan L. Licht	Collier Logging Museum, Collier Memorial State Park in Klamath County	Project Management Services	х	\$15,590	\$0	\$0	\$15,590	Amendment 1 extends the Contract termination date.		8964
INTERGOV	ERNMENTAL AGREEMENTS										
03/17/22	Jefferson County Sheriff's Office	Warm Springs State Recreation Area in Jefferson County	Warm Springs State Recreation Area Jefferson County Sheriff's Law Enforcement Services	,	\$135,000	\$0	\$0	\$135,000	Amendment 1 extends the Agreement termination date and updates Section 6 (b)Vehicle Mileage Rate and (c) Employees Wage rates of the original Agreement.		8098
03/29/22	DAS Surplus	Statewide	Volunteer Programs Items Fulfillment		\$6,000	\$12,000	\$12,000	\$18,000	Amendment 1 extends the Agreement termination date, increases funding and updates shipping services information.		8576
03/31/22	Sherman County	Starvation Lane at Cottonwood Canyon State Park in Gilliam and Sherman Counties	Construction of Access Road, Parking Lot and Boat Ramp		\$0			\$0	New Agreement.		8795
04/11/22	City of Bend	Pilot Butte State Scenic Viewpoint in Deschutes County	Wireless Communication Equipment Installation and Maintenance		\$1			\$1	New Agreement.		9012
04/20/22	Hood River County	Hood River County	Trail Equipment Loan Agreement		\$0	\$0	\$0	\$0	Amendment 1 reinstates the Agreement and extends the termination date.		7974
04/20/22	Jefferson County Sheriff's Office	The Cove Palisades State Park in Jefferson County	Law Enforcement Services		\$90,000			\$90,000	New Agreement.		9057
04/26/22	Southern Oregon University	Kam Wah Chung State Heritage Site in Grant County	Archaeological Investigations for the Kam Wah Chung Interpretive Center and Collections Building		\$32,487			\$32,487	New Agreement.		9096
04/28/22	Union County	Union County	Trail Maintenance Equipment Loan		\$1			\$1	Amendment 1 extends the termination date of the Agreement to 2027.		8024

### **Oregon Parks and Recreation Commission**

June 15, 2022

Agenda Item: 10b(ii,iii) Informational

Public Comment Allowed: Yes

Topic: Actions taken under Delegated Authority from April 1, 2022 through

May 23, 2022

Presented by: Guy Rodrigue, Central Park Resource Manager

Pursuant to a duly adopted delegation order, and acting in accordance therewith, the Director, or her designee, has approved the following actions on behalf of the Oregon Parks & Recreation Commission:

### **SCENIC WATERWAYS NOTIFICATION**

On April 4, 2022 a Notification of Intent 21-2-22 was approved for OPRD for a timber harvest of 8 acres out of 90-acre harvest unit on Weyerhaeuser property within the Molalla Scenic Waterway. The harvest unit and 900' of new road cannot be viewed from the river due to the terrain. Unit will be reforested with 300-400 Douglas-fir seedlings.

On April 5, 2022 a Notification of Intent 2B-1091-22 was approved for the construction of a single-family residence within the Upper Deschutes Scenic Waterway. The proposal was approved because the home exceeds setback limitations, meets height requirements and will be finished in dark colors that blend in with the home across the street (that are actually on the rimrock). Mature vegetation exists and remains on site that will help screen this property from view of the river.

On April 6, 2022 a Notification of Intent 2B-1092-22 was approved for the construction of a fixed based operations building and related improvements at the Sunriver Airport within the Upper Deschutes Scenic Waterway. The proposal was approved because the area, topography, existing buildings and distance from the river makes this new structure unlikely to be visible from the river. Furthermore, the building will be finished in exterior materials that will blend in to the surrounding environment.

On April 6, 2022 a Notification of Intent 2B-1093-22 was approved for the construction of a new single-family residence with the Upper Deschutes Scenic Waterway. The proposal was approved because the home meets height and setback limitations and will be finished in dark, muted colors. Property parcel is at the far edge of the ¼-mile corridor with amble screening between this property and the edge of the river, as such visibility of the property from the river is unlikely.

On April 7, 2022 a Notification of Intent 2B-1094-22 was approved for the construction of a new single-family residence within the Upper Deschutes Scenic Waterway. The home was approved because the construction will be finished in exterior colors and materials that are muted in the surrounding natural environment. The house is below the maximum height allowance and is consistent with setback requirements for this section of the Deschutes river.

On April 20, 2022 a Notification of Intent 2B-1095-22 was approved for the construction of a new single-family residence within the Upper Deschutes Scenic Waterway. The home will fall below height limitations, exceeds setback and be finished in muted colors that blend in with the environment. The property improvements will ensure that existing evergreen vegetation screening on site to help obscure the new development.

On May 4, 2022 a Notification of Intent 2-216-22 was approved for the removal and addition of an existing residence within the Lower Deschutes Scenic Waterway. The work was approved because most of the improvements will not be visible from view of the river because they are on the front side of the home. The covered porch improvements at the back of the home as it's proposed are in compliance with the Scenic Waterway regulations because it will remain 30' in height, is setback 100' from the high-water mark and is finished in colors that will blend in with the surrounding environment.

On May 4, 2022 a Notification of Intent 2B-1097-22 was approved for the remodel and addition to an existing residence along the Upper Deschutes River. The improvements were approved because the home meets setback requirements, the work will not affect existing visibility of the structure from the river and the exterior colors blend with the surrounding environment.

### OCEAN SHORES ALTERATION DECISIONS

None for reporting period.

### TIMBER HARVEST REVENUE

None for reporting period.

**Prior Action by the Commission:** None

**Action Requested:** None **Attachments:** None

Prepared by: Central Park Resource Section Staff

## Oregon Parks and Recreation Commission June 15, 2022

Agenda Item: 10b(i) Information

Topic: Contracts and Procurement Report

Presented by: Daniel Killam, Deputy Director of Administrations

### The attached report includes:

- 5 New Agreements for a total of \$127,488
- 6 New Contracts for total of \$882,987
- 13 Amendments for a total of \$57,394

Action Requested: None

**Attachments:** 10b(i) Attachment A Contracts and Procurement

**Prepared by:** Bryant Hayes