



CLACKAMAS COUNTY
NOTICE OF PUBLIC IMPROVEMENT CONTRACT OPPORTUNITY

INVITATION TO BID #2017-25
CBX Fiber Lake Oswego School District Expansion- Phase2
March 29, 2017

Clackamas County ("County") through its Board of County Commissioners is accepting sealed bids for the **CBX Fiber Lake Oswego School District Expansion-Phase 2** Project until **April 19, 2017, 2:00 PM**, Pacific Time, ("Bid Closing") at the following location:

DELIVER BIDS TO: Clackamas County Procurement Division, Clackamas County Public Services Building, 2051 Kaen Road, Oregon City, OR 97045. Telephone (503) 742-5444.

Bid packets are available from 7:00 AM to 6:00 PM Monday through Thursday at the above address or may be obtained at the Clackamas County Procurement Website at <http://www.clackamas.us/bids/>.

Contact Information

Technical and Procurement Process Questions: Ryan Rice, 503-742-5446, rrice@clackamas.us

Bids will be opened and publicly read aloud at the above Delivery address after the Bid Closing. Bid results will also be posted to the Clackamas County Procurement Website shortly after the opening.

Prevailing Wage Rates requirements apply to this Project because the maximum compensation for all Owner-contracted Work is more than \$50,000. Contractor and all subcontractors shall comply with the provisions of ORS 279C.800 through 279C.870, relative to Prevailing Wage Rates. The Bureau of Labor and Industries (BOLI) wage rates and requirements set forth in the following BOLI booklet (and any listed amendments to that booklet), which are incorporated herein by reference, apply to the Work authorized under this Agreement:

PREVAILING WAGE RATES for Public Works Contracts in Oregon, January 1, 2017, which can be downloaded at the following web

address: http://www.oregon.gov/boli/WHD/PWR/Pages/pwr_state.aspx.

The Work will take place in Clackamas County, Oregon.

Clackamas County encourages bids from Minority, Women, and Emerging Small Businesses.



CLACKAMAS COUNTY PUBLIC IMPROVEMENT CONTRACT OPPORTUNITY

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CLACKAMAS COUNTY PUBLIC IMPROVEMENT CONTRACT

INSTRUCTIONS TO BIDDERS

Clackamas County Local Contract Review Board Rules ("LCRB Rules") govern this procurement process. LCRB Rules may be found at: <http://www.clackamas.us/code/documents/appendixc.pdf>. The Instructions to Bidders is applicable to the procurement process for Clackamas County, or any component unit thereof identified on the Notice of Public Improvement Contract Opportunity, herein after referred to as the "Owner."

Article 1. Scope of Work

The work contemplated under this contract with the Owner, includes all labor, materials, transportation, equipment and services necessary for, and reasonably incidental to, the completion of all construction work in connection with the project described in the Project Manual which includes, but is not necessarily limited to, the Notice of Public Improvement Contract Opportunity, Instructions to Bidders, Supplemental Instructions to Bidders, Bid Form, Bid Bond, Public Improvement Contract Form, Performance Bond, Payment Bond, Clackamas County General Conditions for Public Improvement Contracts (1/1/2017), Supplemental General Conditions, and Plans, Specifications and Drawings.

Article 2. Examination of Site and Conditions

Before making a Bid, the Bidder shall examine the site of the work and ascertain all the physical conditions in relation thereto. The Bidder shall also make a careful examination of the Project Manual including the plans, specifications, and drawings and other contract documents, and shall be fully informed as to the quality and quantity of materials and the sources of supply of the materials. Failure to take these steps will not release the successful Bidder from entering into the contract nor excuse the Bidder from performing the work in strict accordance with the terms of the contract at the price established by the Bid.

The Owner will not be responsible for any loss or for any unanticipated costs, which may be suffered by the successful Bidder, as a result of such Bidder's failure to be fully informed in advance with regard to all conditions pertaining to the work and the character of the work required, including site conditions. No statement made by an elected official, officer, agent, or employee of the Owner in relation to the physical or other conditions pertaining to the site of the work will be binding on the Owner, unless covered by the Project Manual or an Addendum.

Article 3. Interpretation of Project Manual and Approval of Materials Equal to Those Provided in the Specifications

If any Bidder contemplating submitting a Bid for the proposed contract is in doubt as to the true meaning of any part of the plans, specifications or forms of contract documents, or detects discrepancies or omissions, such Bidder may submit to the Architect (read "Engineer" throughout in lieu of Architect as appropriate) a written request for an interpretation thereof at least ten (10) calendar days prior to the date set for the Bid Closing.

When a prospective Bidder seeks approval of a particular manufacturer's material, process or item of equal value, utility or merit other than that designated by the Architect in the Project Manual, the Bidder may submit to the Architect a written request for approval of such substitute at least ten (10) calendar days prior to the date set for the Bid Closing. The prospective Bidder submitting the request will be responsible for its prompt delivery.

Requests of approval for a substitution from that specified shall be accompanied by samples, records of performance, certified copies of tests by impartial and recognized laboratories, and such

other information as the Architect may request.

To establish a basis of quality, certain processes, types of machinery and equipment or kinds of materials may be specified in the Project Manual either by description of process or by designating a manufacturer by name and referring to a brand or product designation or by specifying a kind of material. Whenever a process is designated or a manufacturer's name, brand or item designation is given, or whenever a process or material covered by patent is designated or described, it shall be understood that the words "or approved equal" follow such name, designation or description, whether in fact they do so or not.

Any interpretation of the Project Manual or approval of manufacturer's material will be made only by an Addendum duly issued. All Addenda will be posted to the Clackamas County Procurement Website (www.clackamas.us/bid) will become a part of the Project Manual. The Owner will not be responsible for any other explanation or interpretation of the Project Manual nor for any other approval of a particular manufacturer's process or item for any Bidder.

When the Architect approves a substitution by Addendum, it is with the understanding that the Contractor guarantees the substituted article or material to be equal or better than the one specified.

Article 4. Security to Be Furnished by Each Bidder

Each Bid must be accompanied by either 1) a cashier's check or a certified check drawn on a bank authorized to do business in the State of Oregon, or 2) a Bid bond described hereinafter, executed in favor of the Owner, for an amount equal to ten percent (10%) of the total amount Bid as a guarantee that, if awarded the contract, the Bidder will execute the contract and provide a performance bond and payment bond as required. The successful Bidder's check or Bid bond will be retained until the Bidder has entered into a contract satisfactory to Owner and furnished a one hundred percent (100%) performance bond and one hundred percent (100%) payment bond. The Owner

reserves the right to hold the Bid security as described in Article 10 hereof. Should the successful Bidder fail to execute and deliver the contract as provided for in Article 12 hereof, including a satisfactory performance bond and payment bond within twenty (20) calendar days after the Bid has been accepted by the Owner, then the contract award made to such Bidder may be considered canceled and the Bid security may be forfeited as liquidated damages at the option of the Owner. The date of the acceptance of the Bid and the award of the contract as contemplated by the Project Manual shall mean the date of acceptance specified in the Notice of Intent to Award.

Article 5. Execution of Bid Bond

Should the Bidder elect to utilize a Bid bond as described in Article 4 in order to satisfy the Bid security requirements, such form must be completed in the following manner:

- A. Bid bonds must be executed on the County forms, which will be provided to all prospective Bidders by the Owner.
- B. The Bid bond shall be executed on behalf of a bonding company licensed to do business in the State of Oregon.
- C. In the case of a sole individual, the bond need only be executed as principal by the sole individual. In the case of a partnership, the bond must be executed by at least one of the partners. In the case of a corporation, the bond must be executed by stating the official name of the corporation under which is placed the signature of an officer authorized to sign on behalf of the corporation followed by such person's official capacity, such as president, etc. The corporation seal should then be affixed to the bond.
- D. The name of the surety must be stated in the execution over the signature of its duly authorized attorney-in-fact and accompanied by the seal of the surety corporation.

Article 6. Execution of the Bid Form

Each Bid shall be made in accordance with: (i) the sample Bid Form accompanying these instructions; (ii) the appropriate signatures for a sole individual, partnership, corporation or limited liability corporation shall be added as noted in Article 5C above; (iii) numbers pertaining to base Bids shall be stated both in writing and in figures; and (iv) the Bidder's address shall be typed or printed.

The Bid Form relates to Bids on a specific Project Manual. Only the amounts and information asked for on the Bid Form furnished will be considered as the Bid. Each Bidder shall Bid upon the work exactly as specified and provided in the Bid Form. The Bidder shall include in the Bid a sum to cover the cost of all items contemplated by the Contract. The Bidder shall Bid upon all alternates that may be indicated on the Bid Form. When Bidding on an alternate for which there is no charge, the Bidder shall write the words "No Charge" in the space provided on the Bid Form. If one or more alternates are shown on the Bid Form, the Bidder shall indicate whether each is "add" or "deduct."

Article 7. Prohibition of Alterations to Bid

Bids that are incomplete, or contain ambiguities or have differing conditions required by the Bidder, including requested changes or exceptions to the Public Improvement Contract form or other portions of the Project Manual, may be rejected in Owner's sole and absolute discretion.

Article 8. Submission of Bid

Each Bid shall be sealed in an envelope, properly addressed to the Owner, showing on the outside of the envelope the name of the Bidder and the name of the project. Bids will be received at the time and place stated in the Notice of Public Improvement Contract Opportunity.

Article 9. Bid Closing and Opening of Bids

All Bids must be received by the Owner at the place and time set for the Bid Closing. Any Bids received after the scheduled Bid Closing time for receipt of Bids will be rejected.

At the time of opening and reading of Bids, each Bid received will be publicly opened and read aloud, irrespective of any irregularities or informalities in such Bids.

Generally, Bid results will be posted to the Procurement Website within a couple hours of the opening.

Article 10. Acceptance or Rejection of Bids by Owner

Unless all Bids are rejected, the Owner will award a contract based on the lowest responsive Bid from a responsible Bidder. If that Bidder does not execute the contract, it will be awarded to the next lowest responsible Bidder or Bidders in succession.

The Owner reserves the right to reject all Bids and to waive minor informalities. The procedures for contract awards shall be in compliance with the provisions of the LCRB Rules in effect at that time.

The Owner reserves the right to hold the Bid and Bid security of the three lowest Bidders for a period of thirty (30) calendar days from and after the time of Bid opening pending award of the contract. Following award of the contract the Bid security of the three lowest Bidders may be held twenty (20) calendar days pending execution of the contract. All other Bids will be rejected and Bid security will be returned.

In determining the lowest Bidder, the Owner reserves the right to take into consideration any or all authorized base Bids as well as alternates or combinations indicated in the Bid Form.

If no Bid has been accepted within thirty (30) calendar days after the opening of the Bids, each of the three lowest Bidders may withdraw the Bid submitted and request the return of the Bid security.

Article 11. Withdrawal of Bid

At any time prior to the Bid Closing, a Bidder may withdraw its Bid. This will not preclude the submission of another Bid by such Bidder prior to the time set for the Bid Closing.

After the time set for the Bid Closing, no Bidder will be permitted to withdraw its Bid within the time frames specified in Article 10 for award and execution, except as provided for in that Article.

Article 12. Execution of Contract, Performance Bond and Payment Bond

The Owner will provide the successful Bidder with contract forms within seven (7) calendar days after the completion of the award protest period. The Bidder is required to execute the contract forms as provided, including a performance bond and a payment bond from a surety company licensed to do surety business in the State of Oregon, within seven (7) calendar days after receipt of the contract forms. The contract forms shall be delivered to the Owner in the number called for and to the location as instructed by the Owner.

Article 13. Recyclable Products

Contractors will use recyclable products to the maximum extent economically feasible in the performance of the Contract.

Article 14. Clarification or Protest of the Solicitation Document or Specifications

Any request for clarification or protest of the solicitation document or specifications must be submitted in the manner provided for in the applicable section of the LCRB Rules to the Procurement Representative referenced in the Notice of Public

Clackamas Contract Form B-2 (1/2017)

Improvement Contract Opportunity.

A protest of the Solicitation Document must be received within seven (7) business days of the issuance of the Bid or within three (3) business days of issuance of an addendum.

Requests for clarification may be submitted no less than five (5) business days prior to the Bid Closing Date.

Article 15. Protest of Intent to Award

Owner will name the apparent successful Bidder in a "Notice of Intent to Award" letter. Identification of the apparent successful Bidder is procedural only and creates no right in the named Bidder to the award of the contract. Competing Bidders will be notified by publication of the Notice of Intent to Award on the Clackamas County Procurement Website of the selection of the apparent successful Bidder(s) and Bidders shall be given seven (7) calendar days from the date on the "Notice of Intent to Award" letter to review the file at the Procurement Division office and file a written protest of award, pursuant to C-049-0450. Any award protest must be in writing and must be delivered by hand delivery or mail to the Procurement Division Director at: Procurement Division, 2051 Kaen Road, Oregon City, OR 97045.

Article 16. Disclosure of First-Tier Subcontractors

Within two (2) working hours after the Bid Closing, all Bidders shall submit to the County a disclosure form identifying any first-tier subcontractors (those entities that would be contracting directly with the prime contractor) that will be furnishing labor and materials on the contract, if awarded, whose subcontract value would be equal to or greater than: (a) Five percent (5%) of the total contract price, but at least \$15,000; or (b) \$350,000, regardless of the percentage of the total contract price.

Disclosures may be submitted with the Bid or may be hand delivered to the Bid Closing address or emailed to procurement@clackamas.us.



**CLACKAMAS COUNTY
PUBLIC IMPROVEMENT CONTRACT**

SUPPLEMENTAL INSTRUCTIONS TO BIDDERS

Project Name: CBX Fiber – Lake Oswego School District Expansion-Phase 2

The following modify the Clackamas County “Instructions to Bidders” for this Project. Where a portion of the Instructions to Bidders has been modified by these Supplemental Instructions to Bidders, the unaltered portions shall remain in effect.

Good Faith Effort: Clackamas County encourages participation in contracts by Historically Underrepresented Businesses. “Historically Underrepresented Businesses” are State of Oregon-certified and self-identified minority, women and emerging small business as well as firms that are certified federally or by another state or entity with substantially similar requirements as the State of Oregon.

Bidders must perform Good Faith Effort (defined below) and submit **Form 1 and Form 2** for the Bidders Bid to be considered responsive. **Form 1 and Form 2** must be submitted within two (2) hours after the Closing Date and Time. Form 1 and Form 2 may be submitted by hand delivery to the location the Bid was due or may email the completed Forms to Procurement@clackamas.us. “Good Faith Effort” is a requirement of a prime contractor to reach out to at least three Historically Underrepresented Business Subcontractors for each division of work that will be subcontracted out and to complete the required forms. If fewer than three Historically Underrepresented Business Subcontractors are reasonably available for a particular division of work, the Bidder must specifically note the reason for there being fewer than three contacts. The outreach should be performed with sufficient time to give the subcontractors at least 5 calendar days to respond to the opportunity. Form 3, which documents the actual amount of subcontractors on the project, must be submitted with the project final pay application. Compliance with the Good Faith Effort and submission of Forms 1, 2 and 3 is a contractual requirement for final payment.

The sufficiency of the documentation or the performance of Good Faith Effort shall be in the sole and absolute determination of Clackamas County. Only those Bidders that Clackamas County has determined have not sufficiently performed Good Faith Effort shall have protest rights of the determination for such Bidder. No Bidder shall have protest rights of the sufficiency of any other Bidder completing Good Faith Effort.

**CLACKAMAS COUNTY
GOOD FAITH EFFORT
SUBCONTRACTOR AND SELF-PERFORMED WORK LIST
(FORM 1)**

Prime Contractor Name:

Total Contract Amount:

Project Name: CBX Fiber Lake Oswego School District Expansion- Phase 2

PRIME SELF-PERFORMING: Identify below **ALL** GFE Divisions of Work (DOW) to be self-performed. Good Faith Efforts are otherwise required.

<u>DOW BIDDER WILL SELF-PERFORM</u> <i>(GFE not required)</i>	

PRIME CONTRACTOR SHALL DISCLOSE AND LIST ALL SUBCONTRACTORS, including those Minority-owned, Woman-owned, and Emerging Small Businesses ("M/W/ESB") that you intend to use on the project. Hand delivery to Procurement, 2051 Kaen Road, Oregon City, OR 97045 or email to procurement@clackamas.us within 2 hours of the BID/Quote Closing Date/Time


<u>LIST ALL SUBCONTRACTORS BELOW</u> Use <u>correct legal name</u> of Subcontractor (No Assumed Business Names)	Division of Work (Painting, electrical, landscaping, etc.) List ALL DOW performed by Subcontractors	DOLLAR AMOUNT OF SUBCONTRACT	If Certified or self-reporting MBE/WBE/ESB Subcontractor Check box		
			MBE	WBE	ESB
Name Address City/St/Zip Phone# OCCB#			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Name Address City/St/Zip Phone# OCCB#			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Name Address City/St/Zip Phone# OCCB#			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Name Address City/St/Zip Phone# OCCB#			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

GFE SUBCONTRACTOR AND SELF-PERFORMED WORK LIST (FORM 1) cont'd

Prime Contractor Name:

Total Contract Amount:

Project Name: CBX Fiber Lake Oswego School District Expansion- Phase 2

LIST ALL SUBCONTRACTORS BELOW Use <u>correct legal name</u> of Subcontractor (No Assumed Business Names)	Division of Work (Painting, electrical, landscaping, etc.) List ALL DOW performed by Subcontractors	DOLLAR AMOUNT OF SUBCONTRACT	If Certified or self-reporting MBE/WBE/ESB Subcontractor Check box 		
			MBE	WBE	ESB
Name Address City/St/Zip Phone# OCCB#			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Name Address City/St/Zip Phone# OCCB#			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Name Address City/St/Zip Phone# OCCB#			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Name Address City/St/Zip Phone# OCCB#			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Name Address City/St/Zip Phone# OCCB#			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Name Address City/St/Zip Phone# OCCB#			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Name Address City/St/Zip Phone# OCCB#			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CLACKAMAS COUNTY
GOOD FAITH EFFORT
M/W/ESB CONTACT / BIDS RECEIVED LOG
(FORM 2)

Prime Contractor:
Project: CBX Fiber Lake Oswego School District Expansion- Phase 2

Prime Contractor must contact or endeavor to contact at least 3 M/W/ESB Subcontractors for each Division of Work. Prime Contractor shall record its contacts with M/W/ESB Subcontractors through use of this log (or equivalent) entering all required information. All columns shall be completed where applicable. Additional forms may be copied if needed.

NAME OF M/W/ESB SUBCONTRACTOR	Divisions of Work (Painting, electrical, landscaping, etc.)	Date Solicitation Letter / Fax Sent	PHONE CONTACT		BID ACTIVITY Check Yes or No			REJECTED BIDS (if bid received & not used)		Notes
					Will Bid	Bid Received	Bid Used	Bid Amount	Reason Not Used (Price, Scope or Other. If Other, explain in Notes>>)	
			Date of Call	Person Receiving Call						
					<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes			
					<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No			
					<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes			
					<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No			
					<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes			
					<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No			
					<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes			
					<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No			
					<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes			
					<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No			
					<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes			
					<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No			
					<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes			
					<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No			
					<input type="checkbox"/> Yes	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes			
					<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> No			

**CLACKAMAS COUNTY
GOOD FAITH EFFORT
PROJECT COMPLETION REPORT
(FORM 3)**

Prime Contractor Name:

Total Contract Amount:

Project Name: CBX Fiber Lake Oswego School District Expansion- Phase 2

Complete this form and submit with your request for final payment upon the project completion. Please list all subcontractors used for the project. Use additional sheets as necessary.

LIST ALL SUBCONTRACTORS BELOW Use <u>correct legal name</u> of Subcontractor (No Assumed Business Names)	Division of Work (Painting, electrical, landscaping, etc.) List ALL DOW performed by Subcontractors	FINAL DOLLAR AMOUNT OF SUBCONTRACT	If Certified or self-reported MBE/WBE/ESB Subcontractor Check box <input checked="checked" type="checkbox"/>		
			MBE	WBE	ESB
Name Address City/St/Zip Phone# OCCB#			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Name Address City/St/Zip Phone# OCCB#			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Name Address City/St/Zip Phone# OCCB#			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Name Address City/St/Zip Phone# OCCB#			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Name Address City/St/Zip Phone# OCCB#			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Name Address City/St/Zip Phone# OCCB#			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

BY SIGNING BELOW, I HEREBY CERTIFY THAT THE ABOVE LISTED FIRMS HAVE BEEN UTILIZED BY OUR COMPANY IN THE AMOUNTS REPRESENTED ABOVE AND THAT THE INFORMATION CONTAINED HEREIN IS COMPLETE AND ACCURATE. .

Authorized Signature of Contractor Representative

Date



**CLACKAMAS COUNTY
PUBLIC IMPROVEMENT CONTRACT**

BID BOND

Project Name: CBX Fiber – Lake Oswego School District Expansion-Phase 2

We, _____, as "Principal,"
(Name of Principal)

and _____, an _____ Corporation,
(Name of Surety)

authorized to transact Surety business in Oregon, as "Surety," hereby jointly and severally bind ourselves, our respective heirs, executors, administrators, successors and assigns to pay unto **[Insert applicable Component Unit name]** Clackamas County ("Obligee") the sum of (\$_____)

_____ dollars.

WHEREAS, the condition of the obligation of this bond is that Principal has submitted its proposal or bid to an agency of the Obligee in response to Obligee's procurement document (No. _____) for the project identified above which proposal or bid is made a part of this bond by reference, and Principal is required to furnish bid security in an amount equal to ten (10%) percent of the total amount of the bid pursuant to the procurement document.

NOW, THEREFORE, if the Obligee shall accept the bid of the Principal and the Principal shall enter into a Contract with the Obligee in accordance with the terms of such bid, and give such bond or bonds as may be specified in the bidding or Contract Documents with good and sufficient surety for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof, or in the event of the failure of the Principal to enter such Contract and give such bond or bonds, if the Principal shall pay to the Obligee the difference not to exceed the penalty hereof between the amount specified in said bid and such larger amount for which the Obligee may in good faith contract with another party to perform the Work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect.

IN WITNESS WHEREOF, we have caused this instrument to be executed and sealed by our duly authorized legal representatives this _____ day of _____, 20_____.

Principal: _____

Surety: _____

By: _____
Signature

By: Attorney-In-Fact

Official Capacity

Name

Attest: _____
Corporation Secretary

Address

City State Zip

Phone Fax



**CLACKAMAS COUNTY
PUBLIC IMPROVEMENT CONTRACT**

BID FORM

PROJECT: **CBX Fiber – Lake Oswego School District Expansion-Phase 2**
BID CLOSING: April 19, 2017, 2:00 PM, Pacific Time
BID OPENING: April 19, 2017, 2:05 PM, Pacific Time

FROM: _____
Bidder's Name (must be full legal name, not ABN/DBA)

TO: Clackamas County
Procurement Division
2051 Kaen Road
Oregon City, OR 97045

1. Bidder is *(check one of the following and insert information requested)*:

- ____ a. An individual; or
- ____ b. A partnership registered under the laws of the State of _____; or
- ____ c. A corporation organized under the laws of the State of _____; or
- ____ d. A limited liability corporation organized under the laws
of the State of _____;

and authorized to do business in the State of Oregon hereby proposes to furnish all material and labor and perform all work hereinafter indicated for the above project in strict accordance with the Contract Documents for the Basic Bid as follows:

_____ Dollars (\$_____)

and the Undersigned agrees to be bound by the following documents:

- Notice of Public Improvement Contract Opportunity
 - Instructions to Bidders
 - Bid Bond
 - Performance Bond and Payment Bond
 - Supplemental General Conditions
 - Payroll and Certified Statement Form
 - Supplemental Instructions to Bidders
 - Public Improvement Contract Form
 - Clackamas County General Conditions
 - Prevailing Wage Rates
 - Project Information, Plans, Specifications and Drawings
- ADDENDA numbered _____ through _____, inclusive *(fill in blanks)*

2. The Undersigned proposes to add to or deduct from the Base Bid indicated above the items or work relating to the following Unit Price(s) as designated in the Specifications, for which any adjustments in the Contract amount will be made in accordance with Section D of the Clackamas County General Conditions:

UNIT PRICE #1: Tree Pruning (non arborist) ADD: \$ _____
Adder – Per Linear Foot

UNIT PRICE #2: Directional Rock Bore One ADD: \$ _____
2” SDR11 HDPE Rock
Adder – Per Linear Foot

UNIT PRICE #3: Directional Rock Bore (3) ADD: \$ _____
1-1/4” SDR11 HDPE Adder
– Per Linear Foot

3. The work shall be completed within the time stipulated and specified in the Project Information, Plans, Specifications and Drawings.

4. Accompanying herewith is Bid Security which is equal to ten percent (10%) of the total amount of the Basic Bid.

5. The Undersigned agrees, if awarded the Contract, to execute and deliver to Clackamas County, within twenty (20) calendar days after receiving the Contract forms, a Contract Form, and a satisfactory Performance Bond and Payment Bond each in an amount equal to one hundred percent (100%) of the Contract sum, using forms provided by the Owner. The surety requested to issue the Performance Bond and Payment Bond will be:

(name of surety company - not insurance agency)

The Undersigned hereby authorizes said surety company to disclose any information to the Owner concerning the Undersigned's ability to supply a Performance Bond and Payment Bond each in the amount of the Contract.

6. The Undersigned further agrees that the Bid Security accompanying the Bid is left in escrow with Clackamas County; that the amount thereof is the measure of liquidated damages which the Owner will sustain by the failure of the Undersigned to execute and deliver the above-named Contract Form, Performance Bond and Payment Bond, each as published, and that if the Undersigned defaults in either executing the Contract Form or providing the Performance Bond and Payment Bond within twenty (20) calendar days after receiving the Contract forms, then the Bid Security shall become the property of the Owner at the Owner's option; but if the Bid is not accepted within thirty (30) calendar days of the time set for the opening of the Bids, or if the Undersigned executes and timely delivers said Contract Form, Performance Bond and Payment Bond, the Bid Security shall be returned.

7. The Undersigned certifies that: (i) This Bid has been arrived at independently and is being submitted without collusion with and without any agreement, understanding, or planned common course of action with any other vendor of materials, supplies, equipment or services described in the

invitation to bid designed to limit independent bidding or competition; and (ii) the contents of the Bid have not been communicated by the Undersigned or its employees or agents to any person not an employee or agent of the Undersigned or its surety on any Bond furnished with the Bid and will not be communicated to such person prior to the official opening of the Bid.

8. The undersigned ☐ **HAS** ☐ **HAS NOT** paid unemployment or income taxes in Oregon within the past 12 months and ☐ **HAS** ☐ **HAS NOT** a business address in Oregon. The undersigned acknowledges that, if the selected bidder, that the undersigned will have to pay all applicable taxes and register to do business in the State of Oregon before executing the Contract Form.

9. The Undersigned agrees, if awarded a contract, to comply with the provisions of ORS 279C.800 through 279C.870 pertaining to the payment of the prevailing rates of wage.

10. Contractor's CCB registration number is _____. As a condition to submitting a bid, a Contractor must be registered with the Oregon Construction Contractors Board in accordance with ORS 701.035 to 701.055, and disclose the registration number. Failure to register and disclose the number will make the bid unresponsive and it will be rejected, unless contrary to federal law.

11. The successful Bidder hereby certifies that all subcontractors who will perform construction work as described in ORS 701.005(2) were registered with the Construction Contractors Board in accordance with ORS 701.035 to 701.055 at the time the subcontractor(s) made a bid to work under the contract.

12. The successful Bidder hereby certifies that, in compliance with the Worker's Compensation Law of the State of Oregon, its Worker's Compensation Insurance provider is _____, Policy No. _____, and that Contractor shall submit Certificates of Insurance as required.

13. Contractor's Key Individuals for this project (supply information as applicable):

Project Executive: _____,	Cell Phone: _____,
Project Manager: _____,	Cell Phone: _____,
Job Superintendent: _____,	Cell Phone: _____,
Project Engineer: _____,	Cell Phone: _____.

14. The Undersigned certifies that it has not discriminated against minority, women, or emerging small businesses in obtaining any subcontracts for this project.

REMINDER: Bidder must submit the below First-Tier Subcontractor Disclosure Form.

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By signature below, Contractor agrees to be bound by this Bid.

NAME OF FIRM _____

ADDRESS _____

TELEPHONE NO _____

EMAIL _____

SIGNATURE 1) _____
Sole Individual

or 2) _____
Partner

or 3) _____
Authorized Officer of Corporation

******* *END OF BID* *******

FIRST-TIER SUBCONTRACTOR DISCLOSURE FORM
PROJECT: #2017-25 CBX Fiber – Lake Oswego School District Expansion-Phase 2

BID OPENING: April 19, 2017, 2:00 PM, Pacific Time

Failure to submit this Form by the disclosure deadline will result in a nonresponsive bid.

INSTRUCTIONS:

This First-Tier Subcontractor Disclosure Form ("Form") must be submitted and received at the location specified in the Notice of Public Improvement Contract Opportunity on the advertised Bid Closing, and within two working hours after the advertised Bid Closing Time.

The Form may be mailed, hand-delivered or emailed to: Procurement@clackamas.us. It is the responsibility of Bidders to submit this Form and any additional sheets with the Project name clearly marked on the envelope or the subject line of the email.

Subcontractor lists may be submitted with the bid in the same envelope or email at the Bid Closing date and time. Subcontractor lists **MUST** be submitted within **two (2) hours** of the Bid Closing date and time.

List below the name of each subcontractor that will be furnishing labor, or labor and materials, for which disclosure is required, the category of work that the subcontractor will be performing, and the dollar value of the subcontract. Enter **"NONE"** if the value of the project bid is less than \$100,000 or there are no subcontractors that need to be disclosed. ATTACH ADDITIONAL SHEETS IF NECESSARY.

	SUBCONTRACTOR NAME	DOLLAR VALUE	CATEGORY OF WORK
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____
6.	_____	_____	_____

The above listed first-tier subcontractor(s) are providing labor, or labor and material, with a Dollar Value equal to or greater than:

- a) 5% of the total Contract Price, but at least \$15,000. If the Dollar Value is less than \$15,000 do not list the subcontractor above; or
- b) \$350,000 regardless of the percentage of the total Contract Price.

Firm Name: _____

Bidder Signature: _____ Phone # _____



CLACKAMAS COUNTY PUBLIC IMPROVEMENT CONTRACT

This Public Improvement Contract for the **#2017-25 CBX Fiber – Lake Oswego School District Expansion-Phase 2** Project (the "Contract"), is made by and between the Clackamas County, a political subdivision of the State of Oregon, hereinafter called "Owner," and Contractor Name (No DBA/ABN), hereinafter called the "Contractor" (collectively the "Parties"), shall become effective on the date this Contract has been signed by all the Parties and all County approvals have been obtained, whichever is later.

WITNESSETH:

1. Contract Price, Contract Documents and Work.

The Contractor, in consideration of the sum of _____ Dollars (\$) (the "Contract Price"), to be paid to the Contractor by Owner in the manner and at the time hereinafter provided, and subject to the terms and conditions provided for in the Instructions to Bidders and other Contract Documents (as defined in the Clackamas County General Conditions for Public Improvement Contracts (1/1/2017)) ("General Conditions") referenced within the Instructions to Bidders, all of which are incorporated herein by reference, hereby agrees to perform all Work described and reasonably inferred from the Contract Documents. The Contract Price is the amount contemplated by the Base Bid adjusted for by any Unit Prices, which are subject to adjustment for actual quantities, as indicated in the accepted Bid.

Also, the following documents are incorporated by reference in this Contract and made a part hereof:

- Notice of Contract Opportunity
- Supplemental Instructions to Bidders
- Public Improvement Contract Form
- Clackamas County General Conditions
- Prevailing Wage Rates
- Project Information, Plans, Specifications and Drawings
- Instructions to Bidders
- Bid Bond
- Performance Bond and Payment Bond
- Supplemental General Conditions
- Payroll and Certified Statement Form

2. Representatives.

Contractor has named _____ as its' Authorized Representative to act on its behalf. Owner designates, or shall designate, its Authorized Representative as indicted below (check one):

☒ Unless otherwise specified in the Contract Documents, the Owner designates Duke Dexter as its Authorized Representative in the administration of this Contract. The above-named individual shall be the initial point of contact for matters related to Contract performance, payment, authorization, and to carry out the responsibilities of the Owner.

☐ Name of Owner's Authorized Representative shall be submitted by Owner in a separate writing.

3. Key Persons.

The Contractor's personnel identified below shall be considered Key Persons and shall not be replaced during the project without the written permission of Owner, which shall not be unreasonably withheld. If the Contractor intends to substitute personnel, a request must be given to Owner at least 30 days prior to the intended time of substitution. When replacements have been approved by Owner, the Contractor shall provide a transition period of at least 10 working days during which the original and replacement personnel shall be working on the project concurrently. Once a replacement for any of these staff members is authorized, further replacement shall not occur without the written permission of Owner. The Contractor's project staff shall consist of the following personnel:

Project Executive: shall be the Contractor's project executive, and will provide oversight and guidance throughout the project term.

Project Manager: shall be the Contractor's project manager and will participate in all meetings throughout the project term.

Job Superintendent: shall be the Contractor's on-site job superintendent throughout the project term.

Project Engineer: shall be the Contractor's project engineer, providing assistance to the project manager, and subcontractor and supplier coordination throughout the project term.

4. Contract Dates.

COMMENCEMENT DATE: Upon Issuance of Notice to Proceed

SUBSTANTIAL COMPLETION DATE: June 01, 2017

FINAL COMPLETION DATE: June 30, 2017

Time is of the essence for this Contract. It is imperative that the Work in this Contract reach Substantial Completion and Final Completion by the above specified dates.

5. Insurance Certificates.

In accordance with Section G.3.5 of the General Conditions, Contractor shall furnish proof of the required insurance naming Clackamas County as an additional insured. Insurance certificates may be returned with the signed Contract or may emailed to Procurement@clackamas.us.

6. Tax Compliance.

Contractor must, throughout the duration of this Contract and any extensions, comply with all tax laws of this state and all applicable tax laws of any political subdivision of this state. Any violation of this section shall constitute a material breach of this Contract. Further, any violation of Contractor's warranty in this Contract that Contractor has complied with the tax laws of this state and the applicable tax laws of any political subdivision of this state also shall constitute a material breach of this Contract. Any violation shall entitle County to terminate this Contract, to pursue and recover any and all damages that arise from the breach and the termination of this Contract, and to pursue any or all of the remedies available under this Contract, at law, or in equity, including but not limited to: (A) Termination of this Contract, in whole or in part; (B) Exercise of the right of setoff, and withholding of amounts otherwise due and owing to Contractor, in an amount equal to County's setoff right, without penalty; and (C) Initiation of an action or proceeding for damages, specific performance, declaratory or injunctive relief. County shall be entitled to recover any and all damages suffered as the result of Contractor's breach of this Contract, including but not limited to direct, indirect, incidental and consequential damages, costs of cure, and costs incurred in securing replacement performance. These remedies are cumulative to the extent the remedies are not inconsistent, and County may pursue any remedy or remedies singly, collectively, successively, or in any order whatsoever.

The Contractor represents and warrants that, for a period of no fewer than six calendar years preceding the effective date of this Contract, has faithfully complied with: (A) All tax laws of this state, including but not limited to ORS 305.620 and ORS chapters 316, 317, and 318; (B) Any tax provisions imposed by a political subdivision of this state that applied to Contractor, to Contractor's property, operations, receipts, or income, or to Contractor's performance of or compensation for any work performed by Contractor; (C) Any tax provisions imposed by a political subdivision of this state that applied to Contractor, or to goods, services, or property, whether tangible or intangible, provided by Contractor; and (D) Any rules, regulations, charter provisions, or ordinances that implemented or enforced any of the foregoing tax laws or provisions.

7. Confidential Information.

Contractor acknowledges that it and its employees or agents may, in the course of performing their responsibilities under this Contract, be exposed to or acquire information that is confidential to Owner or the State of Oregon. Any and all information of any form obtained by Contractor or its employees or agents in the performance of this Contract shall be deemed confidential information of Owner and of State ("Confidential Information"). Contractor agrees to hold Confidential Information in strict confidence, using at least the same degree of care that Contractor uses in maintaining the confidentiality of its own confidential information, and not to copy, reproduce, sell, assign, license, market, transfer or otherwise dispose of, give, or disclose Confidential Information to third parties or use Confidential Information for any purpose unless specifically authorized in writing under this Contract.

8. Counterparts.

This Contract may be executed in several counterparts, all of which when taken together shall constitute an agreement binding on all Parties, notwithstanding that all Parties are not signatories to the same counterpart. Each copy of the Contract so executed shall constitute an original.

9. Integration.

All provisions of state law required to be part of this Contract, whether listed in the General or Special Conditions or otherwise, are hereby integrated and adopted herein. Contractor acknowledges the obligations thereunder and that failure to comply with such terms is a material breach of this Contract.

The Contract Documents constitute the entire agreement between the parties. There are no other understandings, agreements or representations, oral or written, not specified herein regarding this Contract. Contractor, by the signature below of its authorized representative, hereby acknowledges that it has read this Contract, understands it, and agrees to be bound by its terms and conditions.

In witness whereof, Clackamas County executes this Contract and the Contractor does execute the same as of the day and year first above written.

Contractor DATA:

(Insert Contractor Name & Address)

Contractor CCB # Expiration Date:

Oregon Business Registry #

Entity Type:

State of Formation:

Payment information will be reported to the IRS under the name and taxpayer ID# provided by the Contractor. Information must be provided prior to contract approval. Information not matching IRS records could subject Contractor to 28 percent backup withholding.

Contractor Name (No DBA/ABN)

Clackamas County Board of County Commissioners

Signature

Date

Chair

Date

Name / Title Printed

Recording Secretary

APPROVED AS TO FORM

County Counsel

Date



CLACKAMAS COUNTY GENERAL CONDITIONS FOR PUBLIC IMPROVEMENT CONTRACTS January 1, 2017

INSTRUCTIONS: The attached **Clackamas County General Conditions for Public Improvement Contracts ("County General Conditions")** apply to all designated Public Improvement contracts. Changes to the County General Conditions (including any additions, deletions or substitutions) should only be made by attaching Public Improvement Supplemental General Conditions. The text of these County General Conditions should not otherwise be altered.

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**CLACKAMAS COUNTY GENERAL CONDITIONS
FOR PUBLIC IMPROVEMENT CONTRACTS
("County General Conditions")**

**SECTION A
GENERAL PROVISIONS**

A.1 DEFINITION OF TERMS

In the Contract Documents the following terms shall be as defined below:

APPLICABLE LAWS, means federal, state and local laws, codes, rules, regulations and ordinances applicable to the Work and to the Contract.

ARCHITECT/ENGINEER, means the Person appointed by the Owner to make drawings and specifications and, to provide contract administration of the Work contemplated by the Contract to the extent provided herein or by supplemental instruction of Owner (under which Owner may delegate responsibilities to the Architect/Engineer), in accordance with ORS Chapter 671 (Architects) or ORS Chapter 672 (Engineers) and administrative rules adopted thereunder.

CHANGE ORDER, means a written order which, when fully executed by the Parties to this Contract, constitutes a change to the Contract Documents. Change Orders shall be issued in accordance with the changes provisions in Section D and, if applicable, establish a Contract Price or Contract Time adjustment. A Change Order shall not be effective until executed as a Change Order.

CLAIM, means a demand by Contractor pursuant to Section D.3 for review of the denial of Contractor's initial request for an adjustment of Contract terms, payment of money, extension of Contract Time or other relief, submitted in accordance with the requirements and within the time limits established for review of Claims in these County General Conditions.

CONSTRUCTION CHANGE DIRECTIVE, means a written order by the Owner to the Contractor requiring a change in the Work within the general scope of the Contract Documents, issued under the changes provisions of Section D.

CONTRACT, means the written agreement between the Owner and the Contractor comprised of the Contract Documents which describe the Work to be done and the obligations between the parties.

CONTRACT DOCUMENTS, means the Public Improvement Contract, County General Conditions, Supplemental General Conditions if any, Plans, Specifications, Construction Change Directives, the accepted Offer, Solicitation Document and addenda thereto, Instructions to Offerors, and Supplemental Instructions to Offerors.

CONTRACT PERIOD, as set forth in the Contract Documents, means the total period of time beginning with the full execution of a Contract and, if applicable, the issuance of a Notice to Proceed and concluding upon Final Completion.

CONTRACT PRICE, means the total price reflected in the Contract.

CONTRACT TIME, means any incremental period of time allowed under the Contract to complete any portion of the Work as reflected in the project schedule.

CONTRACTOR, means the Person awarded the Contract for the Work contemplated.

DAYS, are calendar days, including weekdays, weekends and holidays, unless otherwise specified.

DIRECT COSTS, means, unless otherwise provided in the Contract Documents: the cost of materials, including sales tax and the cost of

delivery; cost of labor which shall only include the applicable prevailing wage and fringe benefit (if applicable, and if paid to or on behalf of the employee) rate plus a maximum of a ten percent (10%) markup on the prevailing wage (but not the fringe benefit) to cover Contractor's labor burden including but not limited to social security, Medicare, unemployment insurance, workers' compensation insurance; substantiated project cost increases for specific insurance (including, without limitation, Builder's Risk Insurance and Builder's Risk Installation Floater) or bond premiums; rental cost of equipment, and machinery required for execution of the Work; and the additional costs of field personnel directly attributable to the Work; travel expense reimbursement only if specifically authorized and only to the extent allowable under the County Contractor Travel Reimbursement Policy, hereby incorporated by reference.

FINAL COMPLETION, means the final completion of all requirements under the Contract, including Contract Closeout as described in Section K but excluding Warranty Work as described in Section I.2, and the final payment and release of all retainage, if any, released.

FORCE MAJEURE, means an act, event or occurrence caused by fire, riot, war, acts of God, nature, sovereign, or public enemy, strikes, freight embargoes or any other act, event or occurrence that is beyond the control of the party to this Contract who is asserting Force Majeure.

NOTICE TO PROCEED, means the official written notice from the Owner stating that the Contractor is to proceed with the Work defined in the Contract Documents. Notwithstanding the Notice to Proceed, Contractor shall not be authorized to proceed with the Work until all initial Contract requirements, including the Contract, performance bond and payment bond, and certificates of insurance, have been fully executed and submitted to Owner in a suitable form.

OFFER, means a bid in connection with Instructions to Bidders or a proposal in connection with a Request for Proposals, or Solicitation Document. May also be referenced as "Bid", "Quote", or "Proposal" based on the type of Solicitation Document

OFFEROR, means a bidder in connection with Instructions to Bidders or a proposer in connection with a Request for Proposals, or Solicitation Document. May also be referenced as "Bidder", "Quoter" or "Proposer" based on the type of Solicitation Document.

OVERHEAD, means those items which may be included in the Contractor's markup (general and administrative expense and profit) and that shall not be charged as Direct Cost of the Work, including without limitation such Overhead expenses as wages or salary of personnel above the level of foreman (i.e., superintendents and project managers), labor rates and fringe benefits above the applicable prevailing wage and fringe benefit (if applicable, and if paid to or on behalf of the employee), Contractor's labor burden for fringe benefit if paid to the employee, expenses of Contractor's offices and supplies at the job site (e.g. job trailer) and at Contractor's principal place of business and including expenses of personnel staffing the job site office and Contractor's principal place of business, and Commercial General Liability Insurance and Automobile Liability Insurance.

OWNER, means, Clackamas County or any component unit thereof including Clackamas County Development Agency, Clackamas County Service District No. 1, Surface Water Management Agency of Clackamas County, Tri-City Service District, North Clackamas Parks and Recreation District, Clackamas County Extension & 4-H Service District, and Library Service District of Clackamas County. Owner may elect, by written notice to Contractor, to delegate certain duties to more than one party, including without limitation, to an Architect/Engineer. However, nothing in these County General Conditions is intended to abrogate the separate design professional responsibilities of Architects under ORS Chapter 671 or of Engineers under ORS Chapter 672.

PERSON, means a natural person or entity doing business as a sole proprietorship, a partnership, a joint venture, a corporation, a limited

liability company or partnership, or any other entity possessing the legal capacity to contract.

PLANS, means the drawings which show the location, type, dimensions, and details of the Work to be done under the Contract.

PUNCH LIST, means the list of Work yet to be completed or deficiencies which need to be corrected in order to achieve Final Completion of the Contract.

RECORD DOCUMENT, means the as-built Plans, Specifications, testing and inspection records, product data, samples, manufacturer and distributor/supplier warranties evidencing transfer of ownership to Owner, operational and maintenance manuals, shop drawings, Construction Change Directives, correspondence, certificate(s) of occupancy, and other documents listed in Subsection B.9.1 of these County General Conditions, recording all Services performed.

SOLICITATION DOCUMENT, means Instructions to Bidders or Offerors or a Request for Proposal or a Request for Quotes or any other written document issued by Owner that outlines the required Specifications necessary to submit a Bid, Proposal, or other response.

SPECIFICATION, means any description of the physical or functional characteristics of the Work, or of the nature of a supply, service or construction item. Specifications may include a description of any requirement for inspecting, testing or preparing a supply, service or construction item for delivery and the quantities or qualities of materials to be furnished under the Contract. Specifications generally will state the results or products to be obtained and may, on occasion, describe the method and manner of doing the Work to be performed. Specifications may be incorporated by reference and/or may be attached to the Contract.

SUBCONTRACTOR, means a Person having a direct contract with the Contractor, or another Subcontractor of any tier, to perform one or more items of the Work.

SUBSTANTIAL COMPLETION, means the date when the Owner accepts in writing the construction, alteration or repair of the improvement to real property constituting the Work or any designated portion thereof as having reached that state of completion when it may be used or occupied for its intended purpose. Substantial Completion of facilities with operating systems occurs only after thirty (30) continuous Days of successful, trouble-free operation of the operating systems as provided in Section K.3.2.

SUBSTITUTIONS, means items that in function, performance, reliability, quality, and general configuration are the same or better than the product(s) specified. Substitutions also means the performance of the Work by a labor force other than what is submitted in the Offer. Approval of any substitute item shall be solely determined by the Owner. The decision of the Owner is final.

PUBLIC IMPROVEMENT SUPPLEMENTAL GENERAL CONDITIONS, means those conditions that remove from, add to, or modify these County General Conditions. Public Improvement Supplemental General Conditions may be included in the Solicitation Document or may be a separate attachment to the Contract.

WORK, means the furnishing of all materials, equipment, labor, transportation, services and incidentals necessary to successfully complete any individual item or the entire Contract and the carrying out of duties and obligations imposed by the Contract Documents.

A.2 SCOPE OF WORK

The Work contemplated under this Contract includes all labor, materials, transportation, equipment and services for, and incidental to, the completion of all construction work in connection with the project described in the Contract Documents. The Contractor shall perform all

Work necessary so that the project can be legally occupied and fully used for the intended use as set forth in the Contract Documents.

A.3 INTERPRETATION OF CONTRACT DOCUMENTS

A.3.1 Unless otherwise specifically defined in the Contract Documents, words which have well-known technical meanings or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings. Contract Documents are intended to be complementary. Whatever is called for in one, is interpreted to be called for in all. However, in the event of conflicts or discrepancies among the Contract Documents, interpretations will be based on the following descending order of precedence:

- (a) Change Orders and Construction Change Directives, with those of later date having precedence over those of an earlier date;
- (b) The Supplemental General Conditions;
- (c) County General Conditions;
- (d) The Public Improvement Contract;
- (e) Construction Change Directive;
- (f) Division One (General Requirements) of the Specifications;
- (g) Detailed Schedules of finishes, equipment and other items included in the Specifications;
- (h) Plans and Specifications (other than Division One and the Detailed Schedules to the Specifications);
- (i) Large-scale drawings on Plans;
- (j) Small-scale drawings on Plans;
- (k) Dimension numbers written on Plans which shall prevail and take precedence over dimensions scaled from Plans;
- (l) The Solicitation Document, and any addenda thereto.

A.3.2 In the case of an inconsistency between Plans and Specifications or within either document not clarified by addendum, the better quality or greater quantity of Work shall be provided in accordance with the Owner's interpretation in writing.

A.3.3 If the Contractor finds discrepancies in, or omissions from the Contract Documents, or if the Contractor is in doubt as to their meaning, the Contractor shall at once notify the Owner. Matters concerning and interpretation of requirements of the Contract Documents will be decided by the Owner, who may delegate that duty in some instances to the Architect/Engineer. Responses to Contractor's requests for interpretation of Contract Documents will be made in writing by Owner (or the Architect/Engineer) within any time limits agreed upon or otherwise with reasonable promptness. Interpretations and decisions of the Owner (or Architect/Engineer) will be consistent with the intent of and reasonably inferable from the Contract Documents. Contractor shall not proceed without direction in writing from the Owner (or Architect/Engineer).

A.3.4 References to standard specifications, manuals, codes of any technical society, organization or association, to the laws or regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest standard specification, manual, code, laws or regulations in effect in the jurisdiction where the project is occurring on the first published date of the Solicitation Document, except as may be otherwise specifically stated.

A.4 EXAMINATION OF PLANS, SPECIFICATIONS, AND SITE

A.4.1 It is understood that the Contractor, before submitting an Offer, has made a careful examination of the Contract Documents; has become fully informed as to the quality and quantity of materials and the character of the Work required; and has made a careful examination of the location and conditions of the Work and the sources of supply for materials. The Owner will in no case be responsible for any loss or for any unanticipated costs that may be

suffered by the Contractor as a result of the Contractor's failure to acquire full information in advance in regard to all conditions pertaining to the Work. No oral agreement or conversation with any officer, agent, or personnel of the Owner, or with the Architect/Engineer either before or after the execution of this Contract, shall affect or modify any of the terms or obligations herein contained. Contractor shall at all times be responsible for all utility locates regardless of the ownership of such utility infrastructure or service.

A.4.2 Should the Plans or Specifications fail to particularly describe the materials, kind of goods, or details of construction of any aspect of the Work, Contractor shall have the duty to make inquiry of the Owner and Architect/Engineer as to what is required prior to performance of the Work. Absent Specifications to the contrary, the materials or processes that would normally be used to produce first quality finished Work shall be considered a part of the Contract requirements.

A.4.3 Any design errors or omissions noted by the Contractor shall be reported promptly to the Owner, including without limitation, any nonconformity with Applicable Laws.

A.4.4 If the Contractor believes that adjustments to cost or Contract Time is involved because of clarifications or instructions issued by the Owner (or Architect/Engineer) in response to the Contractor's notices or requests for information, the Contractor must submit a written request to the Owner, setting forth the nature and specific extent of the request, including all time and cost impacts against the Contract as soon as possible, but no later than thirty (30) Days after receipt by Contractor of the clarifications or instructions issued. If the Owner denies Contractor's request for additional compensation, additional Contract Time, or other relief that Contractor believes results from the clarifications or instructions, the Contractor may proceed to file a Claim under Section D.3, Claims Review Process. If the Contractor fails to perform the obligations of Sections A.4.1 to A.4.3, the Contractor shall pay such costs and damages to the Owner as would have been avoided if the Contractor had performed such obligations.

A.5 INDEPENDENT CONTRACTOR STATUS

The service or services to be performed under this Contract are those of an independent contractor as defined in ORS 670.600. Contractor represents and warrants that it is not an officer, employee or agent of the Owner as those terms are used in ORS 30.265.

A.6 RETIREMENT SYSTEM STATUS AND TAXES

Contractor represents and warrants that it is not a contributing member of the Public Employees' Retirement System and will be responsible for any federal or state taxes applicable to payment received under this Contract. Contractor will not be eligible for any benefits from these Contract payments of federal Social Security, employment insurance, workers' compensation or the Public Employees' Retirement System, except as a self-employed individual. Unless the Contractor is subject to backup withholding, Owner will not withhold from such payments any amount(s) to cover Contractor's federal or state tax obligations.

A.7 GOVERNMENT EMPLOYMENT STATUS

A.7.1 If this payment is to be charged against federal funds, Contractor represents and warrants that it is not currently employed by the Federal Government. This does not preclude the Contractor from holding another contract with the Federal Government.

A.7.2 Contractor represents and warrants that Contractor is not an employee of the County for purposes of performing Work under this Contract.

SECTION B ADMINISTRATION OF THE CONTRACT

B.1 OWNER'S ADMINISTRATION OF THE CONTRACT

B.1.1 The Owner shall administer the Contract as described in the Contract Documents (1) during construction (2) until final payment is due and (3) during the one-year period for correction of Work. The Owner will act as provided in the Contract Documents, unless modified in writing in accordance with other provisions of the Contract. In performing these tasks, the Owner may rely on the Architect/Engineer or other consultants to perform some or all of these tasks.

B.1.2 The Owner will visit the site at intervals appropriate to the stage of the Contractor's operations (1) to become generally familiar with and to keep the Owner informed about the progress and quality of the portion of the Work completed, (2) to endeavor to guard the Owner against defects and deficiencies in the Work, and (3) to determine in general if Work is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. The Owner will not make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Owner will neither have control over or charge of, nor be responsible for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work.

B.1.3 Except as otherwise provided in the Contract Documents or when direct communications have been specifically authorized, the Owner and Contractor shall communicate with each other about matters arising out of or relating to the Contract. Communications by and with the Architect/Engineer's consultants shall be through the Architect/Engineer. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with separate contractors shall be through the Owner.

B.1.4 Based upon the Architect/Engineer's evaluations of the Contractor's Application for Payment, or unless otherwise stipulated by the Owner, the Architect/Engineer will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

B.2 CONTRACTOR'S MEANS AND METHODS; MITIGATION OF IMPACTS

B.2.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless the Contract Documents give other specific instructions concerning these matters. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences or procedures, the Contractor shall evaluate the jobsite safety thereof and, except as stated below, shall be fully and solely responsible for the jobsite safety of such means, methods, techniques, sequences or procedures.

B.2.2 The Contractor is responsible to protect and maintain the Work during the course of construction and to mitigate any adverse impacts to the project, including those caused by authorized changes, which may affect cost, schedule, or quality.

B.2.3 The Contractor is responsible for the actions of all its personnel, laborers, suppliers, and Subcontractors on the project. The Contractor shall enforce strict discipline and good order among Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of persons who are unfit or unskilled for the tasks assigned to them.

B.3 MATERIALS AND WORKMANSHIP

- B.3.1 The intent of the Contract Documents is to provide for the construction and completion in every detail of the Work described. All Work shall be performed in a professional manner and unless the means or methods of performing a task are specified elsewhere in the Contract Documents, Contractor shall employ methods that are generally accepted and used by the industry, in accordance with industry standards.
- B.3.2 The Contractor is responsible to perform the Work as required by the Contract Documents. Defective Work shall be corrected at the Contractor's expense.
- B.3.3 Work done and materials furnished may be subject to inspection and/or observation and testing by the Owner to determine if they conform to the Contract Documents. Inspection of the Work by the Owner does not relieve the Contractor of responsibility for the Work in accordance with the Contract Documents.
- B.3.4 Contractor shall furnish adequate facilities, as required, for the Owner to have safe access to the Work including without limitation walkways, railings, ladders, tunnels, and platforms. Producers, suppliers, and fabricators shall also provide proper facilities and access to their facilities.
- B.3.5 The Contractor shall furnish Samples of materials for testing by the Owner and include the cost of the Samples in the Contract Price.

B.4 PERMITS

Contractor shall obtain and pay for all necessary permits, licenses and fees, except for those specifically excluded in the Public Improvement Supplemental General Conditions, for the construction of the Work, for temporary obstructions, enclosures, opening of streets for pipes, walls, utilities, environmental Work, etc., as required for the project. Contractor shall be responsible for all violations of the law, in connection with the construction or caused by obstructing streets, sidewalks or otherwise. Contractor shall give all requisite notices to public authorities.

B.5 COMPLIANCE WITH GOVERNMENT REGULATIONS

- B.5.1 Contractor shall comply with Applicable Laws pertaining to the Work and the Contract. Failure to comply with such requirements shall constitute a breach of Contract and shall be grounds for Contract termination. Without limiting the generality of the foregoing, Contractor expressly agrees to comply with the following, as applicable and as may be amended from time to time: (i) Title VI and VII of Civil Rights Act of 1964, as amended; (ii) Section 503 and 504 of the Rehabilitation Act of 1973, as amended; (iii) the Health Insurance Portability and Accountability Act of 1996; (iv) the Americans with Disabilities Act of 1990, as amended; (v) ORS Chapter 659A; as amended; (vi) all regulations and administrative rules established pursuant to the foregoing laws; and (vii) all other applicable requirements of federal and state civil rights and rehabilitation statutes, rules and regulations.
- B.5.2 Contractor shall comply with all applicable requirements of federal and state civil rights and rehabilitation statutes, rules and regulations, and
- (a) Contractor shall not discriminate against Disadvantaged, Minority, Women or Emerging Small Business enterprises, as those terms are defined in ORS 200.005, or a business enterprise that is owned or controlled by or that employs a disabled veteran, as that term is defined in ORS 408.225, in the awarding of subcontracts.

- (b) Contractor shall maintain, in current and valid form, all licenses and certificates required by Applicable Laws or this Contract when performing the Work.

- B.5.3 Unless contrary to federal law, Contractor shall certify that it shall not accept a bid from Subcontractors to perform Work as described in ORS 701.005 under this Contract unless such Subcontractors are registered with the Construction Contractors Board in accordance with ORS 701.035 to 701.055 at the time they submit their bids to the Contractor.
- B.5.4 Unless contrary to federal law, Contractor shall certify that each landscape contractor, as defined in ORS 671.520(2), performing Work under this Contract holds a valid landscape contractor's license issued pursuant to ORS 671.560.
- B.5.5 The following notice is applicable to Contractors who perform excavation Work. 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 at (877) 668-4001.
- B.5.6 Failure to comply with any or all of the requirements of B.5.1 through B.5.5 shall be a breach of Contract and constitute grounds for Contract termination. Damages or costs resulting from such noncompliance shall be the responsibility of Contractor.

B.6 SUPERINTENDENCE

Contractor shall keep on the site, during the progress of the Work, a competent superintendent and any necessary assistants who shall be satisfactory to the Owner and who shall represent the Contractor on the site. Directions given to the superintendent by the Owner shall be confirmed in writing to the Contractor.

B.7 INSPECTION

- B.7.1 Owner shall have access to the Work at all times.
- B.7.2 Inspection of the Work will be made by the Owner at its discretion. The Owner will have authority to reject Work that does not conform to the Contract Documents. Any Work found to be not in conformance with the Contract Documents, in the discretion of the Owner, shall be removed and replaced at the Contractor's expense.
- B.7.3 Contractor shall make or obtain at the appropriate time all tests, inspections and approvals of portions of the Work required by the Contract Documents or by Applicable Laws or orders of public authorities having jurisdiction. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work. The Contractor shall give the Owner timely notice of when and where tests and inspections are to be made so that the Owner may be present for such procedures. Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Owner.
- B.7.4 As required by the Contract Documents, Work done or material used without required inspection or testing and/or without providing timely notice to the Owner may be ordered removed at the Contractor's expense.
- B.7.5 If directed to do so any time before the Work is accepted, the Contractor shall uncover portions of the completed Work for inspection. After inspection, the Contractor shall restore such

portions of Work to the standard required by the Contract. If the Work uncovered is unacceptable or was done without required testing or inspection or sufficient notice to the Owner, the uncovering and restoration shall be done at the Contractor's expense. If the Work uncovered is acceptable and was done with sufficient notice to the Owner, the uncovering and restoration will be paid for pursuant to a Change Order.

- B.7.6 If any testing or inspection reveals failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Owner's and Architect/Engineer's services and expenses, shall be at the Contractor's expense.
- B.7.7 When the United States government participates in the cost of the Work, or the Owner has an agreement with other public or private organizations, or if any portion of the Work is being performed for a third party or in close proximity to third party facilities, representatives of these organizations shall have the right to inspect the Work affecting their interests or property. Their right to inspect shall not make them a party to the Contract and shall not interfere with the rights of the parties of the Contract. Instructions or orders of such parties shall be transmitted to the Contractor, through the Owner.

B.8 SEVERABILITY

If any provision of this Contract is declared by a court to be unenforceable, illegal, or in conflict with any law, the validity of the remaining terms and provisions shall not be affected and the rights and obligations of the parties shall be construed and enforced as if the Contract did not contain the particular provision held to be invalid.

B.9 ACCESS TO RECORDS

- B.9.1 Contractor shall keep, at all times on the Work site, one record copy of the complete Contract Documents, including the Plans, Specifications, Construction Change Directives and addenda, in good order and marked currently to record field changes and selections made during construction, and one record copy of Shop Drawings, Product Data, Samples and similar submittals, and shall at all times give the Owner access thereto.
- B.9.2 Contractor shall retain and the Owner and its duly authorized representatives shall have access, for a period not less than ten (10) years, to all Record Documents, financial and accounting records, and other books, documents, papers and records of Contractor which are pertinent to the Contract, including records pertaining to Overhead and indirect costs, for the purpose of making audit, examination, excerpts and transcripts. If for any reason, any part of the Work or this Contract shall be subject to litigation, Contractor shall retain all such records until all litigation is resolved and Contractor shall continue to provide Owner and/or its agents with full access to such records until such time as all litigation is complete and all periods for appeal have expired and full and final satisfaction of any judgment, order or decree is recorded and Owner receives a record copy of documentation from Contractor.

B.10 WAIVER

Failure of the Owner to enforce any provision of this Contract shall not constitute a waiver or relinquishment by the Owner of the right to such performance in the future nor of the right to enforce any other provision of this Contract.

B.11 SUBCONTRACTS AND ASSIGNMENT

- B.11.1 Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound by the terms and conditions of these County General Conditions, and to

assume toward the Contractor all of the obligations and responsibilities which the Contractor assumes toward the Owner thereunder, unless (1) the same are clearly inapplicable to the subcontract at issue because of legal requirements or industry practices, or (2) specific exceptions are requested by Contractor and approved in writing by Owner. Where appropriate, Contractor shall require each Subcontractor to enter into similar agreements with sub-subcontractors at any level.

- B.11.2 At Owner's request, Contractor shall submit to Owner prior to their execution either Contractor's form of subcontract, or the subcontract to be executed with any particular Subcontractor. If Owner disapproves such form, Contractor shall not execute the form until the matters disapproved are resolved to Owner's satisfaction. Owner's review, comment upon or approval of any such form shall not relieve Contractor of its obligations under this Agreement or be deemed a waiver of such obligations of Contractor.
- B.11.3 Contractor shall not assign, sell, or transfer its rights, or delegate its responsibilities under this Contract, in whole or in part, without the prior written approval of the Owner. No such written approval shall relieve Contractor of any obligations of this Contract, and any transferee shall be considered the agent of the Contractor and bound to perform in accordance with the Contract Documents. Contractor shall remain liable as between the original parties to the Contract as if no assignment had occurred.

B.12 SUCCESSORS IN INTEREST

The provisions of this Contract shall be binding upon and shall accrue to the benefit of the parties to the Contract and their respective permitted successors and assigns.

B.13 OWNER'S RIGHT TO DO WORK

Owner reserves the right to perform other or additional work at or near the project site with other forces than those of the Contractor. If such work takes place within or next to the project site, Contractor shall coordinate work with the other contractors or forces, cooperate with all other contractors or forces, carry out the Work in a way that will minimize interference and delay for all forces involved, place and dispose of materials being used so as not to interfere with the operations of another, and join the Work with the work of the others in an acceptable manner and perform it in proper sequence to that of the others. The Owner will resolve any disagreements that may arise between or among Contractor and the other contractors over the method or order of doing all work (including the Work). In case of unavoidable interference, the Owner will establish work priority (including the Work) which generally will be in the sequence that the contracts were awarded.

B.14 OTHER CONTRACTS

In all cases and at any time, the Owner has the right to execute other contracts related to or unrelated to the Work of this Contract. The Contractor of this Contract shall fully cooperate with any and all other contractors without additional cost to the Owner in the manner described in section B.13.

B.15 GOVERNING LAW

This Contract shall be governed by and construed in accordance with the laws of the State of Oregon without regard to principles of conflict of laws.

B.16 LITIGATION

Any Claim between Owner and Contractor that arises from or relates to this Contract and that is not resolved through the Claims Review Process in Section D.3 shall be brought and conducted solely and exclusively within the Circuit Court of Clackamas County for the State of Oregon;

provided, however, if a Claim must be brought in a federal forum, then it shall be brought and conducted solely and exclusively within the United States District Court for the District of Oregon. In no event shall this section be construed as a waiver by the County on any form of defense or immunity, whether sovereign immunity, governmental immunity, immunity based on the Eleventh Amendment to the Constitution of the United States or otherwise, from any claim or from the jurisdiction of any court. CONTRACTOR, BY EXECUTION OF THIS CONTRACT, HEREBY CONSENTS TO THE IN PERSONAM JURISDICTION OF THE COURTS REFERENCED IN THIS SECTION B.16.

B.17 ALLOWANCES

B.17.1 The Contractor shall include in the Contract Price all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct.

B.17.2 Unless otherwise provided in the Contract Documents:

- (a) when finally reconciled, allowances shall cover the cost of the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- (b) Contractor's costs for unloading and handling at the site, labor, installation costs, Overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the Contract Price but not in the allowances;
- (c) whenever costs are more than or less than allowances, the Contract Price shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (i) the difference between actual costs and the allowances under Section B.17.2(a) and (2) changes in Contractor's costs under Section B.17.2(b).
- (d) Unless Owner requests otherwise, Contractor shall provide to Owner a proposed fixed price for any allowance work prior to its performance.

B.18 SUBMITTALS, SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

B.18.1 The Contractor shall prepare and keep current, for the Architect's/Engineer's approval (or for the approval of Owner if approval authority has not been delegated to the Architect/Engineer), a schedule and list of submittals which is coordinated with the Contractor's construction schedule and allows the Architect/Engineer reasonable time to review submittals. Owner reserves the right to finally approve the schedule and list of submittals. Submittals include, without limitation, Shop Drawings, Product Data, and Samples which are described below:

- (a) Shop Drawings are drawings, diagrams, schedules and other data specially prepared for the Work by the Contractor or a Subcontractor (including any subcontractor), manufacturer, supplier or distributor to illustrate some portion of the Work.
- (b) Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.
- (c) Samples are physical examples which illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

B.18.2 Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents. The purpose of their submittal is to

demonstrate for those portions of the Work for which submittals are required by the Contract Documents the way by which the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents. Review of submittals by the Architect/Engineer is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, or for approval of safety precautions or, unless otherwise specifically stated by the Architect/Engineer, of any construction means, methods, techniques, sequences or procedures, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect/Engineer's review of the Contractor's submittals shall not relieve the Contractor of its obligations under the Contract Documents. The Architect/Engineer's approval of a specific item shall not indicate approval of an assembly of which the item is a component. Informational submittals upon which the Architect/Engineer is not expected to take responsive action may be so identified in the Contract Documents. Submittals which are not required by the Contract Documents may be returned by the Architect/Engineer without action.

B.18.3 The Contractor shall review for compliance with the Contract Documents, approve and submit to the Architect/Engineer Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors. Submittals which are not marked as reviewed for compliance with the Contract Documents and approved by the Contractor may be returned by the Architect/Engineer without action.

B.18.4 By approving and submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents that the Contractor has determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

B.18.5 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples or similar submittals until the respective submittal has been approved by the Architect/Engineer.

B.18.6 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from requirements of the Contract Documents by the Architect/Engineer's review or approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Architect/Engineer in writing of such deviation at the time of submittal and (i) the Architect/Engineer has given written approval to the specific deviation as a minor change in the Work, or (ii) a Change Order or Construction Change Directive has been executed by Owner authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Architect/Engineer's review or approval thereof.

B.18.7 In the event that Owner elects not to have the obligations and duties described under this Section B.18 performed by the Architect/Engineer, or in the event no Architect/Engineer is employed by Owner on the project, all obligations and duties assigned to the Architect/Engineer hereunder shall be performed by the Owner.

B.19 SUBSTITUTIONS

The Contractor may make Substitutions only with the consent of the Owner, after evaluation by the Owner and only in accordance with a Change Order or Construction Change Directive. Substitutions shall be subject to the requirements of the bid documents. By making requests for Substitutions, the Contractor represents that the Contractor has personally investigated the proposed substitute product; represents that the Contractor will provide the same warranty for the Substitution that the Contractor would for the product originally specified unless approved otherwise; certifies that the cost data presented is complete and includes all related costs under this Contract including redesign costs, and waives all claims for additional costs related to the Substitution which subsequently become apparent; and will coordinate the installation of the accepted Substitution, making such changes as may be required for the Work to be completed in all respects.

B.20 USE OF PLANS AND SPECIFICATIONS

Plans, Specifications and related Contract Documents furnished to Contractor by Owner or Owner's Architect/Engineer shall be used solely for the performance of the Work under this Contract. Contractor and its Subcontractors and suppliers are authorized to use and reproduce applicable portions of such documents appropriate to the execution of the Work, but shall not claim any ownership or other interest in them beyond the scope of this Contract, and no such interest shall attach. Unless otherwise indicated, all common law, statutory and other reserved rights, in addition to copyrights, are retained by Owner.

B.21 FUNDS AVAILABLE AND AUTHORIZED

If Owner fails to receive funding, appropriations, allocations or other expenditure authority as contemplated by Owner's budget and Owner determines, in its assessment and ranking of the policy objectives explicit or implicit in Owner's budget, Owner may determine it is necessary to and may terminate the Public Improvement Contract.

B.22 NO THIRD PARTY BENEFICIARIES

Owner and Contractor are the only parties to this Contract and are the only parties entitled to enforce its terms. Nothing in this Contract gives, is intended to give, or shall be construed to give or provide any benefit or right, whether directly, indirectly, or otherwise, to third persons unless such third persons are individually identified by name herein and expressly described as intended beneficiaries of the terms of this Contract.

SECTION C **WAGES AND LABOR**

C.1 MINIMUM WAGE RATES ON PUBLIC WORKS

Contractor shall comply fully with the provisions of ORS 279C.800 through 279C.870. Documents establishing those conditions, as determined by the Commissioner of the Bureau of Labor and Industries (BOLI), are included as attachments to or are incorporated by reference in the Contract Documents. Pursuant to ORS 279C.830(1)(d), Contractor shall pay workers at not less than the specified minimum hourly rate of wage, and shall include that requirement in all subcontracts. If the Work is subject to both the state prevailing wage rate law and the federal Davis-Bacon Act, Contractor shall pay the higher of the applicable state or federal prevailing rate of wage. Contractor shall provide written notice to all workers of the number of hours per day and days per week such workers may be required to work.

C.2 PAYROLL CERTIFICATION AND FEE REQUIREMENTS

C.2.1 In accordance with ORS 279C.845, the Contractor and every Subcontractor shall submit written certified statements to the Owner on the form prescribed by the Commissioner of the Bureau of Labor and Industries, certifying the hourly rate of

wage paid each worker which the Contractor or the Subcontractor has employed on the project and further certifying that no worker employed on the project has been paid less than the prevailing rate of wage or less than the minimum hourly rate of wage specified in the Contract, which certificate and statement shall be verified by the oath of the Contractor or the Subcontractor that the Contractor or Subcontractor has read the certified statement, that the Contractor or Subcontractor knows the contents of the certified statement, and, that to the Contractor's or Subcontractor's best knowledge and belief, the certified statement is true. The certified statements shall set out accurately and completely the payroll records for the prior week, including the name and address of each worker, the worker's correct classification, rate of pay, daily and weekly number of hours worked, deductions made, and actual wages paid. Certified statements for each week during which the Contractor or Subcontractor has employed a worker on the project shall be submitted once a month, by the fifth business day of the following month. The Contractor and Subcontractors shall preserve the certified statements for a period of ten (10) years from the date of completion of the Contract.

C.2.2 Pursuant to ORS 279C.845(7), the Owner shall retain 25 percent of any amount earned by the Contractor on this public works project until the Contractor has filed the certified statements required by section C.2.1. The Owner shall pay to the Contractor the amount retained under this subsection within 14 days after the Contractor files the required certified statements, regardless of whether a Subcontractor has failed to file certified statements.

C.2.3 Pursuant to ORS 279C.845(8), the Contractor shall retain 25 percent of any amount earned by a first-tier Subcontractor on this public works project until the first-tier Subcontractor has filed with the Owner the certified statements required by C.2.1. Before paying any amount retained under this subsection, the Contractor shall verify that the first-tier Subcontractor has filed the certified statement. Within 14 days after the first-tier Subcontractor files the required certified statement the Contractor shall pay the first-tier Subcontractor any amount retained under this subsection.

C.2.4 In accordance with statutory requirements and administrative rules promulgated by the Commissioner of the Bureau of Labor and Industries, the fee required by ORS 279C.825(1) will be paid by Owner to the Commissioner.

C.3 PROMPT PAYMENT AND CONTRACT CONDITIONS

C.3.1 As a condition to Owner's performance hereunder, the Contractor shall:

C.3.1.1 Make payment promptly, as due, to all persons supplying to Contractor labor or materials for the prosecution of the Work provided for in this Contract.

C.3.1.2 Pay all contributions or amounts due the State Industrial Accident Fund from such Contractor or Subcontractor incurred in the performance of the Contract.

C.3.1.3 Not permit any lien or claim to be filed or prosecuted against the Owner on account of any labor or material furnished. Contractor will not assign any claims that Contractor has against Owner, or assign any sums due by Owner, to Subcontractors, suppliers, or manufacturers, and will not make any agreement or act in any way to give Subcontractors a claim or standing to make a claim against the Owner.

C.3.1.4 Pay to the Department of Revenue all sums withheld from employees pursuant to ORS 316.167.

C.3.2 As a condition to Owner's performance hereunder, if Contractor fails, neglects or refuses to make prompt payment of any claim for labor or services furnished to the Contractor of a Subcontractor by any person in connection with the project as such claim becomes due, the proper officer(s) representing the Owner may pay the claim and charge the amount of the payment against funds due or to become due Contractor under this Contract. Payment of claims in this manner shall not relieve the Contractor or the Contractor's surety from obligation with respect to any unpaid claims.

C.3.3 Contractor shall include in each subcontract for property or services entered into by the Contractor and a first-tier subcontractor, including a material supplier, for the purpose of performing a construction contract, a payment clause that obligates the Contractor to pay the first-tier Subcontractor for satisfactory performance under its subcontract within ten (10) Days out of such amounts as are paid to the Contractor by the public contracting agency under such contract.

C.3.4 All employers, including Contractor, that employ subject workers who work under this contract in the State of Oregon shall comply with ORS 656.017 and provide the required Workers' Compensation coverage, unless such employers are exempt under ORS 656.126. Contractor shall ensure that each of its Subcontractors complies with these requirements.

C.4 PAYMENT FOR MEDICAL CARE

As a condition to Owner's performance hereunder, Contractor shall promptly, as due, make payment to any person, partnership, association or corporation furnishing medical, surgical, and hospital care or other needed care and attention, incident to sickness or injury, to the employees of such Contractor, all sums of which the Contractor agrees to pay for such services and all moneys and sums which the Contractor has collected or deducted from the wages of personnel pursuant to any law, contract or agreement for the purpose of providing or paying for such services.

C.5 HOURS OF LABOR

As a condition to Owner's performance hereunder, no person shall be employed to perform Work under this Contract for more than ten (10) hours in any one day or forty (40) hours in any one week, except in cases of necessity, emergency or where public policy absolutely requires it. In such instances, Contractor shall pay the employee at least time and a half pay:

- (a) For all overtime in excess of eight (8) hours a day or forty (40) hours in any one week when the work week is five consecutive Days, Monday through Friday; or
- (b) For all overtime in excess of ten (10) hours a day or forty (40) hours in any one week when the work week is four consecutive Days, Monday through Friday; and
- (c) For all Work performed on Saturday and on any legal holiday specified in ORS 279C.540.

This section C.5 will not apply to Contractor's Work under this Contract to the extent Contractor is currently a party to a collective bargaining agreement with any labor organization.

This Section C.5 shall not excuse Contractor from completion of the Work within the time required under this Contract.

SECTION D CHANGES IN THE WORK

D.1 CHANGES IN WORK

D.1.1 The terms of this Contract shall not be waived, altered, modified, supplemented or amended in any manner whatsoever, without prior written agreement and then only after any necessary approvals have been obtained. A Change Order is required, which shall not be effective until its execution by the parties to this Contract and all approvals required by public contracting laws have been obtained.

D.1.2 It is mutually agreed that changes in Plans, quantities, or details of construction are inherent in the nature of construction and may be necessary or desirable during the course of construction. Within the general scope of this Contract, the Owner may at any time, without notice to the sureties and without impairing the Contract, require changes consistent with this Section D.1. All changes to the Work shall be documented and Change Orders shall be executed under the conditions of the Contract Documents. Such changes may include, but are not limited to:

- (a) Modification of specifications and design.
- (b) Increases or decreases in quantities.
- (c) Increases or decreases to the amount of Work.
- (d) Addition or elimination of any Work item.
- (e) Change in the duration of the project.
- (f) Acceleration or delay in performance of Work.
- (g) Deductive changes.

Deductive changes are those that reduce the scope of the Work, and shall be made by mutual agreement whenever feasible. In cases of suspension or partial termination under Section J, Owner reserves the right to unilaterally impose a deductive change and to self-perform such Work, for which the provisions of B.13 (Owner's Right to Do Work) shall then apply. Adjustments in compensation shall be made under the provisions of D.1.3, in which costs for deductive changes shall be based upon a Direct Costs adjustment together with the related percentage markup specified for profit, Overhead and other indirect costs, unless otherwise agreed to by Owner.

D.1.3 The Owner and Contractor agree that adjustments to or deletions from the Work shall be administered and compensated according to the following:

- (a) Unit Pricing: Unit pricing may be utilized at the Owner's option when unit prices or solicitation alternates were provided that established the cost for adjustments to Work, and a binding obligation exists under the Contract on the parties covering the terms and conditions of the adjustment to Work.
- (b) Fixed Fee: If the Owner elects not to utilize unit pricing, or in the event that unit pricing is not available or appropriate, fixed pricing may be used for adjustments to or deletions from the Work. In fixed pricing the basis of payments or total price shall be agreed upon in writing between the parties to the Contract, and shall be established before the Work is done whenever feasible. Notwithstanding the foregoing, the mark-ups set forth in D.1.3(c) shall be utilized in establishing fixed pricing, and such mark-ups shall not be exceeded. Cost and price data relating to adjustments to or deletions from the Work shall be supplied by Contractor to Owner upon request, but Owner shall be under no obligation to make such requests.
- (c) Time and Material: In the event that unit pricing and fixed pricing are not utilized, then adjustments to or deletions from the Work shall be performed on a cost reimbursement basis for Direct Costs.

Such Work shall be compensated on the basis of the actual, reasonable and allowable cost of labor, equipment, and material furnished on the Work performed. The Contractor or Subcontractor who performs the Work shall be allowed to add up to ten percent (10%) markup to the Direct Costs as full compensation for profit, Overhead and other indirect costs for Work performed with the Contractor's or Subcontractor's own forces

Each ascending tier Subcontractor or the Contractor that did not perform the Work, will be allowed to add up to five percent (5%) supplemental markup on the Direct Costs of the Work (but not the above allowable markups) covered by a Change Order. No additional markup shall be permitted for any third tier or greater descending Subcontractor.

Example: \$20,000 of Direct Costs Work performed by a 2nd Tier Subcontractor

	Markup	Allowed Total Fee Plus Markup
General Contractor	5%	\$1,000.00
1 st Tier Sub Contractor	5%	\$1,000.00
2 nd Tier Sub Contractor	10%	\$22,000.00

- (d) Payments made to the Contractor shall be complete compensation for Overhead, profit, and all costs that were incurred by the Contractor or by other forces furnished by the Contractor, including Subcontractors, for adjustments to or deletions from the Work pursuant to a Change Order. Owner may establish a maximum cost for additional Work under this Section D.1.3, which shall not be exceeded for reimbursement without additional written authorization from Owner in the form of a Change Order. Contractor shall not be required to complete such additional Work without additional authorization.

- D.1.4 Any necessary adjustment of Contract Time that may be required as a result of adjustments to or deletions from the Work must be agreed upon by the parties before the start of the revised Work unless Owner authorizes Contractor to start the revised Work before agreement on Contract Time adjustment.

Contractor shall submit any request for additional compensation (and additional Contract Time if Contractor was authorized to start Work before an adjustment of Contract Time was approved) as soon as possible but no later than thirty (30) Days after receipt of Owner's request for additional Work. If Contractor's request for additional compensation or adjustment of Contract Time is not made within the thirty (30) Day time limit, Contractor's requests pertaining to that additional Work shall be barred. The thirty (30) Day time limit for making requests shall not be extended for any reason, including without limitation Contractor's claimed inability to determine the amount of additional compensation or adjustment of Contract Time, unless an extension is granted in writing by Owner. If the Owner denies Contractor's request for additional compensation or adjustment of Contract Time, Contractor may proceed to file a Claim under Section D.3, Claims Review Process. No other reimbursement, compensation, or payment will be made, except as provided in Section D.1.5 for impact claims.

- D.1.5 If any adjustment to Work under Section D.1.3 causes an increase or decrease in the Contractor's cost of, or the Contract Time required for the performance of any other part of the Work under this Contract, Contractor shall submit a written request to the Owner, setting forth the nature and specific extent of the request, including all time and cost impacts against the Contract as soon as possible, but no later than thirty (30) Days after receipt of Owner's request for adjustments to or deletions from the Work by Contractor.

The thirty (30) Day time limit applies to claims of Subcontractors, suppliers, or manufacturers who may be affected by Owner's request for adjustments to or deletions from the Work and who request additional compensation or an extension of Contract Time

to perform; Contractor has responsibility for contacting its Subcontractors, suppliers, or manufacturers within the thirty (30) Day time limit, and including their requests with Contractor's requests. If the request involves Work to be completed by Subcontractors, or materials to be furnished by suppliers or manufacturers, such requests shall be submitted to the Contractor in writing with full analysis and justification for the adjustments to compensation and Contract Time requested. The Contractor shall analyze and evaluate the merits of the requests submitted by Subcontractors, suppliers, and manufacturers to Contractor prior to including those requests and Contractor's analysis and evaluation of those requests with Contractor's requests for adjustments to compensation or Contract Time that Contractor submits to the Owner. Failure of Subcontractors, suppliers, manufacturers or others to submit their requests to Contractor for inclusion with Contractor's requests submitted to Owner within the time period and by the means described in this section shall constitute a waiver of these Subcontractor claims. The Owner will not consider direct requests or claims from Subcontractors, suppliers, manufacturers or others not a party to this Contract. The consideration of such requests and claims under this section does not give any Person, not a party to the Contract the right to bring a claim against Owner, whether in this claims process, in litigation, or in any dispute resolution process.

If the Owner denies the Contractor's request for adjustment to compensation or Contract Time, the Contractor may proceed to file a Claim under Section D.3, Claims Review Process.

- D.1.6 No request or Claim by the Contractor for additional costs or an adjustment of Contract Time shall be allowed if made after receipt of final payment application under this Contract. Final payment application must be made by Contractor within the time required under Section E.6.4.

- D.1.7 It is understood that changes in the Work are inherent in construction of this type. The number of changes, the scope of those changes, and the effect they have on the progress of the original Work cannot be defined at this time. The Contractor is notified that numerous changes may be required and that there will be no compensation made, unless and only to the extent otherwise provided in the Contract Documents, to the Contractor directly related to the number of changes. Each change will be evaluated for extension of Contract Time and increase or decrease in compensation based on its own merit.

D.2 DELAYS

- D.2.1 Delays in construction include "Avoidable Delays", which are defined in Section D.2.1.1, and "Unavoidable Delays", which are defined in Section D.2.1.2. The effect of Avoidable Delays is described in Section D.2.2 and the effect of Unavoidable Delays is described in Section D.2.3.

- D.2.1.1 Avoidable Delays include any delays other than Unavoidable Delays, and include delays that otherwise would be considered Unavoidable Delays but that:

- Could have been avoided by the exercise of care, prudence, foresight, and diligence on the part of the Contractor or its Subcontractors.
- Affect only a portion of the Work and do not necessarily prevent or delay the prosecution of neither other parts of the Work nor the completion of the whole Work within the Contract Time.
- Do not impact activities on the accepted critical path schedule.
- Are associated with the reasonable interference of other contractors employed by the Owner that do not necessarily

prevent the completion of the whole Work within the Contract Time.

D.2.1.2 Unavoidable Delays include delays other than Avoidable Delays that are:

- (a) To the extent caused by any actions of the Owner, or any other employee or agent of the Owner, or by separate contractor employed by the Owner.
- (b) To the extent caused by any site conditions which differ materially from what was represented in the Contract Documents or from conditions that would normally be expected to exist and be inherent to the construction activities defined in the Contract Documents. The Contractor shall notify the Owner immediately of differing site conditions before the area has been disturbed. The Owner will investigate the area and make a determination as to whether or not the conditions differ materially from either the conditions stated in the Contract Documents or those which could reasonably be expected in execution of this particular Contract. If Contractor and the Owner agrees that a differing site condition exists, any adjustment to compensation or Contract Time will be determined based on the process set forth in Section D.1.5 for adjustments to or deletions from Work. If the Owner disagrees that a differing site condition exists and denies Contractor's request for additional compensation or Contract Time, Contractor may proceed to file a Claim under Section D.3, Claims Review Process.
- (c) To the extent caused by Force Majeure acts, events or occurrences that could not have been avoided by the exercise of care, prudence, foresight, and diligence on the part of the Contractor or its Subcontractors.
- (d) To the extent caused by adverse weather conditions. Any adverse weather conditions must be substantiated by documentary evidence that weather conditions were abnormal for the specific time period claimed, could not have been anticipated by the Contractor, and adversely impacted the project in a manner that could not be avoided by rescheduling the Work or by implementing measures to protect against the weather so that the Work could proceed. A rain, windstorm, high water, or other natural phenomenon for the specific locality of the Work, which might reasonably have been anticipated from the previous 10-year historical records of the general locality of the Work, shall not be construed as abnormal. The parties agree that rainfall greater than the following levels cannot be reasonably anticipated:
 - (i) Daily rainfall equal to, or greater than, 0.50 inch during a month when the monthly rainfall exceeds the normal monthly average by twenty-five percent (25%) or more.
 - (ii) daily rainfall equal to, or greater than, 0.75 inch at any time.

The Office of the Environmental Data Service of the National Oceanic and Atmospheric Administration of the U.S. Department of Commerce nearest the project site shall be considered the official agency of record for weather information.

D.2.2 Contractor shall not be entitled to additional compensation or additional Contract Time for Avoidable Delays.

D.2.3 In the event of Unavoidable Delays, based on principles of equitable adjustment, Contractor may be entitled to the following:

- (a) Contractor may be entitled to additional compensation or additional Contract Time, or both, for Unavoidable Delays described in Section D.2.1.2 (a) and (b).
- (b) Contractor may be entitled to additional Contract Time for Unavoidable Delays described in Section D.2.1.2(c) and (d).

In the event of any requests for additional compensation or additional Contract Time, or both, as applicable, arising under this Section D.2.3 for Unavoidable Delays, other than requests for additional compensation or additional Contract Time for differing site conditions for which a review process is established under Section D.2.1.2 (b), Contractor shall submit a written notification of the delay to the Owner within two (2) Days of the occurrence of the cause of the delay. This written notification shall state the cause of the potential delay, the project components impacted by the delay, and the anticipated additional Contract Time extension or the additional compensation, or both, as applicable, resulting from the delay. Within seven (7) Days after the cause of the delay has been mitigated, or in no case more than thirty (30) Days after the initial written notification, the Contractor shall submit to the Owner, a complete and detailed request for additional compensation or additional Contract Time, or both, as applicable, resulting from the delay. If the Owner denies Contractor's request for additional compensation or adjustment of Contract Time, the Contractor may proceed to file a Claim under Section D.3, Claims Review Process.

If Contractor does not timely submit the notices required under this Section D.2, then unless otherwise prohibited by law, Contractor's Claim shall be barred.

D.3 CLAIMS REVIEW PROCESS

- D.3.1 All Contractor Claims shall be referred to the Owner for review. Contractor's Claims, including Claims for adjustments to compensation or Contract Time, shall be submitted in writing by Contractor to the Owner within five (5) Days after a denial of Contractor's initial request for an adjustment of Contract terms, payment of money, extension of Contract Time or other relief, provided that such initial request has been submitted in accordance with the requirements and within the time limits established in these County General Conditions. Within thirty (30) Days after the initial Claim, Contractor shall submit to the Owner a complete and detailed description of the Claim (the "Detailed Notice") that includes all information required by Section D.3.2. Unless the Claim is made in accordance with these time requirements, it shall be waived by Contractor.
- D.3.2 The Detailed Notice of the Claim shall be submitted in writing by Contractor and shall include a detailed, factual statement of the basis of the Claim, pertinent dates, Contract provisions which support or allow the Claim, reference to or copies of any documents which support the Claim, the dollar value of the Claim, and the Contract Time adjustment requested for the Claim. If the Claim involves Work to be completed by Subcontractors, the Contractor will analyze and evaluate the merits of the Subcontractor claim prior to forwarding it and that analysis and evaluation to the Owner. The Owner will not consider direct claims from Subcontractors, suppliers, manufacturers, or others not a party to this Contract. Contractor agrees that it will make no agreement, covenant, or assignment, nor will it commit any other act that will permit or assist any Subcontractor, supplier, manufacturer, or other to directly or indirectly make a claim against Owner.
- D.3.3 The Owner will review all Claims and take one or more of the following preliminary actions within ten (10) Days of receipt of the Detailed Notice of a Claim: (1) request additional supporting information from the Contractor; (2) inform the Contractor and Owner in writing of the time required for adequate review and

response; (3) reject the Claim in whole or in part and identify the reasons for rejection; (4) based on principles of equitable adjustment, recommend approval of all or part of the Claim; or (5) propose an alternate resolution.

D.3.4 The Owner's decision shall be final and binding on the Contractor unless appealed by written notice to the Owner within fifteen (15) Days of receipt of the decision. The Contractor must present written documentation supporting the Claim within fifteen (15) Days of the notice of appeal. After receiving the appeal documentation, the Owner shall review the materials and render a decision within thirty (30) Days after receiving the appeal documents.

D.3.5 The decision of the Owner shall be final and binding unless the Contractor delivers to the Owner its request for mediation, which shall be a non-binding process, within fifteen (15) Days of the date of the Owner's decision. The mediation process will be considered to have commenced as of the date the Contractor delivers the request. Both parties acknowledge and agree that participation in mediation is a prerequisite to commencement of litigation of any disputes relating to the Contract. Both parties further agree to exercise their best efforts in good faith to resolve all disputes within sixty (60) Days of the commencement of the mediation through the mediation process set forth herein.

In the event that a lawsuit must be filed within this sixty (60) Day period in order to preserve a cause of action, the parties agree that, notwithstanding the filing, they shall proceed diligently with the mediation to its conclusion prior to actively prosecuting the lawsuit, and shall seek from the Court in which the lawsuit is pending such stays or extensions, including the filing of an answer, as may be necessary to facilitate the mediation process. Further, in the event settlements are reached on any issues through mediation, the plaintiff shall promptly cause to be entered by the Court a stipulated general judgment of dismissal with prejudice, or other appropriate order limiting the scope of litigation as provided in the settlement.

D.3.6 Should the parties arrive at an impasse regarding any Claims or disputed Claims, it is agreed that the parties shall participate in mediation as specified in Section D.3.5. The mediation process will be considered to have been commenced as of the date one party delivers to the other its request in writing to mediate. The mediator shall be an individual mutually acceptable to both parties, but in the absence of agreement each party shall select a temporary mediator and the temporary mediators shall jointly select the permanent mediator. Each party shall pay its own costs for the time and effort involved in mediation. The cost of the mediator shall be split equally between the two parties. Both parties agree to exercise their best effort in good faith to resolve all disputes in mediation. Participation in mediation is a mandatory requirement of both the Owner and the Contractor. The schedule, time and place for mediation will be mutually acceptable, or, failing mutual agreement, shall be as established by the mediator. The parties agree to comply with Owner's administrative rules governing the confidentiality of mediation, if any, and shall execute all necessary documents to give effect to such confidentiality rules. In any event, the parties shall not subpoena the mediator or otherwise require the mediator to produce records, notes or work product, or to testify in any future proceedings as to information disclosed or representations made in the course of mediation, except to the extent disclosure is required by law.

D.3.7 Unless otherwise directed by Owner, Contractor shall proceed with the Work while any Claim, or mediation or litigation arising from a Claim, is pending. Regardless of the review period or the final decision of the Owner, the Contractor shall continue to diligently pursue the Work as identified in the Contract Documents. In no case is the Contractor justified or allowed to cease or Delay Work, in whole or in part, without a written stop work order from the Owner.

SECTION E PAYMENTS

E.1 SCHEDULE OF VALUES

The Contractor shall submit, by or before the pre-construction conference, a schedule of values ("Schedule of Values") for the contracted Work. This schedule shall provide a breakdown of values for the contracted Work and will be the basis for progress payments. The breakdown shall demonstrate reasonable, identifiable, and measurable components of the Work. Unless objected to by the Owner, this schedule shall be used as the basis for reviewing Contractor's applications for payment. If objected to by Owner, Contractor shall revise the schedule of values and resubmit the same for approval of Owner.

E.2 APPLICATIONS FOR PAYMENT

E.2.1 Owner shall make progress payments on the Contract monthly as Work progresses, in accordance with the requirements of this Section E.2. Applications for payment shall be based upon estimates of Work completed and the Schedule of Values. As a condition precedent to Owner's obligation to pay, all applications for payment shall be approved by the Owner. A progress payment shall not be considered acceptance or approval of any Work or waiver of any defects therein. Owner shall pay to Contractor interest for overdue invoices at the rate of two thirds of one percent per month on the progress payment, not including retainage, due the Contractor. Overdue invoices will be those that have not been paid within forty five (45) days from the latest of:

- (a) The date of the receipt of the accurate invoice;
- (b) The date Owner receives the correct application for payment if no invoice is received;
- (c) The date all goods and services have been received; or
- (d) The date a Claim is made certain by agreement of the parties or by operation of law.

Notwithstanding the foregoing, in instances when an application for payment is filled out incorrectly, or when there is any defect or impropriety in any submitted application or when there is a good faith dispute, Owner shall so notify the Contractor within fifteen (15) Days stating the reason or reasons the application for payment is defective or improper or the reasons for the dispute. A defective or improper application for payment, if corrected by the Contractor within seven (7) Days of being notified by the Owner, shall not cause a payment to be made later than specified in this section unless interest is also paid. Payment of interest will be postponed when payment on the principal is delayed because of disagreement between the Owner and the Contractor.

Owner reserves the right, instead of requiring the Contractor to correct or resubmit a defective or improper application for payment, to reject the defective or improper portion of the application for payment and pay the remainder of the application for such amounts which are correct and proper.

Owner, upon written notice to the Contractor, may elect to make payments to the Contractor only by means of Electronic Funds Transfers (EFT) through Automated Clearing House (ACH) payments. If Owner makes this election, the Contractor shall arrange for receipt of the EFT/ACH payments.

E.2.2 Contractor shall submit to the Owner an application for each payment and, if required, receipts or other vouchers showing payments for materials and labor including payments to Subcontractors. Contractor shall include in its application for payment a schedule of the percentages of the various parts of the Work completed, based on the Schedule of Values which shall

aggregate to the payment application total, and shall include, on the face of each copy thereof, a certificate in substantially the following form:

"I, the undersigned, hereby certify that the above bill is true and correct, and the payment therefore, has not been received.

Signed: _____
Dated: _____"

E.2.3 Generally, applications for payment will be accepted only for materials that have been installed. Under special conditions, applications for payment for stored materials will be accepted at Owner's sole discretion. Such a payment, if made, will be subject to the following conditions:

- (a) The request for stored material shall be submitted at least thirty (30) Days in advance of the application for payment on which it appears. Applications for payment shall be entertained for major equipment, components or expenditures only.
- (b) The Contractor shall submit applications for payment showing the quantity and cost of the material stored.
- (c) The material shall be stored in a bonded warehouse and Owner shall be granted the right to access the material for the purpose of removal or inspection at any time during the Contract Period.
- (d) The Contractor shall name the Owner as co-insured on the insurance policy covering the full value of the property while in the care and custody of the Contractor until it is installed. A certificate noting this coverage shall be issued to the Owner.
- (e) Payments shall be made for materials and equipment only. The submitted amount in the application for payment shall be reduced by the cost of transportation from the storage site to the project site and for the cost of an inspector to verify delivery and condition of the goods at the storage site. The cost of storage and inspection shall be borne solely by the Contractor.
- (f) Within sixty (60) Days of the application for payment, the Contractor shall submit evidence of payment covering the material and/or equipment stored and of payment for the storage site.
- (g) Payment for stored materials and/or equipment shall in no way indicate acceptance of the materials and/or equipment or waive any rights under this Contract for the rejection of the Work or materials and/or equipment not in conformance with the Contract Documents.
- (h) All required documentation shall be submitted with the respective application for payment.

E.2.4 The Owner reserves the right to withhold all or part of a payment, or may nullify in whole or part any payment previously made, to such extent as may be necessary in the Owner's opinion to protect the Owner from loss because of:

- (a) Work that is defective and not remedied, or that has been demonstrated or identified as failing to conform with Applicable Laws or the Contract Documents,
- (b) third party claims filed or evidence reasonably indicating that such claims will likely be filed unless security acceptable to the Owner is provided by the Contractor;
- (c) failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment (in which case Owner may issue checks made payable jointly to

Contractor and such unpaid persons under this provision, or directly to Subcontractors and suppliers at any level under Section C.3.2.1);

- (d) reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Price;
- (e) damage to the Work, Owner or another contractor;
- (f) reasonable evidence that the Work will not be completed within the Contract Time required by the Contract, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;
- (g) failure to carry out the Work in accordance with the Contract Documents; or
- (h) assessment of liquidated damages, when withholding is made for offset purposes.

E.2.5 Subject to the provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

- (a) Take that portion of the Contract Price properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the total Contract Price allocated to that portion of the Work in the Schedule of Values, less retainage as provided in Section E.5. Pending final determination of cost to the Owner of changes in the Work, no amounts for changes in the Work can be included in applications for payment until the Contract Price has been adjusted by a payment until the Contract Price has been adjusted by a Change Order;
- (b) Add that portion of the Contract Price properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction (or, if approved in advance by the Owner pursuant to Section E.2.3, suitably stored off the site at a location agreed upon in writing), less retainage as provided in Section E.5;
- (c) Subtract the aggregate of previous payments made by the Owner; and
- (d) Subtract any amounts for which the Owner has withheld or nullified payment as provided in the Contract Documents.

E.2.6 Contractor's applications for payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay to a Subcontractor or material supplier.

E.2.7 The Contractor warrants to Owner that title to all Work covered by an application for payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an application for payment all Work for which payments are received from the Owner shall be free and clear of liens, claims, security interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided financing, labor, materials and equipment relating to the Work.

E.2.8 If Contractor disputes any determination by Owner with regard to any application for payment, Contractor nevertheless shall continue to expeditiously perform the Work. No payment made hereunder shall be or be construed to be final acceptance or approval of that portion of the Work to which such partial payment relates or shall relieve Contractor of any of its obligations hereunder.

E.3 PAYROLL CERTIFICATION REQUIREMENT

Owner's receipt of payroll certification pursuant to Section C.2 of this Contract shall be a condition precedent to Owner's obligation to pay any progress payments or final payment otherwise due.

E.4 DUAL PAYMENT SOURCES

Contractor shall not be compensated for Work performed under this Contract from any state agency other than the agency that is a party to this Contract.

E.5 RETAINAGE

E.5.1 Retainage shall be withheld and released in accordance with the requirements set forth in Local Contract Review Board Rules C-049-0820, or the applicable County standard.

E.5.1.1 Owner may reserve as retainage from any progress payment an amount not to exceed five percent of the payment. As Work progresses, Owner may reduce the amount of retainage on or may eliminate retainage on any remaining monthly Contract payments after 50 percent of the Work under the Contract is completed if, in the Owner's discretion, such Work is progressing satisfactorily. Elimination or reduction of retainage shall be allowed only upon written application by the Contractor, which application shall include written approval of Contractor's surety; except that when the Work is 97-1/2 percent completed the Owner may, at its discretion and without application by the Contractor, reduce the retained amount to 100 percent of the value of the Work remaining to be done. Upon receipt of written application by the Contractor, Owner shall respond in writing within a reasonable time.

E.5.1.2 Contractor may request in writing:

- (a) to be paid amounts which would otherwise have been retained from progress payments where Contractor has deposited acceptable bonds and securities of equal value with Owner or in a custodial account or other mutually agreed account satisfactory to Owner, with an approved bank or trust company to be held in lieu of the cash retainage for the benefit of Owner;
- (b) for construction projects over \$1,000,000, that retainage be deposited in an interest bearing account, established in a bank, savings bank, trust company or savings association for the benefit of Owner, with earnings from such account accruing to the Contractor; or
- (c) that the Owner allow Contractor to deposit a surety bond for the benefit of Owner, in a form acceptable to Owner, in lieu of all or a portion of funds retained, or to be retained. Such bond and any proceeds therefrom shall be made subject to all claims in the manner and priority as set forth for retainage.

When the Owner has accepted the Contractor's election of option (a) or (b), Owner may recover from Contractor any additional costs incurred through such election by reducing Contractor's final payment. Where the Owner has agreed to Contractor's request for option (c), Contractor shall accept like bonds from Subcontractors and suppliers on the project from which Contractor has required retainages.

E.5.1.3 The retainage held by Owner shall be included in and paid to the Contractor as part of the final payment of the Contract Price. The Owner shall pay to Contractor interest at the rate of two thirds of one percent per month on the final payment due Contractor, interest to commence forty five (45) Days after the date which Owner receives Contractor's final approved application for payment and Work under the Contract has been completed and accepted and to run until the date when final

payment is tendered to Contractor. The Contractor shall notify Owner in writing when the Contractor considers the Work complete and deliver to Owner its final application for payment and Owner shall, within fifteen (15) Days after receiving the written notice and the application for payment, either accept the Work or notify the Contractor of Work yet to be performed on the Contract. If Owner does not within the time allowed notify the Contractor of Work yet to be performed to fulfill contractual obligations, the interest provided by this subsection shall commence to run forty five (45) Days after the end of the 15 Day period.

E.5.1.4 Owner will reduce the amount of the retainage if the Contractor notifies the controller of the Owner that the Contractor has deposited in an escrow account with a bank or trust company, in a manner authorized by the Owner, bonds and securities of equal value of a kind approved by the Owner and such bonds and securities have in fact been deposited.

E.5.1.5 Contractor agrees that if Contractor elects to reserve a retainage from any progress payment due to any Subcontractor or supplier, such retainage shall not exceed five percent of the payment, and such retainage withheld from Subcontractors and suppliers shall be subject to the same terms and conditions stated in Subsection E.5 as apply to Owner's retainage from any progress payment due to Contractor.

E.6 FINAL PAYMENT

E.6.1 Upon completion of all the Work under this Contract, the Contractor shall notify the Owner, in writing, that Contractor has completed Contractor's obligations under the Contract and shall prepare its application requesting final payment. Upon receipt of such notice and application for payment, the Owner will inspect the Work, and, if acceptable, submit to Contractor a recommendation as to acceptance of the completed Work and the final estimate of the amount due the Contractor. If the Work is not acceptable, Owner will notify Contractor within fifteen (15) Days of Contractor's request for final payment. Upon approval of this final application for payment by the Owner and compliance by the Contractor with provisions in Section K, and Contractor's satisfaction of other provisions of the Contract Documents as may be applicable, the Owner shall pay to the Contractor all monies due under the provisions of these Contract Documents.

E.6.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Owner (1) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least thirty (30) Days' prior written notice has been given to the Owner, (2) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (3) consent of surety, if any, to final payment and (4), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien. If such lien remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

E.6.3 Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final application for payment.

E.6.4 Contractor agrees to submit its final payment application within ninety (90) Days after Substantial Completion, unless written extension is granted by Owner. Contractor shall not delay final payment application for any reason, including without limitation nonpayment of Subcontractors, suppliers, manufacturers or others not a party to this Contract, or lack of resolution of a dispute with Owner or any other person of matters arising out of or relating to the Contract. If Contractor fails to submit its final payment application within ninety (90) Days after Substantial Completion, and Contractor has not obtained written extension by Owner, all requests or Claims for additional costs or an extension of Contract Time shall be waived.

SECTION F JOB SITE CONDITIONS

F.1 USE OF PREMISES

Contractor shall confine equipment, storage of materials and operation of Work to the limits indicated by Contract Documents, Applicable Laws, permits or directions of the Owner. Contractor shall follow the Owner's instructions regarding use of premises, if any.

F.2 PROTECTION OF WORKERS, PROPERTY AND THE PUBLIC

F.2.1 Contractor shall maintain continuous and adequate protection of all of the Work from damage and shall protect the Owner, workers and property from injury or loss arising in connection with this Contract. Contractor shall remedy acceptably to the Owner any damage, injury, or loss, except such as may be directly due to errors in the Contract Documents or caused by authorized representatives or personnel of the Owner. Contractor shall adequately protect adjacent property as provided by law and the Contract Documents.

F.2.2 Contractor shall take all necessary precautions for the safety of all personnel on the job site or otherwise engaged in the undertaking of the Work and shall comply with the Contract Documents, best practices and all applicable provisions of federal, state and municipal safety laws and building codes to prevent accidents or injury to persons on, about or adjacent to the premises where the Work is being performed. Contractor shall erect and properly maintain at all times, as required by the conditions and progress of the Work, all necessary safeguards for protection of workers and the public against any hazards created by construction. Contractor shall designate a responsible employee or associate on the Work site, whose duty shall be the prevention of accidents. The name and position of the person designated shall be reported to the Owner. The Owner has no responsibility for Work site safety. Work site safety shall be the responsibility of the Contractor.

F.2.3 Contractor shall not enter upon private property without first obtaining permission from the property owner or its duly authorized representative. Contractor shall be responsible for the preservation of all public and private property along and adjacent to the Work contemplated under the Contract and shall use every precaution necessary to prevent damage thereto. In the event the Contractor damages any property, the Contractor shall at once notify the property owner and make, or arrange to make, full restitution. Contractor shall, immediately and in writing, report to the Owner, all pertinent facts relating to such property damage and the ultimate disposition of the claim for damage.

F.2.4 Contractor shall be responsible for protection of adjacent work areas including impacts brought about by activities, equipment, labor, utilities, vehicles and materials on the site.

F.2.5 Contractor shall at all times direct its activities in such a manner as to minimize adverse effects on the environment. Handling of all

materials shall be conducted so no release will occur that may pollute or become hazardous.

F.2.6 In an emergency affecting the safety of life or limb or of the Work or of adjoining property, the Contractor, without special instruction or authorization from the Owner, shall act reasonably to prevent threatened loss or injury, and shall so act, without appeal, if instructed by the Owner. Any compensation claimed by the Contractor on account of emergency work shall be determined in accordance with section D.

F.2.7 Contractor shall comply with all Owner safety rules and regulations. Prior to commencement of any Work, Contractor and Subcontractors shall be required to complete an Owner Contractor Safety Orientation and submit all Owner required safety plans.

F.2.8 Contractor shall demonstrate that an employee drug testing program is in place.

F.3 CUTTING AND PATCHING

F.3.1 Contractor shall be responsible for coordinating all cutting, fitting, or patching of the Work to make its several parts come together properly and fit to receive or be received by work of other contractors or Subcontractors shown upon, or reasonably implied by, the Contract Documents.

F.3.2 Contractor shall be responsible for restoring all cut, fitted, or patched surfaces to an original condition; provided, however, that if a different condition is specified in the Contract Documents, then Contractor shall be responsible for restoring such surfaces to the condition specified in the Contract Documents.

F.4 CLEANING UP

From time to time as may be prudent or ordered by the Owner and, in any event, immediately after completion of the Work, the Contractor shall, at its own expense, clean up and remove all refuse and unused materials of any kind resulting from the Work. If Contractor fails to do so within twenty-four hours after notification by the Owner the work may be done by others and the cost charged to the Contractor and deducted from payment due the Contractor.

F.5 ENVIRONMENTAL CONTAMINATION

F.5.1. Contractor shall be held responsible for and shall indemnify, defend (with counsel of Owner's choice), and hold harmless Owner from and against any costs, expenses, damages, claims, and causes of action, (including attorney fees), or any of them, resulting from all spills, releases, discharges, leaks and disposal of environmental pollution, including storage, transportation, and handling during the performance of the Work or Contractor's obligations under the Contract which occur as a result of, or are contributed by, the negligence or actions of Contractor or its personnel, agents, or Subcontractors or any failure to perform in accordance with the Contract Documents (except to the extent otherwise void under ORS 30.140). Nothing in this section F.5.1 shall limit Contractor's responsibility for obtaining insurance coverages required under Section G.3 of this Contract, and Contractor shall take no action that would void or impair such coverages.

F.5.1.1 Contractor agrees to promptly dispose of such spills, releases, discharge or leaks to the satisfaction of Owner and regulatory agencies having jurisdiction in a manner that complies with Applicable Laws. Cleanup shall be at no cost to the Owner and shall be performed by properly qualified and, if applicable, licensed personnel.

F.5.1.2 Contractor shall obtain the Owner's written consent prior to bringing onto the Work site any (i) environmental pollutants or (ii) hazardous substances or materials, as the same or reasonably

similar terms are used in any Applicable Laws. Notwithstanding such written consent from the Owner, the Contractor, at all times, shall:

- (a) properly handle, use and dispose of all environmental pollutants and hazardous substances or materials brought onto the Work site, in accordance with all Applicable Laws;
- (b) be responsible for any and all spills, releases, discharges, or leaks of (or from) environmental pollutants or hazardous substances or materials which Contractor has brought onto the Work site; and
- (c) promptly clean up and remediate, without cost to the Owner, such spills, releases, discharges, or leaks to the Owner's satisfaction and in compliance with all Applicable Laws.

F.5.2 Contractor shall report all reportable quantity releases, as such releases are defined in Applicable Laws, including but not limited to 40 CFR Part 302, Table 302.4 and in OAR 340-1420050, to applicable federal, state, and local regulatory and emergency response agencies. Upon discovery, regardless of quantity, Contractor must telephonically report all releases to the Owner. A written follow-up report shall be submitted to Owner within 48 hours of the telephonic report. Such written report shall contain, as a minimum:

- (a) Description of items released (identity, quantity, manifest numbers, and any and all other documentation required by law.)
- (b) Whether amount of items released is EPA/DEQ reportable, and, if so, when reported.
- (c) Exact time and location of release, including a description of the area involved.
- (d) Containment procedures initiated.
- (e) Summary of communications about the release between Contractor and members of the press or State, local or federal officials other than Owner.
- (f) Description of cleanup procedures employed or to be employed at the site, including disposal location of spill residue.
- (g) Personal injuries, if any, resulting from, or aggravated by, the release.

F.6 ENVIRONMENTAL CLEAN-UP

F.6.1 Unless disposition of environmental pollution is specifically a part of this Contract, or was caused by the Contractor (reference F.5 Environmental Contamination), Contractor shall immediately notify Owner of any hazardous substance(s) which Contractor discovers or encounters during performance of the Work required by this Contract. "Hazardous substance(s)" means any hazardous, toxic and radioactive materials and those substances defined as "hazardous substances," "hazardous materials," "hazardous wastes," "toxic substances," or other similar designations in any federal, state, or local law, regulation, or ordinance, including without limitation asbestos, polychlorinated biphenyl (PCB), or petroleum, and any substances, materials or wastes regulated by 40 CFR, Part 261 and defined as hazardous in 40 CFR S 261.3. In addition to notifying Owner of any hazardous substance(s) discovered or encountered, Contractor shall immediately cease working in any particular area of the project where a hazardous substance(s) has been discovered or encountered if continued work in such area would present a risk or danger to the health or

wellbeing of Contractor's or any Subcontractor's work force, property or the environment.

F.6.2 Upon being notified by Contractor of the presence of hazardous substance(s) on the project site, Owner shall arrange for the proper disposition of such hazardous substance(s).

F.7 FORCE MAJEURE

A party to this Contract shall not be held responsible for delay or default due to Force Majeure acts, events or occurrences unless they could have been avoided by the exercise of reasonable care, prudence, foresight, and diligence by that party. The Owner may terminate this Contract upon written notice after determining that delay or default caused by Force Majeure acts, events or occurrences will reasonably prevent successful performance of the Contract.

SECTION G **INDEMNITY, BONDING, AND INSURANCE**

G.1 RESPONSIBILITY FOR DAMAGES / INDEMNITY

G.1.1 Contractor shall be responsible for all damage to property, injury to persons, and loss, expense, inconvenience, and delay that may be caused by, or result from, the carrying out of the Work to be done under this Contract, or from any act, omission or neglect of the Contractor, its Subcontractors, employees, guests, visitors, invitees and agents.

G.1.2 To the fullest extent permitted by law, Contractor shall indemnify, defend (with counsel approved by Owner) and hold harmless the Owner, Architect/Engineer, Architect/Engineer's consultants, and their respective officers, directors, agents, employees, partners, members, stockholders and affiliated companies (collectively "Indemnitees") from and against all liabilities, damages, losses, claims, expenses (including reasonable attorney fees), demands and actions of any nature whatsoever which arise out of, result from or are related to, (a) any damage, injury, loss, expense, inconvenience or delay described in this Section G.1., (b) any accident or occurrence which happens or is alleged to have happened in or about the project site or any place where the Work is being performed, or in the vicinity of either, at any time prior to the time the Work is fully completed in all respects, (c) any failure of the Contractor to observe or perform any duty or obligation under the Contract Documents which is to be observed or performed by the Contractor, or any breach of any agreement, representation or warranty of the Contractor contained in the Contract Documents or in any subcontract, (d) the negligent acts or omissions of the Contractor, a Subcontractor or anyone directly or indirectly employed by them or any one of them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder (except to the extent otherwise void under ORS 30.140), and (e) any lien filed upon the project or bond claim in connection with the Work. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Section G.1.2.

G.1.3 In claims against any person or entity indemnified under Section G.1.2 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under Section G.1.2 shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

G.2 PERFORMANCE AND PAYMENT SECURITY; PUBLIC WORKS BOND

- G.2.1 When the Contract Price is \$50,000 or more, the Contractor shall furnish and maintain in effect at all times during the Contract Period a performance bond in a sum equal to the Contract Price and a separate payment bond also in a sum equal to the Contract Price. Contractor shall furnish such bonds even if the Contract Price is less than the above thresholds if otherwise required by the Contract Documents.
- G.2.2 Bond forms furnished by the Owner and notarized by awarded Contractor's surety company authorized to do business in Oregon are the only acceptable forms of performance and payment security, unless otherwise specified in the Contract Documents.
- G.2.3 Before execution of the Contract the Contractor shall file with the Construction Contractors Board, and maintain in full force and effect, the separate public works bond required by Oregon Revised Statutes, Chapter 701, and OAR 839-025-0015, unless otherwise exempt under those provisions. The Contractor shall also include in every subcontract a provision requiring the Subcontractor to have a public works bond filed with the Construction Contractors Board before starting Work, unless otherwise exempt, and shall verify that the Subcontractor has filed a public works bond before permitting any Subcontractor to start Work.

G.3 INSURANCE

- G.3.1 Primary Coverage: Insurance carried by Contractor under this Contract shall be the primary coverage. The coverages indicated are minimums unless otherwise specified in the Contract Documents.
- G.3.2 Workers' Compensation: All employers, including Contractor, that employ subject workers who work under this Contract in the State of Oregon shall comply with ORS 656.017 and provide the required Workers' Compensation coverage, unless such employers are exempt under ORS 656.126. This shall include Employer's Liability Insurance with coverage limits of not less than the minimum amount required by statute for each accident. Contractors who perform the Work without the assistance or labor of any employee need not obtain such coverage if the Contractor certifies so in writing. Contractor shall ensure that each of its Subcontractors complies with these requirements. The Contractor shall require proof of such Workers' Compensation coverage by receiving and keeping on file a certificate of insurance from each Subcontractor or anyone else directly employed by either the Contractor or its Subcontractors.
- G.3.3 Builder's Risk Insurance:
- G.3.3.1 Builder's Risk: During the term of this Contract, for new construction the Contractor shall obtain and keep in effect Builder's Risk insurance on an all risk forms, including earthquake and flood, for an amount equal to the full amount of the Contract, plus any changes in values due to modifications, Change Orders and loss of materials added. Such Builder's Risk shall include, in addition to earthquake and flood, theft, vandalism, mischief, collapse, transit, debris removal, and architect's fees "soft costs" associated with delay of project due to insured peril. Any deductible shall not exceed \$50,000 for each loss, except the earthquake and flood deductible which shall not exceed 2 percent of each loss or \$50,000, whichever is greater. The deductible shall be paid by Contractor if Contractor is negligent. The policy will include as loss payees Owner, the Contractor and its Subcontractors as their interests may appear.
- G.3.3.2 Builder's Risk Installation Floater: For Work other than new construction, Contractor shall obtain and keep in effect during the term of this Contract, a Builder's Risk Installation Floater for coverage of the Contractor's labor, materials and equipment to be used for completion of the Work performed under this Contract. The minimum amount of coverage to be carried shall be equal to the full amount of the Contract. The policy will include as loss payees Owner, the Contractor and its Subcontractors as their interests may appear. Owner may waive this requirement at its sole and absolute discretion.
- G.3.3.3 Such insurance shall be maintained until Owner has occupied the facility.
- G.3.3.4 A loss insured under the Builder's Risk insurance shall be adjusted by the Owner and made payable to the Owner as loss payee. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate agreements, written where legally required for validity, shall require Subcontractors to make payments to their Sub-subcontractors in similar manner. The Owner shall have power to adjust and settle a loss with insurers.
- G.3.4 General Liability Insurance:
- G.3.4.1 Commercial General Liability: Upon execution of a Contract, Contractor shall obtain, and keep in effect at Contractor's expense for the term of the Contract, Commercial General Liability Insurance ("CGL") covering bodily injury and property damage in the amount of not less than \$1,000,000 per claim and \$2,000,000 per occurrence in a form satisfactory to Owner. This insurance shall include personal injury liability, products and completed operations, and contractual liability coverage for the indemnities provided under this Contract (to the extent contractual liability coverage for the indemnity is available in the marketplace), and shall be issued on an occurrence basis written on ISO Form GC 00 01 (12 04 or later) or an equivalent form approved in advance by Owner. The CGL shall provide separation of insured language.
- G.3.4.2 Automobile Liability: Contractor shall obtain, at Contractor's expense, and keep in effect during the term of this Contract, Automobile Liability Insurance covering owned, and/or hired vehicles, as applicable. The coverage may be written in combination with the Commercial General Liability Insurance. Contractor shall provide proof of insurance of not less than \$1,000,000 per claim and \$2,000,000 per occurrence. Contractor and its Subcontractors shall be responsible for ensuring that all non-owned vehicles maintain adequate Automobile Liability insurance while on site.
- G.3.4.3 Owner may adjust the insurance amounts required in Section G.3.4.1 and G.3.4.2 based upon institution specific risk assessments through the issuance of Supplemental General Conditions and a Contract.
- G.3.4.4 To the extent that the Contract Documents require the Contractor to provide professional design services, design-build, or certifications related to systems, materials, or equipment, the Contractor shall (1) purchase and maintain professional liability/errors-and-omissions insurance with limits of not less than \$1,000,000 for each claim and (2) cause those Subcontractors (of any tier) who are providing professional design services including any design-build services to procure and maintain professional liability/errors-and-omissions insurance with limits of not less than \$1,000,000 for each claim.
- G.3.4.5 "Tail" Coverage: If any of the required liability insurance is arranged on a "claims made" basis, "tail" coverage will be required at the completion of this Contract for a duration of 36 months or the maximum time period available in the marketplace if less than 36 months. Contractor shall furnish certification of "tail" coverage as described or continuous "claims made" liability coverage for 36 months following Final Completion. Continuous "claims made" coverage will be acceptable in lieu of

"tail" coverage, provided its retroactive date is on or before the effective date of this Contract. Owner's receipt of the policy endorsement evidencing such coverage shall be a condition precedent to Owner's obligation to make final payment and to Owner's final acceptance of Work or services and related warranty (if any).

G.3.4.6 Umbrella Liability (if required by Owner through issuance of Supplemental General Conditions): Contractor shall obtain, at Contractor's expense, and keep in effect during the term of the Contract, Umbrella liability Insurance over and above the general liability, automobile liability and workers' compensation coverage if required by Owner in specified limits at time of requirement.

G.3.4.6 Pollution Liability (if required by Owner through issuance of Supplemental General Conditions): Contractor shall obtain, at Contractor's expense, and keep in effect during the term of the Contract, Pollution liability Insurance in minimum amounts of \$3,000,000 naming Owner as "additional insured," as noted in the "additional insured section below.

G.3.5 Additional Insured: The general liability insurance coverage, automobile liability, umbrella, and pollution liability if required, shall include the Owner as additional insureds but only with respect to the Contractor's activities to be performed under this Contract. The additional-insured endorsement for CGL insurance must be written on ISO Form CG 20 10 (10 01) and CG 20 37 (10 01), or their equivalent, but shall not use either of the following forms: CG 20 10 (10 93) or CG 20 10 (03 94).

If Contractor cannot obtain an insurer to name the Owner as additional insureds, Contractor shall obtain at Contractor's expense, and keep in effect during the term of this Contract, Owners and Contractors Protective Liability Insurance, naming the Owner as additional insureds with not less than a \$2,000,000 limit per occurrence. This policy must be kept in effect for 36 months following Final Completion. As evidence of coverage, Contractor shall furnish the actual policy to Owner prior to execution of the Contract.

G.3.6 Notice of Cancellation or Change: If the Contractor receives a non-renewal or cancellation notice from an insurance carrier affording coverage required herein, or receives notice that coverage no longer complies with the insurance requirements herein, Contractor agrees to notify Owner by fax within five (5) business days with a copy of the non-renewal or cancellation notice, or written specifics as to which coverage is no longer in compliance. When notified by Owner, the Contractor agrees to stop Work pursuant to this Contract, unless all required insurance remain in effect. Any failure to comply with the reporting provisions of this insurance, except for the potential exhaustion of aggregate limits, shall not affect the coverages provided to the Owner and its institutions, divisions, officers, and employees.

Owner shall have the right, but not the obligation, of prohibiting Contractor from entering the Work site until a new certificate(s) of insurance is provided to Owner evidencing the replacement coverage. The Contractor agrees that Owner reserves the right to withhold payment to Contractor until evidence of reinstated or replacement coverage is provided to Owner.

G.3.7 Certificate(s) of Insurance: As evidence of the insurance coverage required by the Contract, the Contractor shall furnish certificate(s) of insurance to the Owner prior to execution of the Contract. The certificate(s) will specify all of the parties who are additional insureds or loss payees for the contract. Insurance coverage required under this Contract shall be obtained from insurance companies or entities acceptable to the Owner and that are eligible to provide such insurance under Oregon law. Eligible insurers include admitted insurers that have been issued a

certificate of authority from the Oregon Department of Consumer and Business Services authorizing them to conduct an insurance business and issue policies of insurance in the state of Oregon, and certain non-admitted surplus lines insurers that satisfy the requirements of applicable Oregon law and which are subject to approval by the Owner. The Contractor shall be financially responsible for all deductibles, self-insured retentions and/or self-insurance included hereunder. Any deductible, self-insured retention and/or self-insurance in excess of \$50,000 shall be subject to approval by the Owner in writing and shall be a condition precedent to the effectiveness of any Contract.

SECTION H

SCHEDULE OF WORK

H.1 CONTRACT PERIOD

H.1.1 Time is of the essence. The Contractor shall at all times carry on the Work diligently, without delay and punctually fulfill all requirements herein. If required by the Contract Documents, Contractor shall commence Work on the site within fifteen (15) Days of Notice to Proceed, unless directed otherwise.

H.1.2 Unless specifically extended by a Change Order, all Work shall be complete by the date contained in the Contract Documents. The Owner shall have the right to accelerate the completion date of the Work, which may require the use of overtime. Such accelerated Work schedule shall be an acceleration in performance of Work under Section D.1.2 (f) and shall be subject to the provisions of Section D.1.

H.1.3 The Owner shall not waive any rights under the Contract by permitting the Contractor to continue or complete in whole or in part the Work after the date described in Section H.1.2 above.

H.2 SCHEDULE

H.2.1 Contractor shall provide, by or before the pre-construction conference, the initial as-planned schedule for review and acceptance by the Owner. The submitted schedule must illustrate Work by project components, labor trades, and long lead items broken down by building and/or floor where applicable. If Owner shall so elect, Contractor shall provide the schedule in CPM format showing the graphical network of planned activities, including i) a reasonably detailed list of all activities required to complete the Work; ii) the time and duration that each activity will take to completion; and iii) the dependencies between the activities. Schedules lacking adequate detail, or unreasonably detailed, will be rejected. The schedule shall include the following: Notice to Proceed or the date the Work commences, if no Notice to Proceed is issued by Owner, Substantial Completion, and Final Completion. Schedules shall be updated monthly, unless otherwise required by the Contract Documents, and submitted with the monthly application for payment. Acceptance of the Schedule by the Owner does not constitute agreement by the Owner as to the Contractor's sequencing, means, methods, or durations. Any positive difference between the Contractor's scheduled completion and the Contract completion date is float owned by the Owner. Owner reserves the right to negotiate the float if it is deemed to be in Owner's best interest to do so. In no case shall the Contractor make a claim for delays if the Work is completed within the Contract Time but after Contractor's scheduled completion.

H.2.2 All Work shall be completed during normal weekdays (Monday through Friday) between the hours of 7:00 a.m. and 5:00 p.m. unless otherwise specified in the Contract Documents. Unless otherwise specified in the Contract Documents, no Work shall be performed during the following holidays:

- New Year's Day
- Martin Luther King Day
- Memorial Day
- Independence Day
- Labor Day
- Veterans Day
- Thanksgiving Day
- Christmas Day

When a holiday falls on a Sunday, the following Monday shall be recognized as a legal holiday. When a holiday falls on Saturday, the preceding Friday shall be recognized as a legal holiday.

H.3 PARTIAL OCCUPANCY OR USE

H.3.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage, provided such occupancy or use is consented to by public authorities having jurisdiction over the Work. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have reasonably accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, insurance or self-insurance, maintenance, heat, utilities, and damage to the Work, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents with respect to such portion of the Work. Approval by the Contractor to partial occupancy or use shall not be unreasonably withheld. Immediately prior to such partial occupancy or use, the Owner and Contractor shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work. Partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

SECTION I CORRECTION OF WORK

I.1 CORRECTION OF WORK BEFORE FINAL PAYMENT

The Contractor warrants to the Owner that materials and equipment furnished under the Contract will be of good quality and new unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects, and that the Work will conform to the requirements of the Contract Documents. Work failing to conform to these requirements shall be deemed defective. Contractor shall promptly remove from the premises and replace all defective materials and equipment as determined by the Owner, whether incorporated in the Work or not. Removal and replacement shall be without loss or expense to the Owner, and Contractor shall bear the cost of repairing all Work destroyed or damaged by such removal or replacement. Contractor shall be allowed a period of no longer than thirty (30) Days after Substantial Completion for completion of defective (Punch List) work. At the end of the thirty-day period, or earlier if requested by the Contractor, Owner shall arrange for inspection of the Work by the Architect/Engineer. Should the work not be complete, and all corrections made, the costs for all subsequent reinspections shall be borne by the Contractor. If Contractor fails to complete the Punch List work within the thirty (30) Day period, Owner may perform such work and Contractor shall reimburse Owner all costs of the same within ten (10) Days after demand without affecting Contractor's obligations.

I.2 WARRANTY WORK

I.2.1 Neither the final certificate of payment nor any provision of the Contract Documents shall relieve the Contractor from responsibility for defective Work and, unless a longer period is specified, Contractor shall correct all defects that appear in the Work within a period of one year from the date of issuance of the written notice of Substantial Completion by the Owner except for

latent defects which will be remedied by the Contractor at any time they become apparent. The Owner shall give Contractor notice of defects with reasonable promptness. Contractor shall perform such warranty work within a reasonable time after Owner's demand. If Contractor fails to complete the warranty work within such period as Owner determines reasonable, or at any time in the event of warranty work consisting of emergency repairs, Owner may perform such work and Contractor shall reimburse Owner all costs of the same within ten (10) Days after demand, without affecting Contractor's obligations. The Contractor shall perform the warranty Work by correcting defects within twenty-four (24) hours of notification by Owner, unless otherwise specified in the Contract Documents. Should the Contractor fail to respond within the specified response time, the Owner may, at its option, complete the necessary repairs using another contractor or its own forces. If Owner completes the repairs using Owner's own forces, Contractor shall pay Owner at the rate of one and one-half (1½) times the standard hourly rate of Owner's forces, plus related overhead and any direct non-salary costs. If Owner completes the repairs using another contractor, Contractor shall pay Owner the amount of Owner's direct costs billed by the other contractor for the work, plus the direct salary costs and related overhead and direct non-salary expenses of Owner's forces who are required to monitor that contractor's work. Work performed by Owner using Owner's own forces or those of another contractor shall not affect the Contractor's contractual duties under these provisions, including warranty provisions.

- I.2.2 Nothing in this Section I.2 provision shall negate guarantees or warranties for periods longer than one year including without limitation, such guarantees or warranties required by other sections of the Contract Documents for specific installations, materials, processes, equipment or fixtures.
- I.2.3 In addition to Contractor's warranty, manufacturer's warranties shall pass to the Owner and shall not take effect until such portion of the Work covered by the applicable warranty has been accepted in writing by the Owner.
- I.2.4 The one-year period for correction of Work shall be extended with respect to portions of Work performed after Substantial Completion by the period of time between Substantial Completion and the actual performance of the Work, and shall be extended by corrective Work performed by the Contractor pursuant to this Section, as to the Work corrected. The Contractor shall remove from the site portions of the Work which are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.
- I.2.5 Nothing contained in this Section I.2 shall be construed to establish a period of limitation with respect to other obligations which the Contractor might have under the Contract Documents. Establishment of the period for correction of Work as described in this Section I.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.
- I.2.6 If the Owner prefers to accept Work which is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Price will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

SECTION J
SUSPENSION AND/OR TERMINATION OF THE WORK

J.1 OWNER'S RIGHT TO SUSPEND THE WORK

J.1.1 The Owner has the authority to suspend portions or all of the Work due to the following causes:

- (a) Failure of the Contractor to correct unsafe conditions;
- (b) Failure of the Contractor to carry out any provision of the Contract;
- (c) Failure of the Contractor to carry out orders;
- (d) Conditions, in the opinion of the Owner, which are unsuitable for performing the Work;
- (e) Time required to investigate differing site conditions;
- (f) Any reason considered to be in the public interest.

J.1.2 The Owner shall notify Contractor and the Contractor's Surety in writing of the effective date and time of the suspension, and Owner shall notify Contractor and Contractor's surety in writing to resume Work.

J.2 CONTRACTOR'S RESPONSIBILITIES

J.2.1 During the period of the suspension, Contractor is responsible to continue maintenance at the project just as if the Work were in progress. This includes, but is not limited to, protection of completed Work, maintenance of access, protection of stored materials, temporary facilities, and clean-up.

J.2.2 When the Work is recommenced after the suspension, the Contractor shall replace or renew any Work damaged during the suspension, remove any materials or facilities used as part of temporary maintenance, and complete the Work in every respect as though its prosecution had been continuous and without suspension.

J.3 COMPENSATION FOR SUSPENSION

J.3.1 Depending on the reason for suspension of the Work, the Contractor or the Owner may be due compensation by the other party. If the suspension was required due to acts or omissions of Contractor, the Owner may assess the Contractor actual costs of the suspension in terms of administration, remedial work by the Owner's forces or another contractor to correct the problem associated with the suspension, rent of temporary facilities, and other actual costs related to the suspension. If the suspension was caused by acts or omissions of the Owner, the Contractor may be due compensation which shall be defined using Section D, Changes in Work. If the suspension was required through no fault of the Contractor or the Owner, neither party shall owe the other for the impact.

J.4 OWNER'S RIGHT TO TERMINATE CONTRACT

J.4.1 The Owner may, without prejudice to any other right or remedy, and after giving Contractor seven (7) Days' written notice and an opportunity to cure, terminate the Contract in whole or in part under the following conditions:

- (a) If Contractor should, voluntarily or involuntarily, seek protection under the United States Bankruptcy Code and Contractor as debtor-in-possession or the Trustee for the estate fails to assume the Contract within a reasonable time;

- (b) If Contractor should make a general assignment for the benefit of Contractor's creditors;
- (c) If a receiver should be appointed on account of Contractor's insolvency;
- (d) If Contractor should repeatedly refuse or fail to supply an adequate number of skilled workers or proper materials to carry on the Work as required by the Contract Documents, or otherwise fail to perform the Work in a timely manner;
- (e) If Contractor should repeatedly fail to make prompt payment to Subcontractors or for material or labor, or should disregard laws, ordinances or the instructions of the Owner; or
- (f) If Contractor is otherwise in breach of any part of the Contract.
- (g) If Contractor is in violation of Applicable Laws, either in the conduct of its business or in its performance of the Work.

J.4.2 At any time that any of the above occurs, Owner may exercise all rights and remedies available to Owner at law or in equity, and, in addition, Owner may take possession of the premises and of all materials and appliances and finish the Work by whatever method it may deem expedient. In such case, the Contractor shall not be entitled to receive further payment until the Work is completed. If the Owner's cost of finishing the Work exceeds the unpaid balance of the Contract Price, Contractor shall pay the difference to the Owner.

J.5 TERMINATION FOR CONVENIENCE

J.5.1 Owner may terminate the Contract in whole or in part whenever Owner determines that termination of the Contract is in the best interest of Owner or the public.

J.5.2 The Owner shall provide the Contractor with seven (7) Days prior written notice of a termination for Owner's or for public convenience. After such notice, the Contractor shall provide the Owner with immediate and peaceful possession of the premises and materials located on and off the premises for which the Contractor received progress payment under Section E. Compensation for Work terminated by the Owner under this provision will be according to Section E. In no circumstance shall Contractor be entitled to lost profits for Work not performed due to termination.

J.6 ACTION UPON TERMINATION

J.6.1 Upon receiving a notice of termination, and except as directed otherwise by the Owner, Contractor shall immediately cease placing further subcontracts or orders for materials, services, or facilities. In addition, Contractor shall terminate all subcontracts or orders to the extent they relate to the Work terminated and, with the prior written approval of the Owner, settle all outstanding liabilities and termination settlement proposals arising from the termination of subcontracts and orders.

J.6.2 As directed by the Owner, Contractor shall, upon termination, transfer title and deliver to the Owner all Record Documents, information, and other property that, if the Contract had been completed, would have been required to be furnished to the Owner.

J.6.3 Upon Owner's notice of termination pursuant to either Section J.4 or J.5, if Owner shall so elect, Contractor shall assign to the Owner such subcontracts and orders as Owner shall specify. In the event Owner elects to take assignment of any such subcontract or order, Contractor shall take such action and shall execute such documents as Owner shall reasonably require for the effectiveness of such assignment and Contractor shall ensure that no contractual

arrangement between it and its subcontractors or suppliers of any tier or sub-tier shall prevent such assignment.

SECTION K

CONTRACT CLOSE OUT

K.1 RECORD DOCUMENTS

As a condition of final payment (refer also to section E.6), Contractor shall comply with the following: Contractor shall provide Record Documents for the entire project to Owner. Record Documents shall depict the project as constructed and shall reflect each and every change, modification, and deletion made during the construction. Record Documents are part of the Work and shall be provided prior to the Owner's issuance of final payment. Record Documents include all modifications to the Contract Documents unless otherwise directed.

K.2 OPERATION AND MAINTENANCE MANUALS

As part of the Work, Contractor shall submit two completed operation and maintenance manuals ("O & M Manuals") for review by the Owner prior to submission of any pay request for more than 75% of the Work. Owner's receipt of the O & M Manuals shall be a condition precedent to any payment thereafter due. The O & M Manuals shall contain a complete set of all submittals, all product data as required by the specifications, training information, telephone list and contact information for all consultants, manufacturers, installer and suppliers, manufacturer's printed data, record and shop drawings, schematic diagrams of systems, appropriate equipment indices, warranties and bonds. The Owner shall review and return one O & M Manual for any modifications or adjustments required. Prior to submission of its final pay request, Contractor shall deliver two (2) complete and approved sets of O & M Manuals in paper form and one (1) complete and approved set in electronic form to the Owner and Owner's receipt of the O & M Manuals shall be a condition precedent to Owner's obligation to make final payment.

K.3 COMPLETION NOTICES

- K.3.1 Contractor shall provide Owner written notice of both Substantial and Final Completion. The certificate of Substantial Completion shall state the date of Substantial Completion, the responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and the time within which the Contractor shall finish all items on the Punch List accompanying the Certificate. Both completion notices must be signed and notarized by the Contractor and signed by the Architect/Engineer (if applicable) and Owner to be valid. The Owner shall provide the final signature on the notices. The notices shall take effect on the date they are signed by the Owner.
- K.3.2 Substantial Completion of a facility with operating systems (e.g., mechanical, electrical, HVAC) shall be that degree of completion that has provided a minimum of thirty (30) continuous Days of successful, trouble-free operation, which period shall begin after all performance and acceptance testing has been successfully demonstrated to the Owner. All equipment contained in the Work, plus all other components necessary to enable the Owner to operate the facility in the manner that was intended, shall be complete on the Substantial Completion date. The Contractor may request that a Punch List be prepared by the Owner with submission of the request for the Substantial Completion notice.

K.4 TRAINING

As part of the Work, and prior to submission of the final application for payment, the Contractor shall schedule with the Owner training sessions for all equipment and systems as required by the Contract Documents. Contractor shall schedule training sessions at least two weeks in advance of the date of training to allow Owner to provide its personnel with adequate notice. The O & M Manual shall be used as a basis for training.

In addition to any off-site training required by the Contract Documents, training shall include a formal session conducted at the Work site after the equipment and/or system is completely installed and operational in its normal operating environment.

K.5 EXTRA MATERIALS

As part of the Work, Contractor shall provide spare parts, extra maintenance materials, and other materials or products in the quantities specified in the Contract Documents prior to final payment. Delivery point for extra materials shall be designated by the Owner.

K.6 ENVIRONMENTAL CLEAN-UP

As part of the Final Completion notice, or as a separate written notice submitted with or before the notice of Final Completion, the Contractor shall notify the Owner that all environmental and pollution clean-up, remediation and closure have been completed in accordance with all Applicable Laws and pursuant to the authority of all agencies having jurisdiction, and Contractor shall provide Owner with any and all documentation related to the same, including but not limited to directives, orders, letters, certificates and permits related to or arising from such environmental pollution. The notice shall reaffirm the indemnification given under Section F.5.1 above. Contractor's completion of its obligations under this Section K.6 and Owner's receipt of documents evidencing such completion shall be a condition precedent to Owner's obligation to make final payment.

K.7 CERTIFICATE OF OCCUPANCY

Owner's receipt of an unconditioned certificate of occupancy from the appropriate state and/or local building officials shall be a condition precedent to Owner's obligation to make final payment, except to the extent failure to obtain an unconditional certificate of occupancy is due to the fault or neglect of Owner.

K.8 OTHER CONTRACTOR RESPONSIBILITIES

The Contractor shall be responsible for returning to the Owner all property of Owner issued to Contractor during construction such as keys, security passes, site admittance badges, and all other pertinent items. Upon notice from Owner, Contractor shall be responsible for notifying the appropriate utility companies to transfer utility charges from the Contractor to the Owner. The utility transfer date shall not be before Substantial Completion and may not be until Final Completion, if the Owner does not take beneficial use of the facility and the Contractor's forces continue with the Work.

The Owner's property is drug free and weapons free areas and the use of tobacco products is only allowed in designated areas. Contractor shall be required to ensure that its employees, Subcontractors and agents shall comply with these requirements.

K.9 SURVIVAL

All warranty and indemnification provisions of this Contract, and all of Contractor's other obligations under this Contract that are not fully performed by the time of Final Completion or termination, shall survive Final Completion or any termination of the Contract.



**CLACKAMAS COUNTY
PUBLIC IMPROVEMENT CONTRACT
SUPPLEMENTAL GENERAL CONDITIONS**

PROJECT: CBX Fiber – Lake Oswego School District Expansion-Phase 2

The following modifies the January 1, 2017 Clackamas County General Conditions for Public Improvement Contracts (“County General Conditions”) for this Contract. Except as modified below, all other terms and conditions of the County General Conditions shall remain in effect.

1. Permits

Section B.4-Permits of the County General Conditions is hereby deleted in its entirety and replaced with the following:

B.4 PERMITS

The County shall obtain and pay for all necessary project permits. Contractor shall be responsible for all violations of the law, in connection with the construction or caused by obstructing streets, sidewalks or otherwise. Contractor shall give all requisite notices to public authorities.

2. Good Faith Effort

As a condition of Contractor being awarded a Contract for this Project, Contractor must complete Good Faith Effort outreach and documentation as described in the Supplemental Instructions to Bidders of the Solicitation Document.

The Contractor may not change who is performing each Division of Work identified in Form 1 of the Good Faith Effort without the express written advance approval of Owner. This includes substituting identified subcontractors, self-performance of a Division of Work that was identified to be performed by a subcontractor, or the Contractor subcontracting a Division of Work that was identified to be self-performed by the Contractor.

Contractor shall be required to submit the completed Form 3 with its final pay application as a condition of final payment.



**CLACKAMAS COUNTY
PUBLIC IMPROVEMENT CONTRACT
PERFORMANCE BOND**

Bond No.: _____

Solicitation: #2017-25

Project Name: CBX Fiber – Lake Oswego School District Expansion-Phase 2

_____ (Surety #1)	Bond Amount No. 1:	\$ _____
_____ (Surety #2)*	Bond Amount No. 2:*	\$ _____
	Total Penal Sum of Bond:	\$ _____

** If using multiple sureties*

We, _____ as Principal, and the above identified Surety(ies), authorized to transact surety business in Oregon, as Surety, hereby jointly and severally bind ourselves, our respective heirs, executors, administrators, successors and assigns firmly by these presents to pay unto Clackamas County, the sum of (Total Penal Sum of Bond) _____ (Provided, that we the Sureties bind ourselves in such sum “jointly and severally” as well as “severally” only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety); and

WHEREAS, the Principal has entered into a contract with Clackamas County, along with the plans, specifications, terms and conditions of which are contained in the above-referenced Solicitation; and

WHEREAS, the terms and conditions of the contract, together with applicable plans, standard specifications, special provisions, schedule of performance, and schedule of contract prices, are made a part of this Performance Bond by reference, whether or not attached to the contract (all hereafter called “Contract”); and

WHEREAS, the Principal has agreed to perform the Contract in accordance with the terms, conditions, requirements, plans and specifications, and all authorized modifications of the Contract which increase the amount of the work, the amount of the Contract, or constitute an authorized extension of the time for performance, notice of any such modifications hereby being waived by the Surety:

NOW, THEREFORE, THE CONDITION OF THIS BOND IS SUCH that if the Principal herein shall faithfully and truly observe and comply with the terms, conditions and provisions of the Contract, in all respects, and shall well and truly and fully do and perform all matters and things undertaken by Contractor to be performed under the Contract, upon the terms set forth therein, and within the time prescribed therein, or as extended as provided in the Contract, with or without notice to the Sureties, and shall indemnify and save harmless Clackamas County and its elected officials, officers, employees and agents, against any direct or indirect damages or claim of every kind and description that shall be suffered or claimed to be suffered in connection with or arising

out of the performance of the Contract by the Principal or its subcontractors, and shall in all respects perform said contract according to law, then this obligation is to be void; otherwise, it shall remain in full force and effect for so long as any term of the Contract remains in effect.

If the County determines that any of the above conditions have not been met, the County may require payment under this bond at its sole and absolute discretion and Surety shall issue prompt payment of the full value of this bond without set-off or dispute or requirement for an opportunity to cure.

Nonpayment of the bond premium will not invalidate this bond nor shall Clackamas County, be obligated for the payment of any premiums.

This bond is given and received under authority of Oregon Revised Statutes Chapter 279C and the Clackamas County Local Contractor Review Board Rules, the provisions of which hereby are incorporated into this bond and made a part hereof.

IN WITNESS WHEREOF, WE HAVE CAUSED THIS INSTRUMENT TO BE EXECUTED AND SEALED BY OUR DULY AUTHORIZED LEGAL REPRESENTATIVES.

Dated this _____ day of _____, 20_____.

PRINCIPAL: _____

By: _____

Signature

Official Capacity

Attest: _____

Corporation Secretary

SURETY: _____

[Add signatures for each if using multiple bonds]

BY ATTORNEY-IN-FACT:

[Power-of-Attorney must accompany each bond]

Name

Signature

Address

City

State

Zip

Phone

Fax



CLACKAMAS COUNTY PUBLIC IMPROVEMENT CONTRACT

PAYMENT BOND

Bond No.: _____

Solicitation: #2017-25

Project Name: CBX Fiber – Lake Oswego School District Expansion-Phase 2

_____ (Surety #1)	Bond Amount No. 1:	\$ _____
_____ (Surety #2)*	Bond Amount No. 2:*	\$ _____
* <i>If using multiple sureties</i>	Total Penal Sum of Bond:	\$ _____

We, _____, as Principal, and the above identified Surety(ies), authorized to transact surety business in Oregon, as Surety, hereby jointly and severally bind ourselves, our respective heirs, executors, administrators, successors and assigns firmly by these presents to pay unto Clackamas County, the sum of (Total Penal Sum of Bond) _____ (Provided, that we the Sureties bind ourselves in such sum “jointly and severally” as well as “severally” only for the purpose of allowing a joint action or actions against any or all of us, and for all other purposes each Surety binds itself, jointly and severally with the Principal, for the payment of such sum only as is set forth opposite the name of such Surety); and

WHEREAS, the Principal has entered into a contract with Clackamas County, along with the plans, specifications, terms and conditions of which are contained in above-referenced Solicitation; and

WHEREAS, the terms and conditions of the contract, together with applicable plans, standard specifications, special provisions, schedule of performance, and schedule of contract prices, are made a part of this Payment Bond by reference, whether or not attached to the contract (all hereafter called “Contract”); and

WHEREAS, the Principal has agreed to perform the Contract in accordance with the terms, conditions, requirements, plans and specifications, and schedule of contract prices which are set forth in the Contract and any attachments, and all authorized modifications of the Contract which increase the amount of the work, or the cost of the Contract, or constitute authorized extensions of time for performance of the Contract, notice of any such modifications hereby being waived by the Surety:

NOW, THEREFORE, THE CONDITION OF THIS BOND IS SUCH that if the Principal shall faithfully and truly observe and comply with the terms, conditions and provisions of the Contract, in all respects, and shall well and truly and fully do and perform all matters and things by it undertaken to be performed under said Contract and any duly authorized modifications that are made, upon the terms set forth therein, and within the time prescribed therein, or as extended therein as provided in the Contract, with or without notice to the Sureties, and shall indemnify and save harmless Clackamas County and its elected officials, officers, employees and agents, against any claim for direct or indirect damages of every kind and description that shall be suffered or claimed to be suffered in connection with or arising out of the performance of the Contract by the Contractor or its subcontractors, and shall promptly pay all persons supplying labor, materials or both to the Principal or its subcontractors for prosecution of the work provided in the Contract; and shall promptly pay all contributions due the State Industrial Accident Fund and the State Unemployment Compensation Fund from the Principal or its subcontractors in connection with the performance of the Contract; and shall pay over to the Oregon Department of Revenue all sums required to be deducted and retained from the wages of employees of the Principal and its subcontractors pursuant to ORS 316.167, and shall permit no lien nor

claim to be filed or prosecuted against Clackamas County on account of any labor or materials furnished; and shall do all things required of the Principal by the laws of this State, then this obligation shall be void; otherwise, it shall remain in full force and effect for so long as any term of the Contract remains in effect.

If the County determines that any of the above conditions have not been met, the County may require payment under this bond at its sole and absolute discretion and Surety shall issue prompt payment of the full value of this bond without set-off or dispute or requirement for an opportunity to cure.

Nonpayment of the bond premium will not invalidate this bond nor shall Clackamas County be obligated for the payment of any premiums.

This bond is given and received under authority of Oregon Revised Statutes Chapter 279C and the Clackamas County Local Contractor Review Board Rules, the provisions of which hereby are incorporated into this bond and made a part hereof.

IN WITNESS WHEREOF, WE HAVE CAUSED THIS INSTRUMENT TO BE EXECUTED AND SEALED BY OUR DULY AUTHORIZED LEGAL REPRESENTATIVES:

Dated this _____ day of _____, 20____.

PRINCIPAL: _____

By: _____
Signature

Official Capacity

Attest: _____
Corporation Secretary

SURETY: _____
[Add signatures for each if using multiple bonds]

BY ATTORNEY-IN-FACT:
[Power-of-Attorney must accompany each bond]

Name

Signature

Address

City State Zip

Phone Fax



CLACKAMAS COUNTY
PUBLIC IMPROVEMENT CONTRACT
PROJECT INFORMATION, PLANS, SPECIFICATIONS AND DRAWINGS

PROJECT: #2017-25 CBX Fiber – Lake Oswego School District Expansion-Phase 2

Purpose: This Project will provide backbone infrastructure expansion of the Clackamas Broadband Exchange (CBX) Network in Lake Oswego, Oregon. Specifically, this Project will facilitate expanded broadband connectivity for the Lake Oswego School District sites and facilities in the area. Collectively, the overall project will have a total of 10 segments that will need new fiber. Specifically, this Bid is only for segments 4, 7, 8, 10, and 12.

Owner Project Manager: Duke Dexter

Architect/Engineer of Record: Commstructure Consulting

Additional Requirements:

- All terminated fiber will have Lucent connectors (LC).
- All utility make-ready costs will be the responsibility of Clackamas CBX.
- All fiber cables need to be labeled in all splice cases and vaults for future reference.
- Contractor to provide all labor and materials needed for completion of this Project with the exception of the items listed below:
 - 144 count loose tube fiber cable
 - 24 count loose tuber fiber cable
 - fiber tags
- All permits will be provided by the Owner to the Contractor.
- Contractor will need to provide an approved Traffic Control Plan as well as approved insurance documentation.
- All flagging costs need to be included within the Bid.
- All disturbed areas shall be restored to an in-kind or better condition.

Listed below are the splice and termination quantities per segment:

Segment #4

-Splice 144 fibers (sheet 2.0), will need a TYCO 450D Splice Case

Segment #7

-Splice 144 fibers (Sheet 2.0), will need a TYCO 450D Splice Case

-Splice 4 fibers (Sheet 11.0)

-Terminate 4 fibers (Sheet S.2)

-Splice 144 fibers (Sheet 12.0), will need a TYCO 450D Splice Case

Segment #8

-Splice 4 fibers (Sheet 2.0), will need a TYCO 450D Splice Case

-Splice 4 fibers (Sheet 9.0)

-Terminate 4 fibers (Sheet S.2)

Segment #10

- Splice 8 fibers (Sheet 2.0), will need a TYCO 450D Splice Case
- Terminate 4 fibers (Sheet S.2)
- Terminate 4 fibers (Sheet S.4)

Segment # 12

- Splice 4 fibers (Sheet 2.0), will need a TYCO 450D Splice Case
- Terminate 4 fibers (Sheet S.2)

The Scope further includes the following plans, drawings and specifications which are attached and hereby incorporated by reference:

- Clackamas Broadband Exchange Lake Oswego School District Expansion//Segment 4- Construction Set dated February 2017.
- Clackamas Broadband Exchange Lake Oswego School District Expansion//Segment 7- Lake Grove Elementary School Construction Set dated March, 2017.
- Clackamas Broadband Exchange Lake Oswego School District Expansion//Segment 8- Oak Creek Elementary School Construction Set dated March, 2017.
- Clackamas Broadband Exchange Lake Oswego School District Expansion//Segment 10- Lakeridge Jr. High School & River Grove Elementary School Construction Set dated February, 2017.
- Clackamas Broadband Exchange Lake Oswego School District Expansion//Segment 12- Westridge Elementary School Construction Set dated February, 2017.

Key Dates:

Commencement Date: Upon issuance of Notice to Proceed

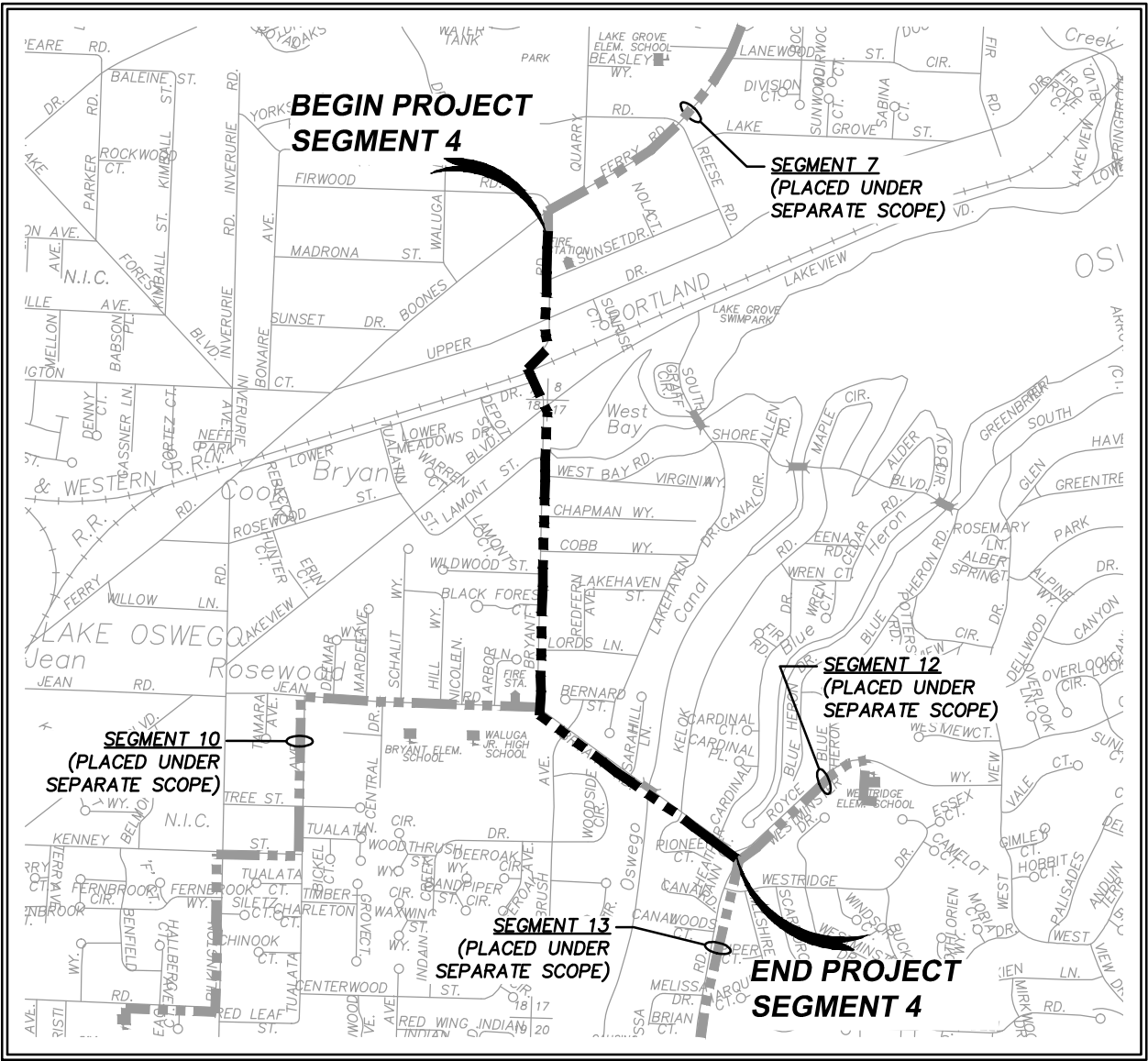
Substantial Completion Date: June 01, 2017

Final Completion Date: June 30, 2017

Time is of the essence for this Project.

CLACKAMAS BROADBAND EXCHANGE
LAKE OSWEGO SCHOOL DISTRICT EXPANSION // SEGMENT 4

CITY OF LAKE OSWEGO, CLACKAMAS COUNTY, OREGON
TOWNSHIP 02 SOUTH , RANGE 01 EAST, SECTIONS 7,8,17
February 2017



VICINITY MAP
SCALE: NTS

SHEET INDEX

SHEET NAME	DESCRIPTION
1.0	COVER SHEET - VICINITY MAP
1.1	JOB SCOPE - MATERIAL TAKE-OFF
1.2	LEGEND
1.3	GENERAL NOTES
1.4	GENERAL NOTES
1.5	GENERAL NOTES
1.6	VAULT DETAILS
1.7	RISER DETAILS / LOCATE WIRE AND BONDING DETAILS
2.0	AERIAL PLAN: BRYANT ROAD
3.0	AERIAL PLAN: BRYANT ROAD
4.0	AERIAL PLAN: BRYANT ROAD
5.0	AERIAL PLAN: BRYANT ROAD
6.0	AERIAL PLAN: BRYANT ROAD
7.0	AERIAL PLAN: BRYANT ROAD
MCP.1	MASTER CABLE PLAN: SEGMENT 4

OWNER / APPLICANT

CLACKAMAS BROADBAND EXCHANGE
121 LIBRARY COURT
OREGON CITY, OR 97045
OFFICE: 503.655.8322

CONTACT: DUKE DEXTER; BROADBAND PROJECT COORDINATOR
OFFICE: 503.722.6663 CELL: 971.219.3339
E-MAIL: DDEXTER@CO.CLACKAMAS.OR.US

DESIGN CONSULTANTS

COMMSTRUCTURE CONSULTING LLC
811 RAILROAD AVE., OREGON CITY, OR 97045
OFFICE: 503.343.4134

CONTACT: JAMES GREENWOOD EIT, OSP PROJECT MANAGER
DIRECT: 971.266.4424
E-MAIL: JAMES@COMMSTRUCTURECONSULTING.COM

CONTACT: TERENCE WALKER, PROJECT DESIGNER
DIRECT: 971.266.4429
E-MAIL: TERENCE@COMMSTRUCTURECONSULTING.COM



Know what's below.
Call before you dig.

OREGON ADMINISTRATIVE RULES 952-001-0020

PROJECT PLANS TO NOTIFY EXCAVATOR OF REQUIREMENTS OF LAW
ALL PROJECT PLANS SHALL CONTAIN THE FOLLOWING STATEMENT:

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 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).

STAT. AUTH.: SEC. 1 - 5 & 7, CH. 691, OL 1995
STATS. IMPLEMENTED:
HIST.: OUNC 1-1997, F. & CERT. EF. 4-17-97

Clackamas Broadband eXchange
information at the speed of light

LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 4
COVER SHEET - VICINITY MAP

CITY: LAKE OSWEGO - TOWNSHIP 02 SOUTH RANGE 01 EAST SECTION: 7,8,17		COUNTY: CLACKAMAS CO., OREGON	
PLOT DATE: 2/03/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG - TAB_SHEET # LAKEO-S4-CS00.DWG - CS01_1.0	SHEET 1.0

Plot Date: 03 Feb 2017, 2:35pm By User: Tom
Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 4\LAKEO-S4-CS00.DWG Layout (if Any): CS01_1.0

811 Railroad Avenue
Oregon City, Oregon 97045
www.commstructureconsulting.com

Main Office:
503.343.4134

DESIGNED BY: T. WALKER

CHECKED BY: J. GREENWOOD

DRAWN BY: T. BRADLEY

REVISIONS

REV	DESCRIPTION	DATE	BY	APP

CONSTRUCTION SET

JOB SCOPE

LAKE OSWEGO, OREGON
CLACKAMAS COUNTY

TOWNSHIP 2S – RANGE 1E – SECTIONS 7, 8, 17

PROJECT SUMMARY

THIS PROJECT WILL PROVIDE BACKBONE INFRASTRUCTURE EXPANSION OF THE CLACKAMAS BROADBAND EXCHANGE (CBX) NETWORK IN LAKE OSWEGO, OREGON. SPECIFICALLY, THIS PROJECT WILL FACILITATE EXPANDED BROADBAND CONNECTIVITY FOR THE LAKE OSWEGO SCHOOL DISTRICT SITES AND FACILITIES IN THE AREA.

THIS PROJECT IS DIVIDED INTO 10 SEPARATE BUT CONTINUOUS BACKBONE SEGMENTS WITH THE COMBINED ROUTE TOTALING APPROXIMATELY 70,000 FEET OF NEW AERIAL AND UNDERGROUND INFRASTRUCTURE. THE FOLLOWING IS THE SCOPE OF WORK AND SUMMARY FOR THIS SPECIFIC SEGMENT DESIGN PACKAGE.

BACKBONE – SEGMENT 4

SEGMENT 4 WILL CREATE A NEW FIBER OPTIC BACKBONE NETWORK CONNECTION BETWEEN SEGMENTS 4, 7 AND 13 OF THE LAKE OSWEGO SCHOOL DISTRICT EXPANSION BACKBONE AND CONNECT SEGMENT 4 TO SEGMENTS 7, 10, 12, 13 AND EXISTING CBX FACILITIES.

BEGINNING AT PROPOSED SEGMENT 7 AND SEGMENT 4 REEL-END SPLICE LOCATED IN AN UTILITY VAULT ADJACENT TO PGE RISER POLE #2040 ON THE SW CORNER OF BRYANT DR AND FIRWOOD RD, A NEW CONDUIT PATHWAY WILL BE CONSTRUCTED NORTH ON THE WEST SIDE OF BRYANT RD TO PGE RISER POLE #2040. THE NEW 144F CABLE AND A #12AWG LOCATE WIRE IS TO BE PLACED THROUGH THE NEW AND EXISTING CONDUIT PATHWAY AS DESCRIBED ABOVE.

FROM PGE RISER POLE #2040 THE NEW 6.6M STRAND PATHWAY WILL BE CONSTRUCTED SOUTH ON THE WEST SIDE OF BRYANT RD TO PGE POLE #597 LOCATED ON THE SW CORNER OF BRYANT RD AND UPPER DR. THEN CONTINUING SOUTH TO PGE POLE #1518 WHERE IT WILL CONTINUE SOUTH OVER THE PORTLAND & WESTERN RR. FROM HERE THE NEW AERIAL PATHWAY WILL CONTINUE SOUTH ON THE EAST SIDE OF BRYANT RD TO PGE POLE #4517 LOCATED ON THE SW CORNER OF BRYANT RD AND JEAN RD. THEN CONTINUING SE ON THE SOUTH SIDE OF BRYANT RD TO PGE RISER POLE #10 LOCATED ON THE SE CORNER OF BRYANT RD AND ROYCE WAY. THE NEW 144F CABLE WILL BE LASHED TO THE NEW 6.6M STRAND PATHWAY AS DESCRIBED ABOVE TERMINATING AT AN AERIAL STORAGE LOOP AND PROPOSED REEL END SPLICE LOCATION CONNECTING TO SEGMENTS 4, 12 AND 13.

CONTRACTOR WILL BE RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE CITY, COUNTY, STATE AND PRIVATE AGENCY RIGHT OF WAY AND POLE ATTACHMENT PERMIT REQUIREMENTS INCLUDING TRAFFIC CONTROL, WORK HOUR RESTRICTIONS, NOTIFICATIONS AND RESTORATION. CABLE REEL LOCATIONS ALONG WITH SLACK STORAGE IN THE FIBER CABLE WILL BE PLACED AT AERIAL STORAGE AND VAULT LOCATIONS AS DESIGNATED IN THE CONSTRUCTION DRAWINGS AND FIBER OWNERSHIP TAGS WILL BE PLACED ON THE CABLE AT EVERY POLE AND EVERY VAULT LOCATION. THE CONTRACTOR WILL PLUG ALL VACATED HOLES FROM ABANDON OR RELOCATED ATTACHMENTS PER POLE OWNER SPECIFICATIONS. CONTRACTOR WILL TEST AND VERIFY THE EXISTING CONDUIT PRIOR TO INSTALLATION OF THE NEW FIBER OPTIC CABLE AND LOCATE WIRE. CONTRACTOR WILL CLEAN AND TAG FIBER COILS; PREP FOR SPLICE; PLACE LOCATE WIRE; TEST STATIONS; GROUND RODS; AND GROUND WIRE AS REQUIRED AND DETAILED IN THE CONSTRUCTION DRAWINGS WITH REPLACING ANY MISSING LOCATE WIRE WITHIN THE EXISTING CONDUIT PATHWAYS.

PERMITS

CITY OF LAKE OSWEGO:	1
PORTLAND & WESTERN RR:	1
PGE POLE PERMIT:	1
CENTURYLINK PERMIT:	1
FRONTIER PERMIT	1

MATERIAL & INSTALLATION SUMMARY

DESCRIPTION	UOM	TOTALS
MATERIAL RAKE OFF:		

AERIAL QUANTITY:

6.6M STRAND / MESSENGER:	FT	6304
1–1/4" AERIAL 6.6M FIGURE 8 CONDUIT: (SPANS UNDER 225FT)	FT	65
3/4" SCREW ANCHOR:	EA	7
6.6M DOWN GUY:	EA	11
4" CONDUIT RISER (10’ GRC REMAINING PVC):	FT	30
AERIAL SLACK STORAGE BRACKET (SNOW SHOE – QTY. 2):	EA	6

UNDERGROUND QUANTITY:

1–1/4" SCH40 PVC OR SDR11 HDPE CONDUIT:	FT	360
36X48X36 OPEN BOTTOM HAND HOLE:	EA	1
#12 AWG LOCATE WIRE:	FT	40
LOCATE WIRE TEST STATION:	EA	1
5/8’ X 5’ GROUND ROD:	EA	1

INTERIOR QUANTITY:

FIBER QUANTITY:

144 CT ARMORED FIBER OPTIC CABLE:	FT	6344
144 CT ARMORED FIBER OPTIC CABLE SLACK:	FT	800

INSTALLATION RAKE OFF:

AERIAL QUANTITY:

PLACE NEW 6.6M STRAND / MESSENGER:	FT	6304
PLACE NEW ANCHOR:	EA	7
PLACE NEW DOWN GUY:	EA	11
PLACE NEW 4" CONDUIT RISER (10’ GRC REMAINING PVC):	EA	1
PLACE NEW AERIAL SLACK STORAGE BRACKET (SNOW SHOE – QTY. 2):	EA	6

UNDERGROUND QUANTITY:

PLACE THREE (3) NEW 1–1/4" SCH40 PVC OR SDR11 HDPE CONDUIT:	FT	10
PLACE NEW 36X48X36 OPEN BOTTOM HAND HOLE:	EA	1
PLACE NEW #12 AWG LOCATE WIRE (AS–REQUIRED):	FT	10
PLACE NEW LOCATE WIRE TEST STATION (AS–REQUIRED):	EA	1
PLACE NEW 5/8’ X 5’ GROUND ROD (AS–REQUIRED):	EA	1

INTERIOR QUANTITY:

FIBER QUANTITY:

PLACE (LASH) NEW FIBER CABLE TO NEW STRAND:	FT	6304
PULL NEW CABLE THROUGH AERIAL CONDUIT:	FT	65

TOTAL POLES	EA	42
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*** NOTE:
FOOTAGES SHOWN ARE MEASURED IN LINEAR FEET.
TO ACCOMMODATE FOR SAG DISTANCE FROM POLE TO POLE,
ADD 2% TO TOTAL CABLE & STRAND.



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REVISIONS

REV	DESCRIPTION	DATE	BY	APP

Clackamas Broadband eXchange

information at the speed of light

LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 4
JOB SCOPE - MATERIAL - RAKE-OFF

CITY: LAKE OSWEGO – TOWNSHIP 02 SOUTH RANGE 01 EAST SECTION: 7,8,17		COUNTY: CLACKAMAS CO., OREGON	
PLOT DATE: 3/15/2017	SCALE: AS SHOWN	PROJECT NAME–FILENAME.DWG – TAB_SHEET # LAKEO–S4–CS00.DWG – CS02_1.1	SHEET 1.1

SPECIFICATION SET

SURFACE FEATURES / AERIAL UTILITIES - LINETYPES & SYMBOLS

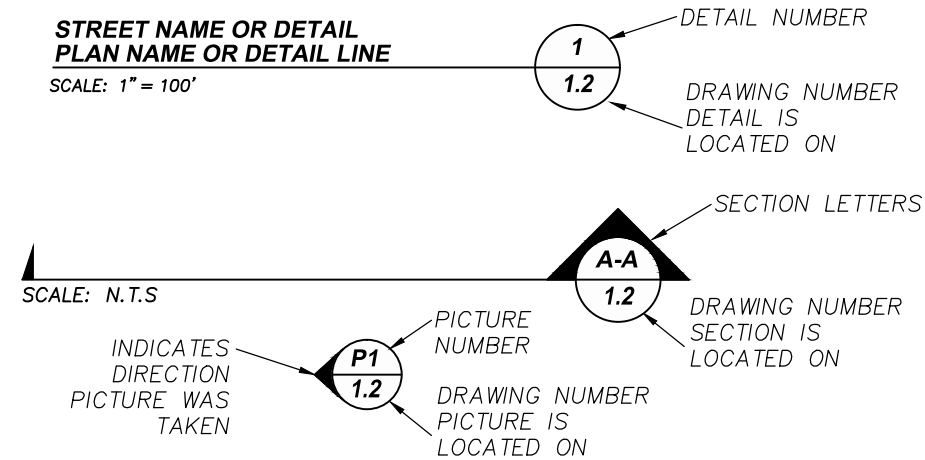
EXISTING	PROPOSED
<div>DESIGN</div> <div><div>CABLE</div><div>STRAND</div><div>CONDUIT</div><div>PLENUM / RISER RATED FLEX CONDUIT (AS SPECIFIED)</div></div>	<div>DESIGN</div> <div><div>CABLE</div><div>STRAND</div><div>CONDUIT</div><div>PLENUM / RISER RATED FLEX CONDUIT (AS SPECIFIED)</div></div>
<div>COMMUNICATIONS</div> <div>(OWNERS SPECIFIED ON PLANS)</div> <div>CATV CATV</div> <div>T TELEPHONE</div> <div>FO FIBER OPTIC</div>	
<div>POWER/ELECTRICAL</div> <div>(OWNERS SPECIFIED ON PLANS)</div> <div>P PRIMARY</div> <div>SL STREET LIGHT</div> <div>TS TRAFFIC SIGNAL</div>	
<div>OTHER UTILITIES</div> <div>G GAS</div> <div>SS SANITARY</div> <div>ST STORM</div> <div>W WATER</div>	
<div>TOPO FEATURES</div> <div>BOW BACK OF WALK/SIDEWALK</div> <div><div>BUILDING FOOTPRINT</div></div> <div>> CULVERT</div> <div>CURB CURB</div> <div>EOC EDGE OF CONCRETE</div> <div>EOG EDGE OF GRAVEL</div> <div>EOP EDGE OF PAVEMENT</div> <div>DWY DRIVEWAY</div> <div>TOB TOP OF BANK</div> <div>X X FENCE STRIPING</div> <div>R/R TRACKS</div> <div>C/L RIGHT-OF-WAY CENTERLINE</div> <div>R/W RIGHT-OF-WAY</div> <div>P/L PROPERTY LINE</div> <div>EASEMENT</div> <div>WALL</div> <div>VEGETATION LINE</div>	<div>POLE TO POLE GUY</div> <div>CENTERLINE</div>

ABBREVIATIONS

E/W EQUIPPED WITH	N NORTH	AB ABANDONED	FS FIELD SIDE	RPL REPLACE
D/W DRIVEWAY	S SOUTH	BOC BACK OF CURB	FOC FACE OF CURB	SCA SIDE CABLE ARM
O/S OFFSET	E EAST	BOW BACK OF SIDEWALK	GRC GALVANIZED RIGID CONDUIT	SLP STREET LIGHT PROTECTED
R/W RIGHT OF WAY	W WEST	BP BORE PIT	HT HEIGHT	SLU STREET LIGHT UNPROTECTED
S/W SIDEWALK		DG DOWNGUY	HDG HOT DIPPED GALVANIZED	SL STREET LIGHT
N/O NORTH OF		FC FIBERGLASS CONDUIT	ID INNERDUCT	CATV CABLE TELEVISION
S/O SOUTH OF		FGA FIBERGLASS ARM	MGN MULTI-GROUNDED NEUTRAL	TEL TELEPHONE
E/O EAST OF		DOC DEPTH OF COVER	MIN MINIMUM	VGR VERTICAL GROUND ROD
W/O WEST OF		FDC FIBER DUCT IN CONCRETE	OD OUTSIDE DIAMETER	WT WEIGHT
		FO FIBER OPTIC	PL PLACE	W-W WALL TO WALL FOOTAGE
		NT NO TAG	PWR POWER	P-W POLE TO WALL FOOTAGE
		NV NOT VISIBLE	PUE PUBLIC UTILITY EASEMENT	BE BUILDING ENTRY
		BT BLANK TAG		

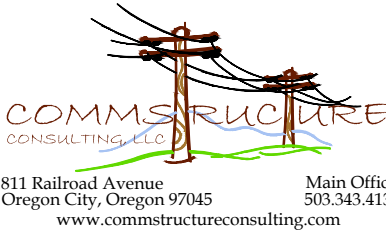
EXISTING	PROPOSED
<div>UTILITY POLE</div>	<div>UTILITY POLE</div>
<div>SPLICE</div>	<div>SPLICE</div>
<div>MID-SHEATH SPLICE</div>	<div>MID-SHEATH SPLICE</div>
<div>VAULT/BUILDING STORAGE</div>	<div>VAULT/BUILDING STORAGE</div>
<div>FIBER SYMBOL</div>	<div>FIBER SYMBOL</div>
<div>FT AERIAL STORAGE</div>	<div>FT AERIAL STORAGE</div>
<div>POWER ANCHOR & GUY</div>	<div>ANCHOR & GUY</div>
<div>POWER S/W ANCHOR & GUY</div>	<div>DOWNGUY TO EXISTING ANCHOR</div>
<div>COMM ANCHOR & GUY</div>	<div>S/W ANCHOR & GUY</div>
<div>COMM S/W ANCHOR & GUY</div>	<div>DOWNGUY TO EXISTING S/W ANCHOR</div>
<div>VGR GROUND</div>	<div>VGR GROUND</div>
<div>INTERIOR BOND</div>	<div>INTERIOR BOND</div>

DETAILS AND SECTIONS CALLOUT SYMBOLOGY



EXISTING	PROPOSED
<div>TELECOMM</div> <div>CABLE MARKER</div> <div>CABLE MARKER E/W GROUND LUGS</div> <div>LOCATE TERMINAL ACCESS POINT</div> <div>GROUND ROD</div> <div>CATV RISER</div> <div>TELECOMM MANHOLE</div>	<div>CABLE MARKER</div> <div>CABLE MARKER E/W GROUND LUGS</div> <div>LOCATE TERMINAL ACCESS POINT</div> <div>GROUND ROD</div> <div>SIGNAL CONTROLLER</div>
<div>POWER</div> <div>POWER TRANSFORMER</div> <div>POWER METER</div>	
<div>TRAFFIC</div> <div>CROSS WALK SIGNAL</div> <div>R/R CROSSING SIGNAL</div> <div>JUNCTION BOX</div> <div>TRAFFIC SIGNAL POLE</div> <div>SIGNAL CONTROLLER</div> <div>RAILROAD ARM</div> <div>SIGN</div>	
<div>STORM</div> <div>AREA DRAIN</div> <div>CATCH BASIN</div> <div>STORM SEWER</div>	
<div>WATER</div> <div>BLOW OFF</div> <div>FIRE CONNECTION</div> <div>FIRE HYDRANT</div> <div>IRRIGATION METER</div> <div>IRRIGATION VALVE</div> <div>WATER METER</div> <div>WATER VALVE</div> <div>WATER VAULT</div>	
<div>TOPO</div> <div>BOLLARD</div> <div>GAS VALVE</div> <div>GAS METER</div> <div>LUMINAIRE</div> <div>MAILBOX</div> <div>PROPERTY CORNER</div> <div>MONUMENT SURVEY</div> <div>PARKING METER</div> <div>SANITARY SEWER</div> <div>STEEL PILING</div> <div>TREE</div>	

45'/4/D(T)=POLE HT/CLASS/DISTRIBUTION(TRANSMISSION)
P.O.A.=_____ <-PROPOSED POINT OF ATTACHMENT



DESIGNED BY: CCLLC
CHECKED BY: CCLLC DRAWN BY: CCLLC

REVISIONS				
REV	DESCRIPTION	DATE	BY	APP

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CLACKAMAS BROADBAND EXPRESS
STANDARD PLANS FOR CONSTRUCTION
LEGEND

CITY: CITY – TOWNSHIP RANGE SECTION:				COUNTY: COUNTY CO., STATE	
PLOT DATE: 12/06/2016	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG – TAB_SHEET # CBX-DT00.DWG – LG01_1.2		SHEET	1.2

SPECIFICATION SET

SITE CONDITIONS:

THE LOCATIONS OF EXISTING UTILITIES SHOWN IN THIS PLAN ARE APPROXIMATE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES. UTILITIES MAY EXIST IN THE AREA IN ADDITION TO THOSE SHOWN ON THE PLAN. THE CONTRACTOR SHALL CONTACT PROPERTY OWNERS WHEN WORKING WITHIN PRIVATE EASEMENTS FOR LOCATION OF UNDERGROUND TANKS, PIPELINES, DRAIN TILES, OR OTHER BURIED IMPROVEMENTS. THE CONTRACTOR SHALL ALSO NOTIFY THE UTILITY NOTIFICATION CENTER PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITIES.

THE CONTRACTOR MUST ASSUME ALL BURIED UTILITIES ENCOUNTERED ARE LIVE AND ACTIVE UNLESS SPECIFICALLY INSTRUCTED OTHERWISE BY THE OWNERS OR OPERATORS OF SAID UTILITIES. REPAIR OF ANY DAMAGED CONDUIT CONTAINING CABLE SHALL BE MADE BY USE OF PVC SPLIT DUCT OR MATCH EXISTING. DAMAGE TO SUB-SURFACE STRUCTURES IS THE SOLE RESPONSIBILITY OF THE PLACING CONTRACTOR.

THE CONTRACTOR SHALL PROTECT THE EXISTING TRAFFIC CONTROL LOOPS. IF EXISTING TRAFFIC CONTROL LOOPS ARE DAMAGED DURING CONSTRUCTION, THE ENTIRE LOOP WIRE FROM TERMINAL TO TERMINAL SHALL BE REPLACED IN ACCORDANCE WITH GOVERNING AGENCY STANDARDS AND REGULATIONS AT CONTRACTOR'S EXPENSE.

REMOVAL OF EXISTING ASPHALT PAVEMENT, CONCRETE CURBS, AND CONCRETE SIDEWALKS WILL BE "NEAT LINE" WITH SAW OR PAVEMENT CUTTER, PER REQUIREMENTS AND SPECIFICATIONS OF THE AGENCY OR DEPARTMENT RESPONSIBLE FOR EACH LOCATION. IF CONCRETE PAVEMENT IS ENCOUNTERED WHILE EXCAVATING CONDUIT TRENCHES, THE CONCRETE REMOVAL WILL BE "NEAT LINE" WITH A PAVEMENT SAW.

IF CONCRETE CURB RETURNS AND/OR SIDEWALKS ARE REPLACED DUE TO CONDUIT OR MANHOLE INSTALLATION, THE CONTRACTOR SHALL PLACE APPROVED HANDICAPPED SIDEWALK AND CURB ACCESS RAMPS IN CONFORMANCE WITH STATE STATUTES.

ALL MATERIALS NECESSARY FOR THE REPAIR OF STREETS, CURBS, SIDEWALKS, SANITARY SEWERS, STORM SEWERS, AND PUBLIC SERVICE UTILITIES, AND THE INSTALLATION OF SUCH MATERIALS SHALL BE IN CONFORMANCE WITH THE REQUIREMENTS AND SPECIFICATIONS OF THE AGENCY OR DEPARTMENT RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE REPAIRED FACILITY.

ALL OPEN TRENCH WILL BE CLEARLY MARKED WITH BARRICADES OR CONES. STEEL PLATES OR OTHER TYPES OF BRIDGING SHALL BE PROVIDED TO COVER OPEN TRENCH IN THE TRAVEL PORTION OF THE STREETS. THESE PLATES OR BRIDGING SHALL BE ADEQUATE TO SUPPORT THE NORMAL VEHICLE LOADS ANTICIPATED IN THIS AREA AND SHALL BE IN PLACE DURING ALL NON-WORKING AREAS.

ALL SURFACES TO BE RESTORED TO ORIGINAL CONDITION, AND BACKFILL TO BE COMPACTED AS SPECIFIED. TRENCH EXCAVATION IN SURFACES WHICH INCLUDE CONCRETE TREATED BASE SHALL FOLLOW LOCAL AREA SPECIFICATIONS.

ALL WORK SHALL CONFORM TO THE SPECIFICATIONS OF THE JURISDICTIONAL PERMIT AGENCY.

TEMPORARY BACKFILL:

THE CONTRACTOR SHALL BE REQUIRED TO MAINTAIN NORMAL TRAFFIC MOVEMENT DURING NON-WORK PERIODS FOR ALL CONSTRUCTION ACTIVITY WITHIN THE LIMITS OF CITY STREETS BY THE USE OF STEEL PLATES (DESIGNED FOR H-20 LOADING) OR BACKFILLING THE TRENCH. IF THE CONTRACTOR ELECTS TO BACKFILL THE TRENCH HE SHALL "CAP" THE TRENCH WITH A 2"(COMPACTED MINIMUM) DEPTH OF CLASS "C" ASPHALTIC CONCRETE COLD MIX. IF THE CONTRACTOR ELECTS TO PLATE THE TRENCH THE PLATES SHALL BE PINNED AT EACH CORNER AND THE EDGES SHALL BE "RAMPED" WITH CLASS "C" ASPHALTIC CONCRETE COLD MIX TO PREVENT "WHEEL SHOCK" ON IMPACT. COLD MIX SHALL BE COMPACTED AND SMOOTH IN EITHER TYPE OF INSTALLATION. TO PREVENT SKIDDING, TRAFFIC PLATES SHALL BE TREATED WITH WELD BEADS TO PROVIDE TRACTION. WELD BEADS SHALL BE LOCATED 4" ON CENTER AND EXTEND THROUGH THE TRAVEL PORTIONS OF THE PLATES. USE OF STEEL PLATES IN THE ROW TO BE APPROVED BY THE GOVERNING PERMIT AGENCY.

BACKFILL:

BACKFILL OF CONDUIT TRENCH OR MANHOLE EXCAVATION SHALL BE 3/4" – 0 CRUSHED ROCK PLACED IN 6" LIFTS AND COMPACTED WITH MECHANICAL VIBRATING TYPE COMPACTION EQUIPMENT TO 95% OF MAXIMUM DRY DENSITY (ASTM D-1550 OR AASHTO T-180) UNDER ALL PAVED SURFACES UNLESS OTHERWISE SPECIFIED.

BACKFILL OF CONDUIT TRENCH OR MANHOLE EXCAVATION IN NON-PAVED AREAS SHALL BE CLEAN SAND OR SILTY LOAM SOILS PLACED IN 1'-0" LIFTS COMPACTED BY MECHANICAL VIBRATING TYPE COMPACTION EQUIPMENT TO 95% OF MAXIMUM DRY DENSITY (ASTM D698 OR AASHTO T-99) UNLESS OTHERWISE SPECIFIED.

BACKFILL AROUND ALL VAULTS SHOULD CONSIST OF COMPACTED SELECT BACKFILL MATERIAL OR IN ACCORDANCE WITH AGENCY SPECIFIED BACKFILL. IN NO CASE SHALL THE MATERIAL BE SATURATED OR CONTAIN LARGE ROCKS OR CHUNKS. NO VOIDS SHALL REMAIN BETWEEN THE VAULT WALLS AND THE NATIVE SOIL. BACKFILL AROUND VAULTS SHALL NOT BE PLACED UNTIL THE ENTIRE VAULT STRUCTURE IS IN PLACE INCLUDING ALL LIDS AND RISERS, BEING SURE TO COMPACT FILL MATERIAL FROM BOTTOM TO TOP SURFACE.

SAND MAY BE WATER SETTLED IF THAT TYPE OF COMPACTION IS ALLOWED BY THE PERMITTING AGENCY IN EITHER PAVED OR NON-PAVED SITUATIONS. THE CONTRACTOR SHALL VERIFY THE TYPE OF COMPACTION ALLOWED PRIOR TO BEGINNING ANY BACKFILL ACTIVITY.

BACKFILL SHALL BE PLACED IN ACCORDANCE WITH THE SPECIFICATIONS AND REGULATIONS OF THE JURISDICTIONAL PERMIT AGENCY.

HAZARDOUS MATERIALS:

THE CONTRACTOR SHALL NOTIFY THE JURISDICTIONAL PERMIT AGENCY IMMEDIATELY IF ANY MATERIALS ARE ENCOUNTERED THAT MAY BE CONSIDERED HAZARDOUS BY THE EPA, DEQ, OR OSHA. IF POTENTIALLY HAZARDOUS MATERIALS ARE ENCOUNTERED THE CONTRACTOR SHALL SECURE THE SITE AND PREVENT ACCIDENTAL EXPOSURE TO THE PUBLIC OR THE CONTRACTOR'S PERSONNEL.

THE CONTRACTOR MAY EXCAVATE UP TO, BUT SHALL NOT DISTURB KNOWN HAZARDOUS MATERIALS SUCH AS ASBESTOS, OILS, ACID, ETC. THE REMOVAL OF ALL HAZARDOUS MATERIALS MUST BE DONE BY A LICENSED HAZARDOUS MATERIALS CONTRACTOR AND IN ACCORDANCE WITH JURISDICTIONAL AGENCY REQUIREMENTS.

LANDSCAPING:

TREE AND PLANT PROTECTION TO CONFORM WITH THE AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) SECTION A300 PART 1 –10 AS APPLICABLE. ANY DEVIATION FROM INDUSTRY APPROVED TREE AND PLANT CARE TO BE CLEARED WITH THE GOVERNING PERMIT AGENCY REPRESENTATIVE AND OR ADJOINING PROPERTY OWNER PRIOR TO ANY PRUNING OR EXCAVATION.

AT NO POINT IN TIME SHALL THE CONTRACTOR REMOVE ANY TREES OR SHRUBS WITH OUT PREVIOUS AUTHORITY FROM THE GOVERNING PERMIT AGENCY.

EXCAVATION IN LAWN AREAS SHALL BE "NEAT LINED" WITH A SOD CUTTER TO ENSURE A SMOOTH MATCH LINE FOR REPAIR WITH APPROVED SOD.

ALL LAWN RESTORATION SHALL BE DONE BY USING SOD PLACED TO THE GROWER/SUPPLIERS SPECIFICATIONS AND ADJACENT PROPERTY OWNER'S SPECIFICATIONS.

SOD USED TO REPAIR EXISTING LAWN AREA SHALL BE OF A BLEND THAT WILL MATCH THE ADJACENT UNDISTURBED LAWN AREA FOR BOTH COLOR AND TEXTURE.

PRIVATE IRRIGATION SYSTEMS ARE OCCASIONALLY LOCATED WITHIN THE PUBLIC RIGHT-OF-WAY OF ADJACENT STREET AREAS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR OPERATION AND REPAIR IF DAMAGE OCCURS DURING HIS CONSTRUCTION ACTIVITY. PRIVATE IRRIGATION SYSTEMS LOCATED ON PRIVATE PROPERTY DAMAGED BY CONSTRUCTION ACTIVITY SHALL BE REPAIRED IMMEDIATELY TO THE OWNER'S SATISFACTION AT NO COST TO THE OWNER.

IN DEVELOPED (PROFESSIONALLY) LANDSCAPED AREAS, NO WORK SHALL BE DONE WITHOUT THE OWNER'S WRITTEN PERMISSION OR AUTHORIZATION.

STRUCTURE PROTECTION:

VAULTS AND CONDUIT TO BE PLACED ADJACENT TO EXISTING STRUCTURES SUCH AS BRIDGE FOOTINGS, PIERS, BUILDING FOUNDATIONS, WALLS, POWER AND TELEPHONE POLES, AND OTHER UTILITIES SHALL MAINTAIN A MINIMUM CLEARANCE AS SHOWN. THE CONTRACTOR SHALL NOT UNDERMINE ANY ADJACENT STRUCTURE WITHOUT SPECIFIC WRITTEN PERMISSION FROM THE OWNER/OPERATOR OF SUCH STRUCTURE.

EXISTING UTILITIES EXPOSED DURING EXCAVATION SHALL BE 100% SUPPORTED BY BOTH TRENCH BRIDGING AND SUSPENSION OR BY THE USE OF LONGITUDINAL TRAYS OR PLATFORMS VERTICALLY SUPPORTED BY ADJUSTABLE BUILDING JACKS.

EXISTING SPLICE CASES AND CABLES SHALL BE SUPPORTED AT A MAXIMUM SPACING OF 4.0 FEET AND SHALL CONSIST OF A CANVAS SLING WITH NYLON BELTING OR ROPE. ALL CABLE SUPPORTS SHALL BE PLACED IN A MANNER THAT PREVENTS KINKS OR OTHER DAMAGE TO THE CABLE SHEATH.

AN ACCEPTABLE ALTERNATIVE TO CABLE SLINGS WOULD BE THE UTILIZATION OF A WIDE FLANGE "I" BEAM OR CHANNEL AS A "CABLE TRAY" WITH THE CABLES/CASES BANDED IN PLACE.

SHORING:

THE CONTRACTOR SHALL PROVIDE SHORING FOR CONDUIT TRENCH EXCAVATION 42" OR MORE IN DEPTH AS MEASURED FROM THE HIGH SIDE OF THE TRENCH AND FOR ALL MANHOLE EXCAVATION.

MANHOLE SHORING SHALL BE TIGHT-SHEETED.

ALL SHORING SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE JURISDICTIONAL PERMIT AGENCY AND THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).

SHORING SHALL BE DESIGNED TO MEET H-20 HIGHWAY LOADING CRITERIA.

THE CONTRACTOR SHALL PROVIDE ALL SHORING AND DESIGN CALCULATIONS TO THE PERMIT ISSUING AGENCY PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITY.

EXISTING UTILITY SERVICES:

ANY UTILITY DAMAGED BY CONSTRUCTION ACTIVITY SHALL BE RETURNED TO FULL SERVICE IMMEDIATELY AND ANY COST OR EXPENSE CONSIDERED TO BE LOST BY THE UTILITY USER SHALL BE THE CONTRACTOR'S RESPONSIBILITY. IN THE EVENT OF ANY DAMAGE TO AN EXISTING UTILITY THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY OWNER AND THE PROJECT MANAGER.

LANDSCAPE AREAS SERVED BY IRRIGATION SYSTEMS SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION BY THE UTILIZATION OF TEMPORARY SOURCES OF IRRIGATION WATER OR BY MAKING TEMPORARY REPAIRS TO THE DAMAGED SYSTEM TO ALLOW ITS SATISFACTORY OPERATION.

SPECIAL UTILITY CLEARANCES:

ALL WORK CONDUCTED ADJACENT TO WATER MAINS, STORM SEWERS, OR SANITARY SEWERS SHALL CONFORM TO THE FOLLOWING CONDITIONS, UNLESS OTHERWISE SPECIFIED BY THE GOVERNING PERMIT AGENCY:

- A. PARALLEL CONDUIT SHALL MAINTAIN A HORIZONTAL SEPARATION OF 5.0 FEET, MEASURED SURFACE TO SURFACE. (OUTSIDE EDGE TO OUTSIDE EDGE)
- B. PERPENDICULAR CONDUIT PASSING UNDER OR OVER UTILITIES MUST MAINTAIN 12" VERTICAL CLEAR SEPARATION.
- C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING THIS REQUIRED VERTICAL SEPARATION BY EITHER EXPOSING THE UTILITY EVERY 100 FEET IN THOSE AREAS WHERE HORIZONTAL SEPARATION IS LESS THAN 5.0 FEET OR BY UTILIZING KNOWN DEPTHS OF ADJACENT FACILITIES. IF THE CONTRACTOR UTILIZES THE ADJACENT FACILITIES TO DETERMINE DEPTH, HE SHALL CONTACT THE GOVERNING AGENCY AT EACH SUCH LOCATION AND THE AGENCY WILL DETERMINE THE NECESSARY DEPTH OF THE TOP OF THE CONDUIT AT THAT POINT.
- D. THE VERTICAL AND HORIZONTAL SEPARATION SHALL BE MAINTAINED AT ALL TIMES UNLESS SPECIFICALLY STATED OTHERWISE BY THE JURISDICTIONAL PERMIT AGENCY. ANY SPECIFIC DEVIATION IN VERTICAL AND HORIZONTAL SEPARATION FROM THOSE DESCRIBED SHALL BE REPORTED TO THE OWNER BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING VERTICAL AND HORIZONTAL SEPARATION AT ALL TIMES AND SHALL BE RESPONSIBLE FOR ANY AND ALL ENCROACHMENTS.

Clackamas Broadband eXchange

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CLACKAMAS BROADBAND EXPRESS
STANDARD PLANS FOR CONSTRUCTION
GENERAL NOTES

CITY: CITY – TOWNSHIP RANGE SECTION:			COUNTY: COUNTY CO., STATE
PLOT DATE: 12/06/2016	SCALE: AS SHOWN	PROJECT NAME--FILENAME.DWG – TAB_SHEET # CBX-DT00.DWG – GN01_1.3	SHEET 1.3

SPECIFICATION SET

PROTECTION OF EXISTING SURVEY MONUMENTS:

THE CONTRACTOR SHALL REPLACE ALL MONUMENTS THAT DEFINE PROPERTY OWNERSHIP SUCH AS IRON RODS, IRON PIPES, BRASS SCREWS, AND REFERENCE POINTS AS REQUIRED BY THE GOVERNING STATE STATUTES. ANY CORNER OR REFERENCE TO A CORNER OF A RECORD OF SURVEY SHALL BE REPLACED BY A LICENSED SURVEYOR WITHIN 90 DAYS OF ITS REMOVAL.

REPLACEMENT MONUMENTS SHALL CONFORM TO STATE STATUTES AS TO TYPE AND STYLE OF IDENTIFICATION WITH THE NECESSARY RECORD OF SURVEY IDENTIFYING WHAT WAS FOUND ORIGINALLY AND WHAT WAS SET AND THE DATE THE REPLACEMENT WAS SET. THE RECORD OF SURVEY SHALL BE COMPLETED IN CONFORMANCE WITH THE REGULATIONS OF THE RELEVANT STATE AND THE JURISDICTIONAL PERMIT AGENCY SURVEYOR.

IT IS THE CONTRACTORS RESPONSIBILITY TO UNDERSTAND AND COMPLY WITH THE JURISDICTIONAL STATUTES SET FORTH BY THE RELEVANT GOVERNING AGENCY.

CONSTRUCTION STAKING:

IN AREAS WHERE THE CONDUIT ALIGNMENT IS NOT CLEARLY DEFINED BY CURB LINES, FENCE LINES, OR OTHER EVIDENCE OF THE RIGHT-OF-WAY, IT IS RECOMMENDED THAT THE CONTRACTOR COORDINATE WITH A PROFESSIONAL SURVEYOR TO PROVIDE STAKING OR PAINT MARKS TO CLEARLY IDENTIFY THE PROPOSED ALIGNMENT.

IF ADDITIONAL FIELD STAKING OF PROPOSED CONDUIT ALIGNMENTS AND VAULT LOCATIONS IS REQUIRED, THE CONTRACTOR IS TO CONTACT THE INSPECTOR AND THE PROJECT DESIGNER TO SCHEDULE A FIELD MEET PRIOR TO CONSTRUCTION.

IF DISCREPANCIES BETWEEN PROFESSIONALLY SURVEYED RIGHT-OF-WAY AND THE PROPOSED ALIGNMENT ARE IDENTIFIED CONTRACTOR IS TO NOTIFY THE REGULATORY PERMIT AGENCY INSPECTOR AND THE PROJECT DESIGNER PRIOR TO CONSTRUCTION.

TRAFFIC CONTROL:

WORK ON ANY PUBLIC OR PRIVATE ROW WITH OR WITHOUT PERMIT THROUGH THE GOVERNING AGENCY MAY REQUIRE ADEQUATE TRAFFIC CONTROL TO PERFORM CONSTRUCTION ACTIVITIES.

TRAFFIC WARNING DEVICES AND SIGNS SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS (U.S. GOVERNMENT PRINTING OFFICE) AND TO THE GOVERNING AGENCY STANDARD SPECIFICATIONS. HIGH LEVEL WARNING TYPE DEVICES ARE TO BE USED AT ALL TIMES AND SPECIAL WARNING DEVICES MAY BE STIPULATED BY THE JURISDICTIONAL PERMIT AGENCY AT ANY TIME THE USE WILL ADD TO THE SAFETY AND PROTECTION OF TRAFFIC OR PEDESTRIANS IN THE CONSTRUCTION AREA.

A TRAFFIC CONTROL PLAN SHALL BE PREPARED BY THE CONTRACTOR AS REQUIRED AND SUBMITTED TO EACH PERMITTING AGENCY REQUESTING SUCH PLAN FOR REVIEW AND APPROVAL OR REVISION PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITY FOR THIS PROJECT. THE APPROVED PLAN SHALL BE SUBMITTED TO THE AGENCY AND A COPY OF THE PLAN SHALL BE KEPT AT THE CONSTRUCTION SITE AND MUST BE READILY AVAILABLE FOR REVIEW BY AGENCY REPRESENTATIVES.

PERMITS – FRANCHISES – EASEMENTS:

PHYSICAL WORK SHALL NOT BE STARTED UNTIL THE GOVERNING AGENCY INSPECTOR AND THE CONTRACTOR ARE IN POSSESSION OF AND HAVE CAREFULLY REVIEWED AND FULLY UNDERSTAND ALL CONDITIONS AND SPECIFICATIONS SET FORTH IN THE REQUIRED PERMITS, FRANCHISES, AND/OR EASEMENTS.

THE PLACING FOREMAN SHALL HAVE A COPY OF THE PERMITS/EASEMENTS ON SITE AT ALL TIMES.

ANY CONFLICT BETWEEN WORK PRINT SPECIFICATIONS AND SPECIFICATIONS SET FORTH UNDER RELATED PERMITS, FRANCHISES, AND/OR EASEMENTS MUST BE CLEARED BY PROPER COMPANY AUTHORITY BEFORE PROGRESSING WITH WORK INVOLVED.

AERIAL NOTES:

ALL AERIAL CONSTRUCTION IS TO BE PERFORMED TO INDUSTRY ACCEPTABLE STANDARDS.

ALL NEW OR EXISTING CABLE HEIGHTS OF ATTACHMENT TO BE DOCUMENTED AT TIME OF CONSTRUCTION.

6.6M STRAND TO BE USED WITH STANDARD 5/8"POLE LINE HARDWARE UNLESS OTHERWISE SPECIFIED. BOND STRAND TO POWER MGN WHERE APPLICABLE.

ALL EXTENSION ARMS TO BE PLACED WILL BE EPOXY ARMS UNLESS OTHERWISE NOTED OR APPROVED BY THE INSPECTOR.

PUPI ARMS TO BE TYPE TB2000 UNLESS OTHERWISE SPECIFIED AND ARE TO BE INSTALLED ACCORDING TO THE POLE OWNER SPECIFICATIONS OR MANUFACTURER SPECIFICATIONS. POLE OWNER SPECIFICATIONS MAY SUPERSEDE MANUFACTURER SPECIFICATION FOR INSTALLATION AS REQUIRED. TYPICAL INSTALLATION INCLUDES UTILIZING TWO (2) THROUGH BOLTS AND NO LAG BOLTS.

ALL ANCHORS TO BE USED WILL BE 3/4 SCREW IN TYPE.

ALL STRAPS WILL BE PLACED 4" BEFORE AND AFTER EVERY SUPPORTING CLAMP AT A MINIMUM OF 21" APART. REPAIR / REPLACE EXISTING LASHING WIRE IF DAMAGED, AND ADD ANY MISSING GROUNDS.

CONTRACTOR TO PLUG ALL VACATED HOLES FROM ABANDONED OR RELOCATED ATTACHMENTS PER POLE OWNER SPECIFICATIONS.

IT IS THE CONTRACTORS RESPONSIBILITY TO MAINTAIN AND FOLLOW NATIONAL ELECTRIC SAFETY CODE ALONG WITH APPLICABLE LOCAL AND REGIONAL GOVERNING AUTHORITIES. ANY DISCREPANCIES BETWEEN THESE AUTHORITIES AND OR THE CONSTRUCTION PRINTS IS TO BE VALIDATED WITH THE DESIGNER OR OWNER PRIOR TO CONSTRUCTION.

CONDUITS:

ALL DIRECT BURIED CONDUIT SHALL BE PVC HEAVY WALL (SCH 40) OR HDPE SDR11 DIRECT BURIAL UNLESS OTHERWISE SPECIFIED.

CONTRACTOR SUPPLIED MATERIALS SHALL CONFORM TO THE JURISDICTIONAL PERMIT AGENCY AND OWNER SPECIFICATIONS.

ALL CONTRACTOR SUPPLIED MATERIALS SHALL INCLUDE A CERTIFIED TEST REPORT CLEARLY STATING THAT THOSE SUPPLIED MATERIALS COMPLY WITH ANY SUCH SPECIFICATION.

ALL CONDUIT IS TO BE PLACED IN THE LOCATION SHOWN ON THE DESIGN PRINTS WITH MINIMUM COVER OF 36 INCHES OR AS NOTED ON THE DRAWINGS OR SPECIFIED BY THE REGULATORY PERMIT AGENCY.

THE TOTAL LENGTH OF TRENCH OPEN AT ANY ONE TIME IS TO BE KEPT TO A MINIMUM.

ALL HDPE CONDUITS ENTERING VAULTS SHALL HAVE A MINIMUM 5.0 FOOT STRAIGHT SECTION OF SCH 40 PVC CONDUIT SLEEVE. THIS STRAIGHT SECTION SHALL BE PERPENDICULAR TO THE WALL OF SAID MANHOLE AND SHALL BE SMOOTH AND FREE OF ALL BURRS AND OTHER FEATURES THAT MAY DAMAGE CABLES. PLUGS SHALL BE UTILIZED TO ORGANIZE, SECURE AND SEAL THE HDPE CONDUITS WITHIN THE SLEEVE AS THEY ENTER THE VAULT.

ALL PVC OR HDPE CONDUITS ARE TO BE PLUGGED WITH COMPRESSION STYLE PLUGS. ANY CONDUITS CONTAINING FIBER CABLES WILL REQUIRE SIMPLEX COMPRESSION PLUGS SEALING THE CONDUIT AROUND THE CABLE.

CASINGS:

ANY REQUIRED STEEL CASING PIPE SHALL BE 100% FILET WELD (3/16") OR THREADED COUPLING. IF WELDED THE CONTRACTOR SHALL PROVE THE INTERIOR DIMENSION BY PULLING A MANDREL COMPLETELY THROUGH THE WELDED JOINT IN BOTH DIRECTIONS. PIPE JOINTS SHALL BE STEEL BRUSHED AND PAINTED WITH A ZINC RICH FLAT BLACK METAL PRIMER PAINT.

VAULTS / HANDHOLES:

ALL VAULTS TO BE UTILITY VAULT PRECAST TYPE 444--LA UNLESS OTHERWISE SPECIFIED. 444--LA VAULTS ARE TO BE FULLY EQUIPPED WITH LADDERS, CABLE RACKS, SUPPORTS, AND PULLING IRONS AS SHOWN BELOW:

(4) "L" BRACKETS
(4) 8 HOLE – 113/4" CUT RACKS
(4) SPRING NUT & SCREWS – (1/2" NUT, 1/2" X 1 1/4" PLATED CAP SCREW)

MOUNT BRACKETS ON 2' GALVANIZED "C" CHANNELS, 2 EA. SIDE, 18" APART

ALL VAULTS SHALL HAVE A SUMP CAST IN PLACE FOR DE--WATERING

GROUND COVER OVER ALL VAULTS SHOULD BE 36" MINIMUM DEPTH BELOW FINISHED STREET OR SIDEWALK ELEVATION UNLESS OTHERWISE SPECIFIED IN THE VAULT DETAILS OR ON ANY RIGHT-OF-WAY PERMIT ISSUED. IN ADDITION, DEPTH OF COVER OVER MANHOLES SHALL NOT EXCEED 60" OF COVER TO THE TOP OF THE VAULT OR PER VAULT MANUFACTURER'S SPECIFICATIONS.

EXCAVATION OVER VAULTS IS CONSIDERED PART OF THE TOTAL VAULT INSTALLATION.

IF ANY FIELD SLOTTING OF PRECAST CONCRETE VAULTS IS REQUIRED TO PROVIDE ACCESS FOR CABLES AND CONDUIT NOT PROVIDED WITH A BLOCKOUT FOR THAT PURPOSE; THE FIELD SLOT SHALL BE REPAIRED BY SPLICING ANY REINFORCING REBAR THAT HAS BEEN CUT TO ALLOW CABLE ENTRY AND SHALL BE SEALED WITH NON--SHRINK CONCRETE GROUT. THE CONTRACTOR SHALL NOTIFY OWNER IMMEDIATELY IF IT BECOMES EVIDENT FIELD SLOTTING WILL BE NECESSARY. FIELD SLOTS SHALL BE SAWCUT (SCORED INSIDE AND OUT) AND BRUSH HAMMER TO PROVIDE A ROUGHENED SURFACE FOR GROUT BONDING AND TO MINIMIZE REINFORCING SPLICES.

EXCAVATION FOR ALL PRECAST VAULTS AND HANDHOLES MUST ALLOW FOR OVERALL ASSEMBLED HEIGHT OF THE VAULT PLUS ADDED HEIGHT OF RISERS AND BEDDING MATERIAL CONSISTING OF 6" OF COMPACTED SAND OR GRAVEL, GRADED LEVEL. A MINIMUM EXCAVATION CLEARANCE OF 4" AROUND THE SIDEWALLS OF THE VAULT IS REQUIRED FOR EASE OF INSTALLATION.


BACKFILL AROUND ALL VAULTS SHOULD CONSIST OF COMPACTED SELECT BACKFILL MATERIAL OR IN ACCORDANCE WITH AGENCY SPECIFIED BACKFILL. IN NO CASE SHALL THE MATERIAL BE SATURATED SOIL, OR CONTAIN LARGE ROCKS OR CHUNKS. NO VOIDS SHOULD REMAIN BETWEEN THE VAULT WALLS AND NATIVE SOIL OF EXCAVATION. BACKFILLING SHOULD NOT BE DONE UNTIL THE VAULT IS COMPLETELY ASSEMBLED MAKING CERTAIN TO COMPACT THE BACKFILL PROGRESSIVELY IN 12" LIFTS FROM THE BOTTOM TO THE TOP SURFACE. WHEN USING MECHANICAL VIBRATORY EQUIPMENT TO OBTAIN 95% COMPACTION NEAR COMPOSITE VAULTS AND HANDHOLES, CONTRACTOR IS TO PLACE INTERNAL CROSS--BRACING PER MANUFACTURER SPECIFICATIONS.

ALL BACKFILLING IS THE RESPONSIBILITY OF THE CONTRACTOR.

ALL GROUTING OF RISERS, COVERS, CONDUIT, OR SPECIFIC SECTIONS OF VAULTS IS THE RESPONSIBILITY OF THE CONTRACTOR. NON--SHRINK CONCRETE GROUT WILL BE USED TO SEAL ALL JOINTS AND APPLIED IN A MANNER TO ENSURE COMPLETE FILLING OF VOIDS IN THE JOINT BEING SEALED.

ACCESS DOORS SHALL BE CONSTRUCTED OF STEEL, ALUMINUM, OR CONCRETE WITH AN APPROVED NON--SLIP SURFACE HAVING A STATIC COEFFICIENT OF FRICTION BETWEEN 0.60 AND 1.00 AS DETERMINED BY ASTM DESIGNATION C 1028--89. ACCESS DOORS ON INCLINED SURFACES GREATER THAN 4 % SHALL HAVE A COEFFICIENT OF FRICTION BETWEEN 0.80 AND 1.00.

OWNERS ARE RESPONSIBLE TO MAINTAIN THE NON--SLIP CHARACTERISTICS OF THE ACCESS DOOR OVER ITS LIFE IN THE SIDEWALK AREA.



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CLACKAMAS BROADBAND EXPRESS
STANDARD PLANS FOR CONSTRUCTION
GENERAL NOTES

CITY: CITY – TOWNSHIP RANGE SECTION: COUNTY: COUNTY CO., STATE

PLOT DATE: 12/06/2016	SCALE: AS SHOWN	PROJECT NAME--FILENAME.DWG – TAB_SHEET # CBX--DT00.DWG – GN02_1.4	SHEET 1.4
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SPECIFICATION SET

EXISTING MANHOLE ACCESS:

THE CONTRACTOR SHALL CORE DRILL EXISTING CONCRETE WALLS TO PROVIDE ACCESS FOR CONDUIT AS SHOWN IN THE PLANS. CORE DRILLING SHALL PROVIDE A MINIMUM 1 INCH LARGER DIAMETER HOLE THAN THE SIZE OF CONDUIT BEING PLACED. THE CONTRACTOR SHALL SEAL THE VOID BETWEEN THE CONDUIT AND THE CONCRETE WITH NON-SHRINK EPOXY GROUT.

THE CONTRACTOR SHALL REPAIR ANY STRUCTURAL REINFORCING DAMAGED BY CORE DRILLING. REINFORCING REPAIR SHALL BE IN CONFORMANCE WITH THE REQUIREMENTS AND SPECIFICATIONS OF CRSI (CONCRETE REINFORCED STEEL INSTITUTE).

IF THE CONTRACTOR ELECTS TO ADJUST AN ACCESS HOLE IN WHICH REINFORCING WAS FOUND TO AVOID DAMAGE TO THE REINFORCING STEEL HE SHALL FULLY EXPOSE THE SURFACE OF THE REBAR AND FIELD COAT THE BAR WITH A ZINC RICH PAINT BEFORE PLACING NON-SHRINK EPOXY GROUT TO REPAIR DAMAGE.

LOCATORS AND MARKERS:

THE CONTRACTOR IS RESPONSIBLE FOR PLACING APPROPRIATE MARKERS TO INSURE THAT OTHER UTILITIES WORKING IN THE AREA OF OWNER FACILITIES ARE AWARE OF THEIR PRESENCE BEFORE DAMAGE CAN OCCUR. MARKING WILL BE MADE BY USE OF "WARNING TAPE" AND "POST MARKERS" FOR CONDUIT, AND 3M ELECTRONIC MARKER SYSTEM (EMS) LOCATORS FOR VAULTS AND HANDHOLES.

"WARNING TAPE" SHOULD BE PLACED A MINIMUM OF 12" ABOVE ANY CONDUIT ALONG THE ENTIRE TRENCH ROUTE, WHILE ADDITIONALLY "POST MARKERS" SHOULD BE PLACED EVERY 500' IN SUBURBAN AREAS AND 1000' IN RURAL AREAS.

BOTH VAULTS AND HANDHOLES ARE TO BE EQUIPPED WITH EMS LOCATORS. VAULTS AND HANDHOLES SHALL HAVE EMS MARKERS INSTALLED SECURED ON THE WALL AT THE TOP TO EASE LOCATING.

LOCATE WIRE AND BONDING:

ALL UNDERGROUND TELECOMMUNICATIONS INFRASTRUCTURE CONDUIT SHALL HAVE A #12 AWG HDPE 30 MIL COPPER STRANDED LOCATE WIRE PLACED INSIDE OR ALONG THE CONDUIT ALIGNMENT UNLESS SPECIFIED OTHERWISE BY THE GOVERNING PERMIT AGENCY.

ALL LOCATE WIRE SHALL BE EFFECTIVELY GROUNDED PER INDUSTRY ACCEPTABLE STANDARDS. T-3 LOCATE WIRE ACCESS TERMINALS OR APPROVED EQUIVALENT SHALL BE INSTALLED AT VAULT/HANDHOLE LOCATIONS FOR TERMINATION OF LOCATE WIRE AND HAVE SUFFICIENT ACCESS FOR THE EASE OF LOCATING FACILITIES. LOCATE WIRE TERMINALS ARE TO BE MOUNTED ON AN ACCESSORY ANGLE BRACKET ON THE INTERIOR RISER / WALL OF A CONCRETE VAULT OR INTERIOR WALL OF A FIBERGLASS / COMPOSITE VAULT.

ALL NEW UTILITY VAULT OR HANDHOLE INSTALLATIONS SHALL REQUIRE THE INSTALLATION OF A 5/8" COPPER CLAD GROUND ROD IN OR THROUGH THE BOTTOM OF THE VAULT USING CAUTION NOT TO DAMAGE EXISTING SUBSTRUCTURE. GROUND ROD SHALL BE OF PROPER LENGTH AND PLACEMENT TO ACHIEVE AN EFFECTIVE ELECTRICAL GROUND PER NEC / NESC AND THE GOVERNING PERMIT AGENCY. #6 AWG COPPER WIRE IS TO BE PLACED FROM THE GROUND ROD TO THE GROUND LUG ON THE T-3 LOCATE WIRE TERMINAL. ALL #12 AWG LOCATE WIRE ENTERING VAULTS OR HANDHOLES SHALL BE TERMINATED TO THE T-3 LOCATE WIRE ACCESS TERMINAL USING MANUFACTURER SUPPLIED BINDING POSTS. BONDING STRAPS ARE TO BE INSTALLED BETWEEN ALL #12 BINDING POSTS AND THE #6 GROUND LUG EFFECTIVELY GROUNDING ALL LOCATE WIRE WITHIN THE STRUCTURE.

LOCATE WIRE PLACED THROUGH CONDUIT RISERS WHEN TRANSITIONING FROM UNDERGROUND TO AERIAL ON UTILITY POLES SHALL BE BONDED TO THE MGN ON THE POLE NEAR THE TOP OF THE RISER. IF NO MGN IS PRESENT A NEW #6 AWG VERTICAL GROUND AND 5/8" COPPER CLAD GROUND ROD SHALL BE PLACED PER NESC / NEC GUIDELINES TO ACCOMMODATE EFFECTIVE GROUNDING.

PRIOR TO TOUCHING, WORKING OR CONNECTING LOCATING EQUIPMENT TO LOCATE WIRE, THE SYSTEM MUST BE TESTED FOR INDUCED VOLTAGE. INSTALL FILTER PROTECTOR / ARRESTOR AS REQUIRED ON ONE OR BOTH LOCATE WIRES IF INDUCED VOLTAGE EXCEEDS 50VAC.

*ALL LOCATE WIRE TERMINATION AND BONDING OF CONDUCTIVE MATERIALS TO BE IN ACCORDANCE WITH THE LATEST VERSION OF THE NATIONAL ELECTRIC SAFETY CODE AND THE NATIONAL ELECTRIC CODE.

BUILDING CONSTRUCTION:

ALL WORK SHALL BE DONE IN A "NEAT AND WORKMAN" LIKE MANNER, IN CONFORMITY WITH LOCAL, STATE AND FEDERAL BUILDING CODES. ALL WORK MUST COMPLY WITH APPLICABLE DATA SYSTEM STANDARDS AND NATIONAL ELECTRIC CODE STANDARD SPECIFICATIONS. STANDARDS INCLUDE, BUT ARE NOT LIMITED TO, EIA/TIA 568-B COMMERCIAL BUILDING WIRING STANDARDS AND EIA/TIA 569-A COMMERCIAL BUILDING STANDARD FOR TELECOMMUNICATIONS PATHWAYS AND SPACES.

AS-BUILT DATA – METHOD OF PROCEDURE:

UPON NOTIFICATION OF COMPLETION OF THE WORK AND ACCEPTANCE BY THE OWNER, THE CONTRACTOR SHALL PROVIDE THE PROJECT MANAGER WITH A SET OF NEAT AND ACCURATE "AS-BUILT" DRAWINGS WITHIN 10 BUSINESS DAYS OF COMPLETION OF THE PROJECT.

AS-BUILT DATA SHALL BE UPDATED AND MAINTAINED DAILY ON FIELD COPY DRAWINGS FOR THE DURATION OF CONSTRUCTION. UPON COMPLETION OF THE PROJECT, THE AS-BUILT DATA SHALL BE TRANSFERRED TO A CLEAN SET OF CONSTRUCTION DRAWINGS FOR SUBMITTAL TO THE PROJECT MANAGER.

THE AS-BUILT DATA SHALL BE DETAILED ON THE DRAWINGS IN EITHER COLORED INK OR COLORED PENCIL ACCORDING TO THE FOLLOWING COLOR CODES:

RED: WORK PLACED ACCORDING TO DESIGN AND CHANGES TO THE DESIGN
GREEN: WORK NOT PLACED ACCORDING TO THE DESIGN; OMIT FROM DESIGN
BLUE: EXISTING UTILITIES, FACILITIES, COMMENTS AND NOTES

- 1) WORK PERFORMED ACCORDING TO THE DESIGN SHALL BE HIGHLIGHTED OR LOCATED IN RED.
- 2) WORK PERFORMED ACCORDING TO APPROVED CHANGES OR VARIATIONS TO THE DESIGN SHALL BE NEATLY DRAWN AND DETAILED ON THE DRAWINGS SHOWING HOW THE CHANGES WERE CONSTRUCTED IN THE FIELD.
- 3) WORK THAT WAS DESIGNED BUT NOT PERFORMED AS SHOWN ON THE DRAWINGS SHALL BE HIGHLIGHTED OR LOCATED IN GREEN TO SHOW THAT THE WORK FUNCTION WAS NOT CONSTRUCTED AS DESIGNED.
- 4) EXISTING FACILITIES OR UTILITIES ENCOUNTERED; CONSTRUCTION NOTES; ADDITIONAL CONSTRUCTION RELATED INFORMATION IDENTIFIED IN THE FIELD SHALL BE NEATLY DRAWN AND DETAILED IN BLUE.

COLORED HIGHLIGHTER PENS ACCORDING TO THE COLOR CODES AS DETAILED ABOVE ARE ACCEPTABLE. FLUORESCENT YELLOW HIGHLIGHTER PENS ARE NOT AN ACCEPTABLE FORM OF AS-BUILT COLORING.

AS-BUILT DRAWINGS SHALL CONTAIN THE FOLLOWING DATA AT A MINIMUM FOR EACH OF THE FOLLOWING WORK FUNCTIONS:

AERIAL SEGMENTS:

- 1) POINT OF ATTACHMENT HEIGHT FROM THE GROUND TO THE CABLE AND/OR STRAND ON ALL POLES.
- 2) CABLE FOOTAGE (SEQUENTIAL) MARKINGS AT ALL CABLE ENDS; START AND END OF SLACK STORAGE AND CONDUIT ENTRANCE / EXIT POINTS.
- 3) LOCATION OF ALL SLACK STORAGE AND CABLE SPLICE POINTS.
- 4) ANCHOR AND DOWN GUY SIZE PLACED AND LEAD LENGTH BETWEEN THE ANCHOR AND THE POLE.

UNDERGROUND SEGMENTS:

- 1) DEPTH OF CONDUIT MEASURED EVERY 25 FEET AND AT EVERY CHANGE IN DIRECTION ALONG THE CONDUIT ALIGNMENT.
- 2) OFFSET DISTANCE MEASURED EVERY 25 FEET AND AT EVERY CHANGE IN DIRECTION FROM THE ALIGNMENT TO A CURB, EDGE OF PAVEMENT OR OTHER PHYSICAL REFERENCE OBJECT.
- 3) LOCATION AND DEPTH OF VAULTS, HAND HOLES AND JUNCTION BOXES PLACED.
- 4) DEPTH, TYPE AND DIRECTION OF ANY EXISTING UTILITY ENCOUNTERED CROSSING THE CONDUIT ROUTE.
- 5) LOCATION OF MAGNETIC LOCATING TARGETS PLACED.
- 6) CABLE FOOTAGE (SEQUENTIAL) MARKINGS AT ALL CABLE ENDS, START AND END OF SLACK STORAGE, CONDUIT ENTRANCE / EXIT POINTS.
- 7) ACTUAL QUANTITY OF CABLE SLACK STORAGE LEFT IN VAULT LOCATIONS.
- 8) ACTUAL WALL TO WALL MEASUREMENTS OF CONDUIT SEGMENTS BETWEEN VAULTS.
- 9) PROVIDE DETAILED VAULT BUTTERFLY DRAWINGS INCLUDING CONDUIT ENTRY AND EXIT LOCATIONS; CONDUIT SIZE & TYPE; CABLE ROUTING; CABLE COILS; SPLICE CASES; RACKING; LOCATE WIRES; LOCATE TERMINALS; GROUND RODS; GROUNDING; AND GENERAL ORIENTATION.

AS-BUILT DATA – METHOD OF PROCEDURE:

DIRECTIONAL BORING:

- 1) DEPTH OF CONDUIT MEASURED EVERY 10 FEET WITH A RUNNING LINE OFFSET DISTANCE FROM A CURB, EDGE OF PAVEMENT OR OTHER PHYSICAL REFERENCE OBJECT.
- 2) BORE PLAN AND PROFILE DRAWING REFLECTING THE DEPTH AND RUNNING LINE OFFSET MEASUREMENT EVERY 10 FEET THROUGHOUT THE ENTIRE LENGTH OF THE BORE; DETAIL BORE PROFILES WITH DEPTH AND LOCATION OF ALL VISUALLY VERIFIED UTILITIES (I.E. ALL POT-HOLED UTILITIES EXPOSED ALONG THE BORE ALIGNMENT)

- 3) AS-BUILT DRAWINGS SHALL HAVE THE WORDS "AS-BUILT" WITH THE NAME OF THE CONTRACTOR AND THE DATE STAMPED ON EVERY SHEET IN THE DRAWING PACKAGE.

ANY CHANGES OR DEVIATIONS FROM THE CONSTRUCTION DRAWINGS MUST BE APPROVED BY THE PROJECT MANAGER OR THE OWNER PRIOR TO MAKING ANY OF THE SAID CHANGES OR DEVIATIONS.

PHOTO DOCUMENTATION:


ALL UNDERGROUND VAULTS; JUNCTION BOXES, CONDUIT INFRASTRUCTURE; TRENCHES; EXCAVATIONS; AND RESTORATION TO BE CLEARLY PHOTOGRAPHED BEFORE, DURING AND AFTER CONSTRUCTION TO VERIFY THAT CONSTRUCTION PROCEDURES ARE MET. FACILITY ENTRANCES, PULL BOXES, CABLE RACEWAYS, SPLICE CASES, SPLICE TRAYS, TERMINATION RACKS AND OTHER EQUIPMENT OR ELECTRONICS INSTALLED BY CONTRACTOR TO BE PHOTOGRAPHED AT THE TIME OF INSTALLATION TO ENSURE PROPER PROCEDURES ARE MET AND TO PROVIDE ADEQUATE DOCUMENTATION TO SERVE AS ASBUILT RECORD.

GENERAL SPECIFICATIONS DISCLAIMER

THE INFORMATION CONTAINED IN THESE SPECIFICATIONS PROVIDES GENERAL GUIDELINES NECESSARY TO FACILITATE THE INSTALLATION OF COMMUNICATIONS INFRASTRUCTURE. ANY DISCREPANCIES BETWEEN THESE SPECIFICATIONS AND THE LOCAL GOVERNING AUTHORITY OR PERMIT AGENCY IS TO BE VALIDATED WITH THE DESIGNER OR OWNER PRIOR TO CONSTRUCTION. WHERE DETAILS ARE SHOWN, THEY ARE PROVIDED AS A REFERENCE FOR PLACEMENT OF COMMUNICATIONS INFRASTRUCTURE AND ACCEPTABLE INDUSTRY STANDARDS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE INSTALLATION OF ALL INFRASTRUCTURE MEETS THE APPLICABLE LOCAL, REGIONAL AND NATIONAL BUILDING CODES AND SAFETY STANDARDS. COMMSTRUCTURE CONSULTING, LLC. DOES NOT ASSUME LIABILITY FOR THE NEGLIGENCE OF THE INSTALLATION CONTRACTOR AND THEIR ABILITY TO PERFORM ANY ASPECT OF THE WORK HEREIN ACCORDING TO THESE STANDARDS.

REFERENCES:

- EIA/TIA COMMERCIAL BUILDING WIRING STANDARD, 606 AND ALL RECOGNIZED TSBS.
- NATIONAL ELECTRIC SAFETY CODE
- UNDERWRITER’S LABORATORIES (UL): APPLICABLE LISTINGS AND RATINGS
- 1) ALL CONDUIT PLACED ON PRIVATE PROPERTY IS TO BE SCH 40 PVC IF PLACED OUTSIDE THE BUILDING AND EMT IF PLACED WITHIN THE BUILDING. RISER CONDUIT ON THE EXTERIOR OF BUILDING IS TO BE GRC UNLESS OTHERWISE SPECIFIED.
- 2) ALL CONDUIT IS TO BE EQUIPPED WITH INNERDUCT AS SPECIFIED.
- 3) 90 BENDS ARE TO BE "SWEEP" BENDS, 3' RADIUS, UNLESS OTHERWISE SPECIFIED.
- 4) CONDUIT PATHWAYS WITHIN BUILDING INTERIORS SHALL BE SUPPORTED WITH APPROPRIATE HARDWARE SPECIFIC TO THE EXISTING MATERIAL OR STRUCTURE.
- 5) ALL EXTERIOR WALL PENETRATIONS ARE TO BE RESEALED PER BUILDING AND FIRE CODE.
- 6) ALL INTERIOR WALL PENETRATIONS ARE TO COMPLY WITH PERTINENT BUILDING AND FIRE CODES AND ARE TO BE CONSTRUCTED IN SUCH A MANNER AS TO INSURE THE INTEGRITY OF THE PENETRATED WALL.
- 7) ALL PULL BOXES ARE TO BE NEMA TYPE 3R OR EQUIVALENT.
- 8) NOTIFY THE "BUILDING CONTACT" PERSON A MINIMUM OF 48 HOURS PRIOR TO COMMENCING ANY WORK ON THE PREMISES.



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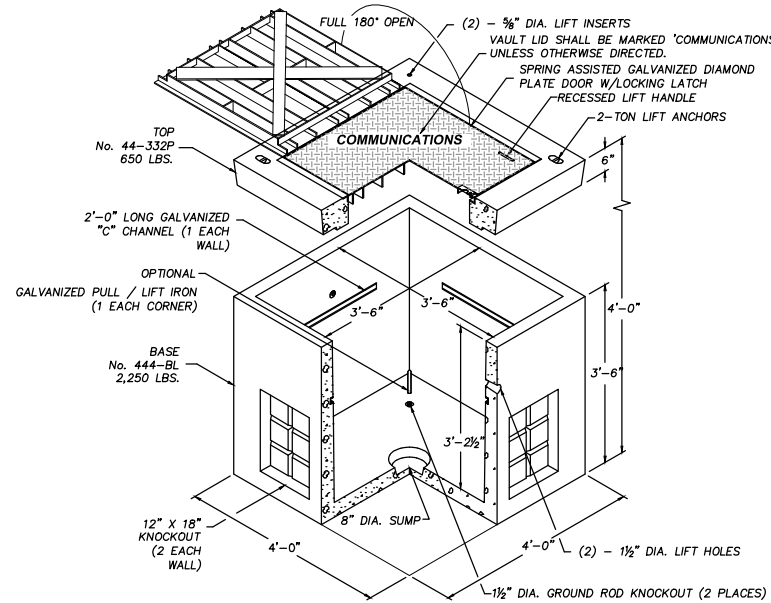
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CLACKAMAS BROADBAND EXPRESS
STANDARD PLANS FOR CONSTRUCTION
GENERAL NOTES

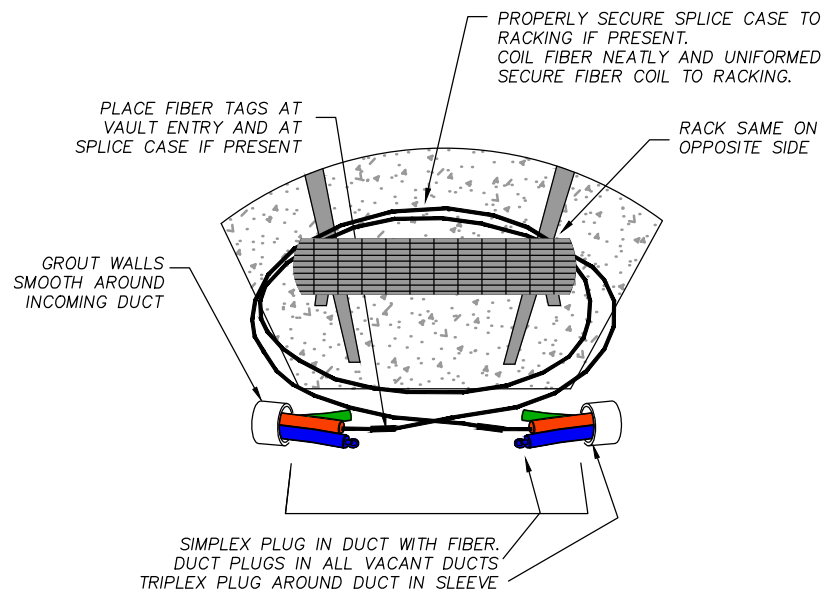
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PLOT DATE: 12/06/2016	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG – TAB_SHEET # CBX-DT00.DWG – GN03_1.5	SHEET	1.5

SPECIFICATION SET



(SIDEWALK / INCIDENTAL TRAFFIC LOC.)
UTILITY VAULT PRE-CAST 444-LA

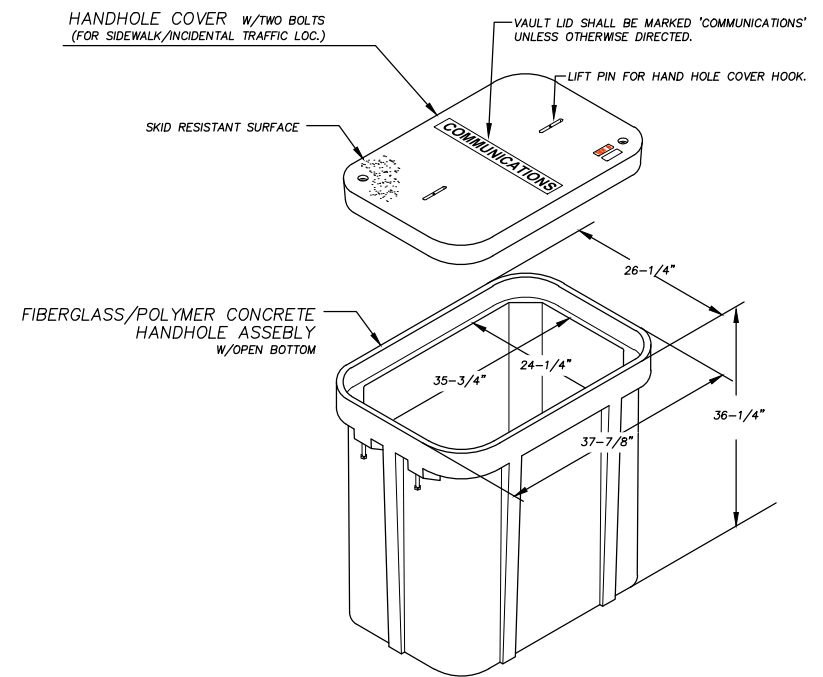
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VAULT SHALL BE FREE OF DIRT AND DEBRIS.

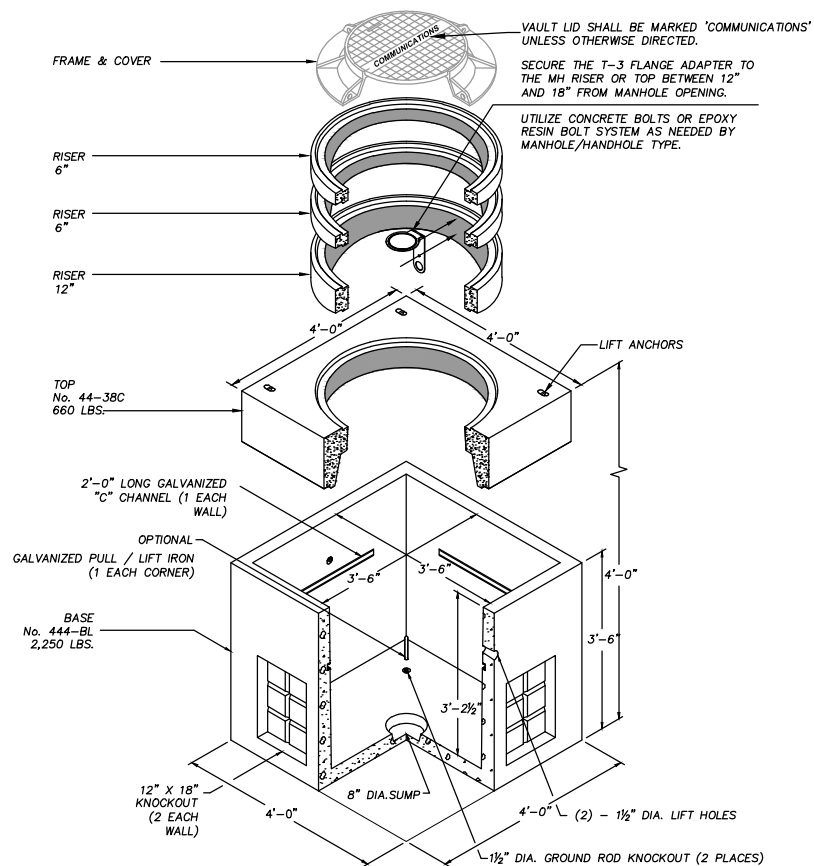
TYPICAL VAULT INTERIOR DETAIL

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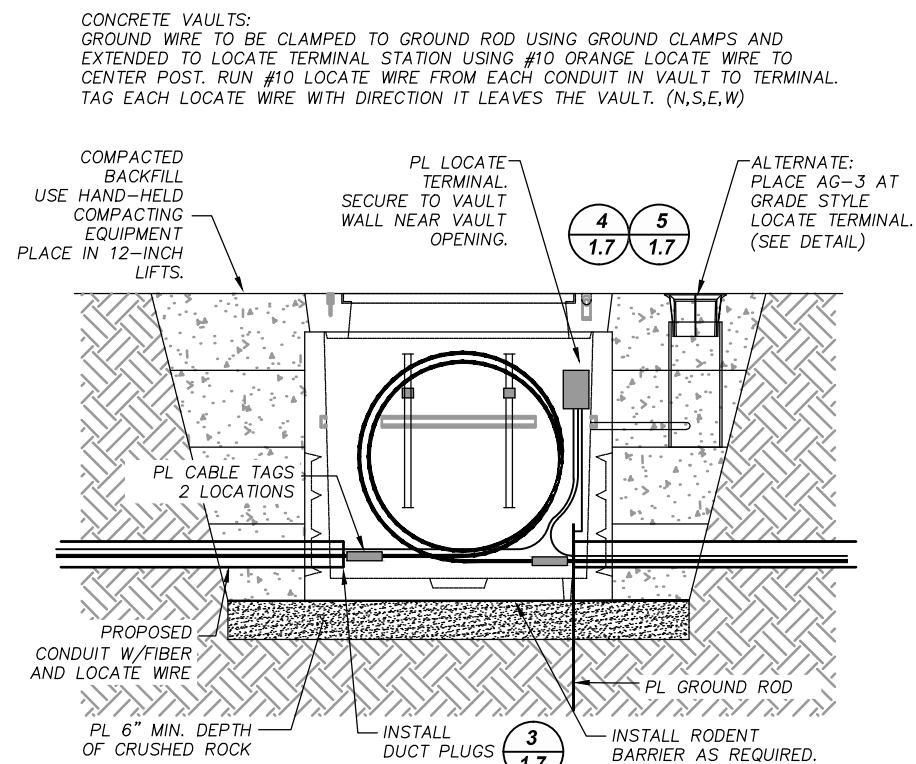
OPEN BOTTOM HANDHOLE

SCALE: (ADDITIONAL DETAILS SEE 3.1/1.6)



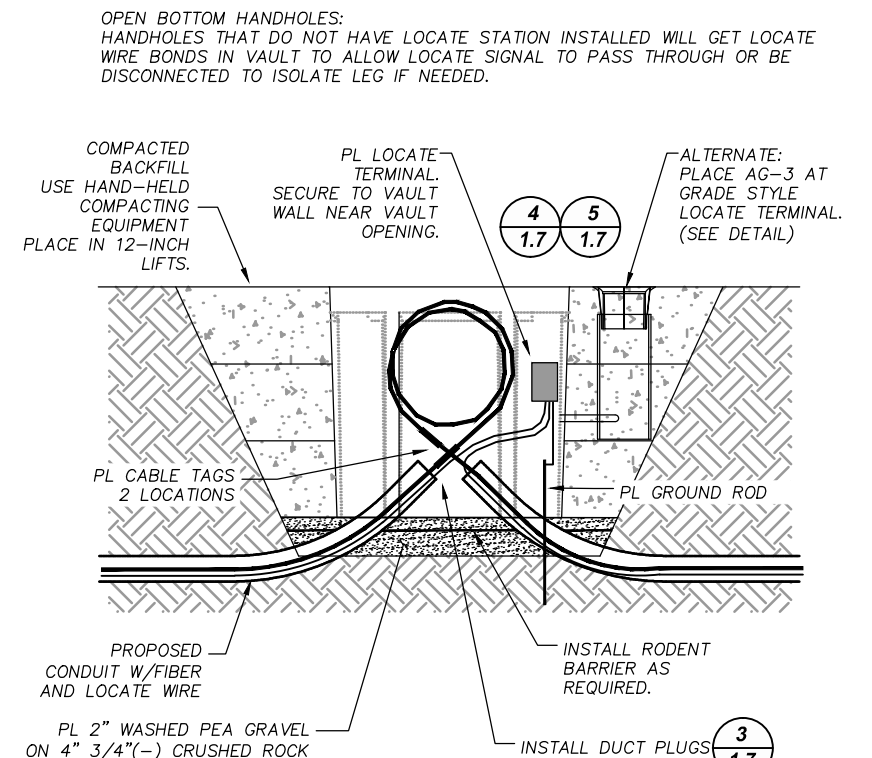
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UTILITY VAULT PRE-CAST 444-LA

SCALE: (ADDITIONAL DETAILS SEE 1.1/1.6 & 4/1.6)



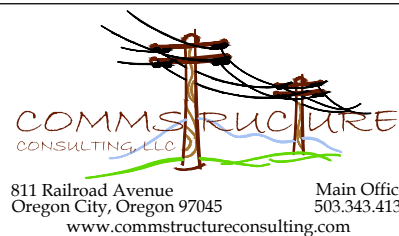
**VAULT SECTION INTERIOR DETAIL
UTILITY VAULT PRE-CAST MANHOLE**

SCALE: (ADDITIONAL DETAILS SEE 4/1.7 & 5/1.7)



**VAULT SECTION INTERIOR DETAIL
OPEN BOTTOM HANDHOLE**

SCALE: (ADDITIONAL DETAILS SEE 4/1.7 & 5/1.7)



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CLACKAMAS BROADBAND EXPRESS STANDARD PLANS FOR CONSTRUCTION VAULT DETAILS

CITY: CITY - TOWNSHIP RANGE SECTION:

PLOT DATE:
12/06/2016

SCALE:

AS SHOWN

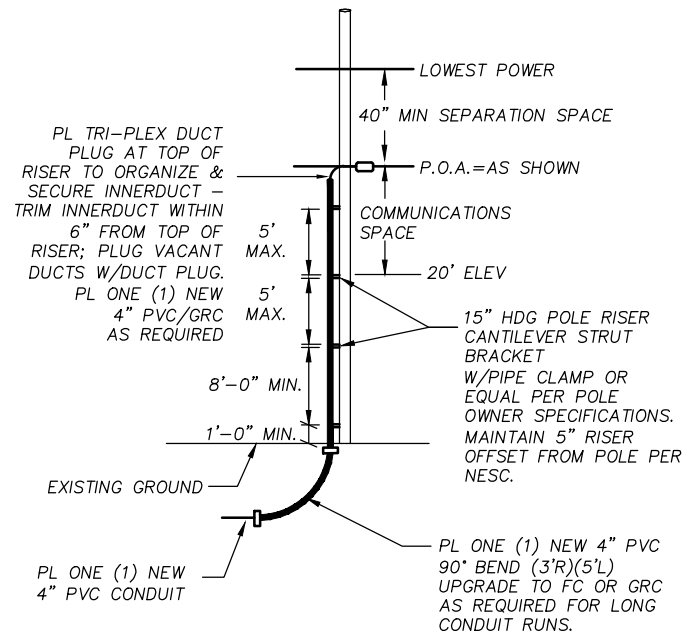
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CBX-DT00.DWG - DT01 1.6

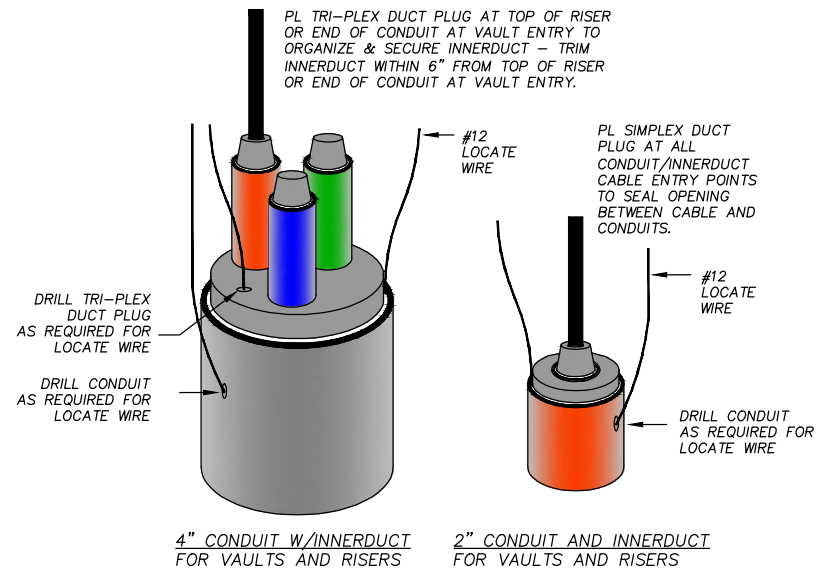
COUNTY: COUNTY CO., STATE

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SPECIFICATION SET

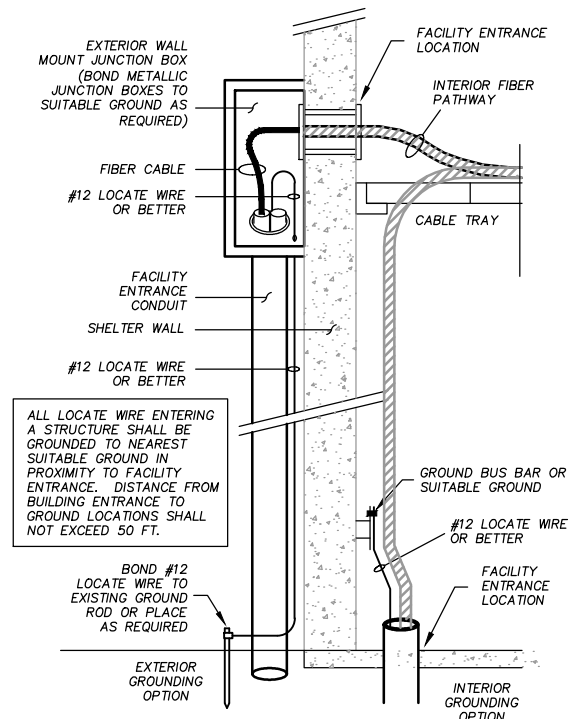


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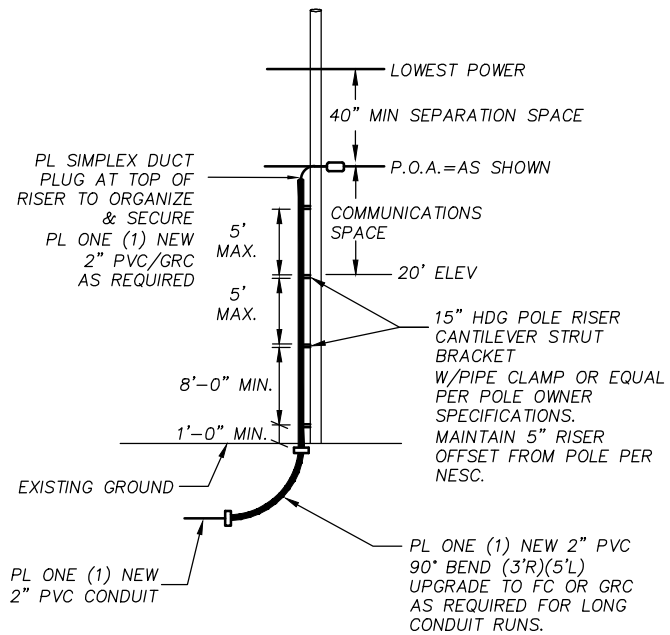
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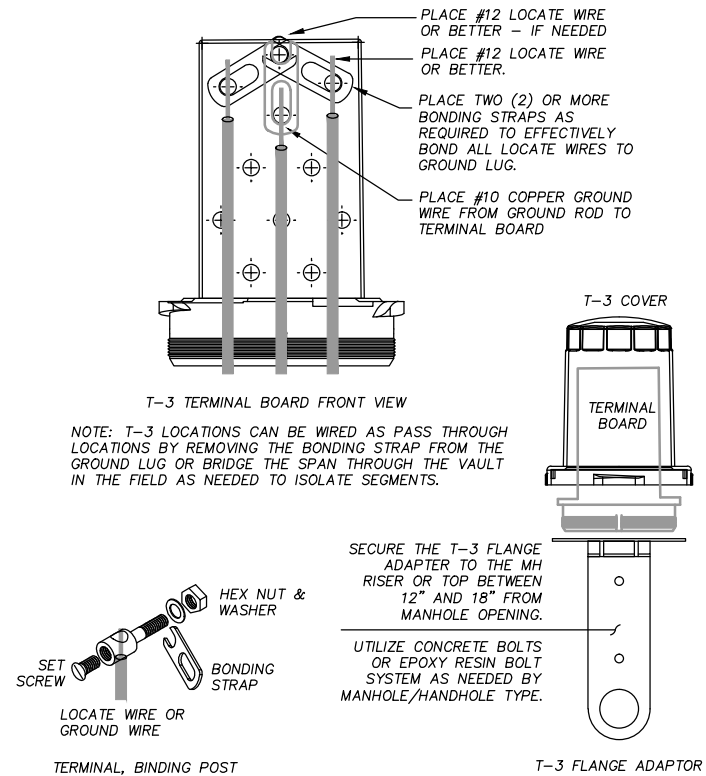


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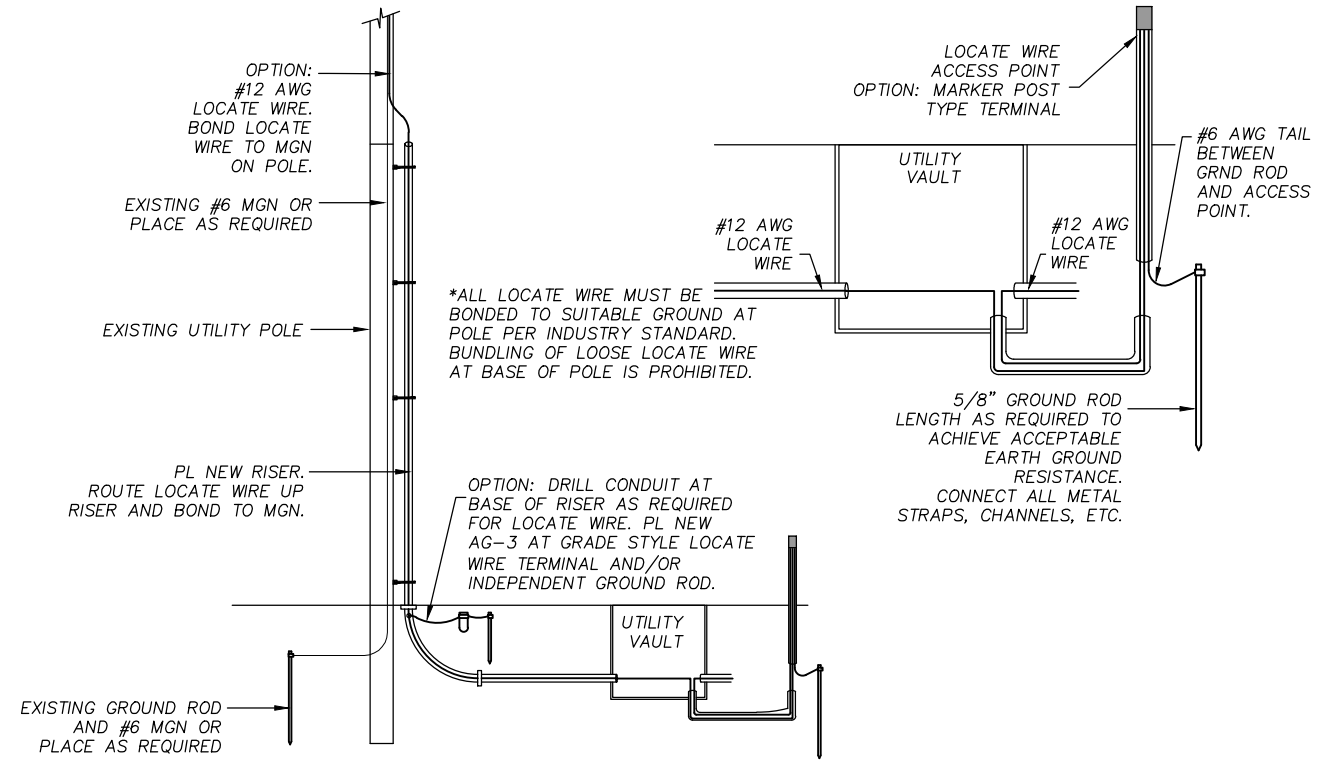
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SCALE: (ADDITIONAL DETAILS SEE 3/1.7 & 5/1.7)

$$\frac{2}{1.7}$$


SCALE: 1" = N.T.S.

$$\frac{4}{1.7}$$


SCALE: 1" = N.T.S.

$$\frac{3}{1.7}$$


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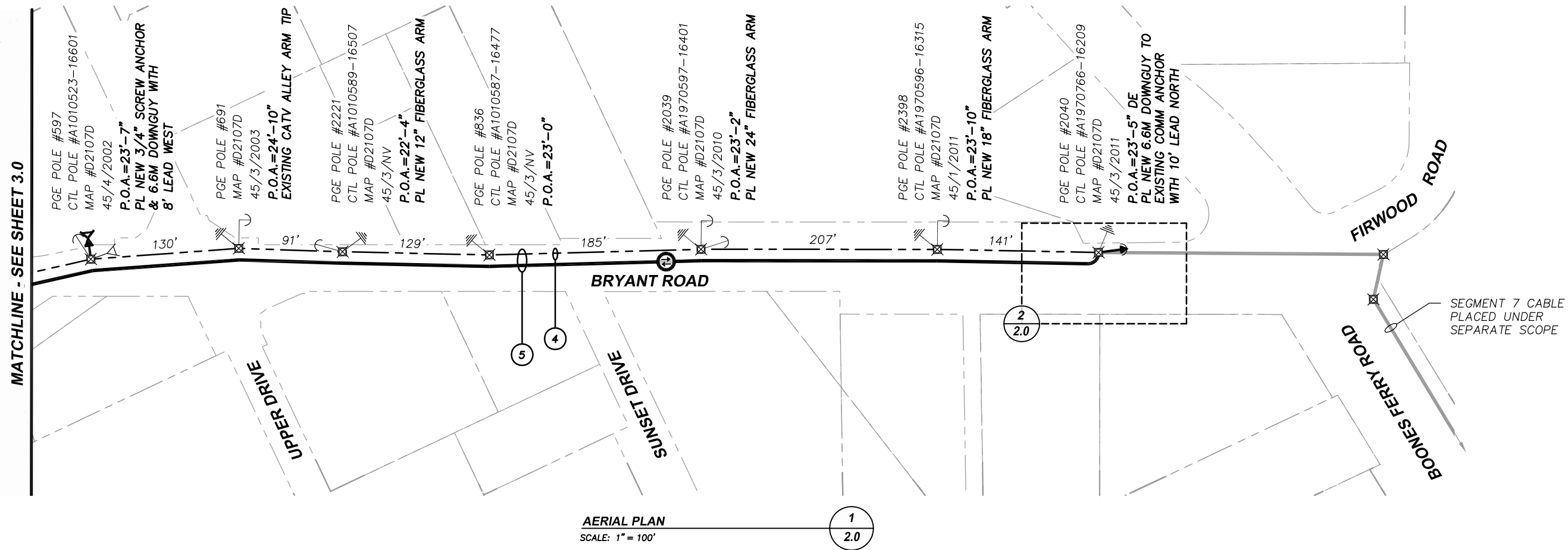
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CLACKAMAS BROADBAND EXPRESS STANDARD PLANS FOR CONSTRUCTION

RISER DETAILS AND LOCATE WIRE / BONDING DETAILS

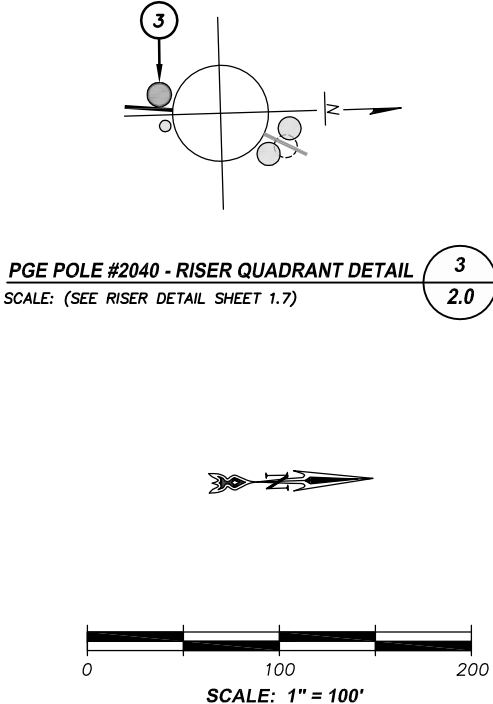
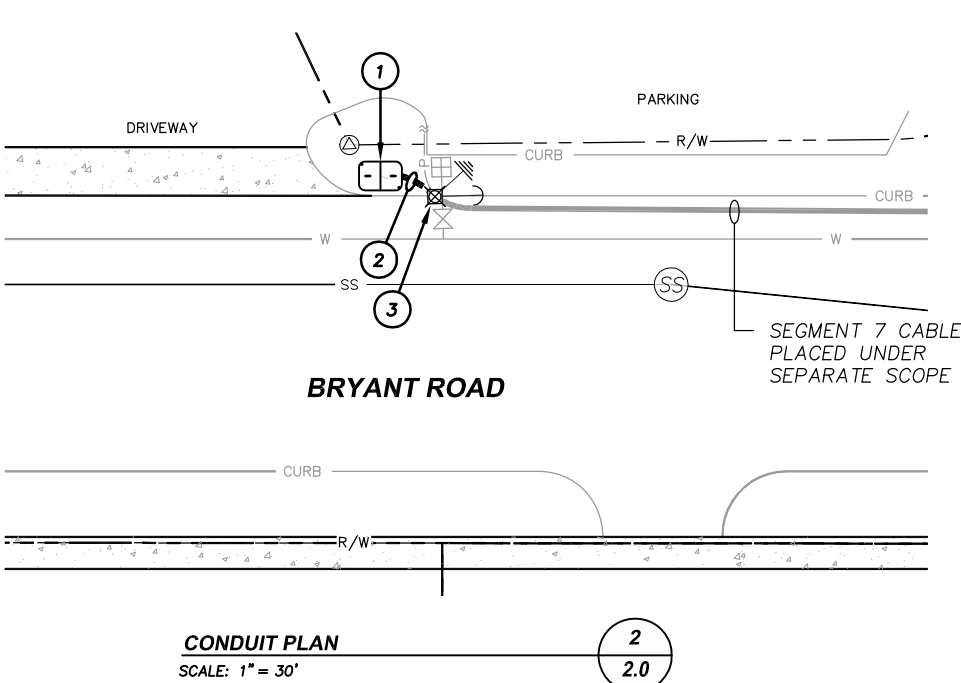
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CONSTRUCTION SET



CONSTRUCTION NOTES

- 1 PL NEW 36X48X36 OPEN BOTTOM UTILITY VAULT WITH HEAVY DUTY TWO BOLD LID - PROPOSED REEL-END SPLICE LOCATION. PL NEW GROUND ROD, LOCATE WIRE ACCESS POINT AND GROUND WIRE IN VAULT. BOND #12 AWG LOCATE WIRE TO ACCESS POINT. PL NEW #6 AWG TAIL BETWEEN GROUND ROD & TEST STATION GROUND LUG. LEAVE 100' SLACK STORAGE IN NEW 144F BACKBONE CABLE COILED IN VAULT (SEGMENT 4). PROPOSED 100' SLACK STORAGE IN NEW 144F BACKBONE CABLE COILED IN VAULT (SEGMENT 7). RESTORE AREA AND LANDSCAPE TO "LIKE NEW" CONDITIONS.
- 2 PL THREE (3) NEW 1-1/4" HDPE CONDUITS. PL NEW 144F CABLE AND #12 AWG LOCATE WIRE THROUGH ONE (1) VACANT CONDUIT.
- 3 EXISTING PGE POLE #2040. PL NEW 4" SCH-40 PVC RISER (10' GRC) E/W THREE (3) 1-1/4" SDR11 INNERDUCTS ON NEW STANDOFF BRACKETS. PL #6 VERTICAL GROUND ON POLE AS REQUIRED - BOND LOCATE WIRE TO MGN ON POLE. PL NEW 144F CABLE AND #12 AWG LOCATE WIRE THROUGH NEW RISER AND TRANSITION TO AERIAL.
- 4 PL NEW 6.6M STRAND.
- 5 LASH NEW 144F CABLE TO NEW STRAND. (PL NEW FIBER TAG AT EACH POLE ATTACHMENT)



Clackamas Broadband eXchange
information at the speed of light

LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 4
AERIAL PLAN

CITY: LAKE OSWEGO - TOWNSHIP 2 SOUTH RANGE 1 EAST SECTION: 7,8,17 COUNTY: CLACKAMAS CO., OREGON
PLOT DATE: 2/08/2017 SCALE: AS SHOWN PROJECT NAME-FILENAME.DWG - TAB_SHEET # SHEET 2.0
LAKEO-S4-DE00.DWG - AP01_2.0

Plot Date: 08 Feb 2017, 2:56pm By User: Tom
Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 4\LAKEO-S4-DE00.DWG Layout (If Any): AP01_2.0

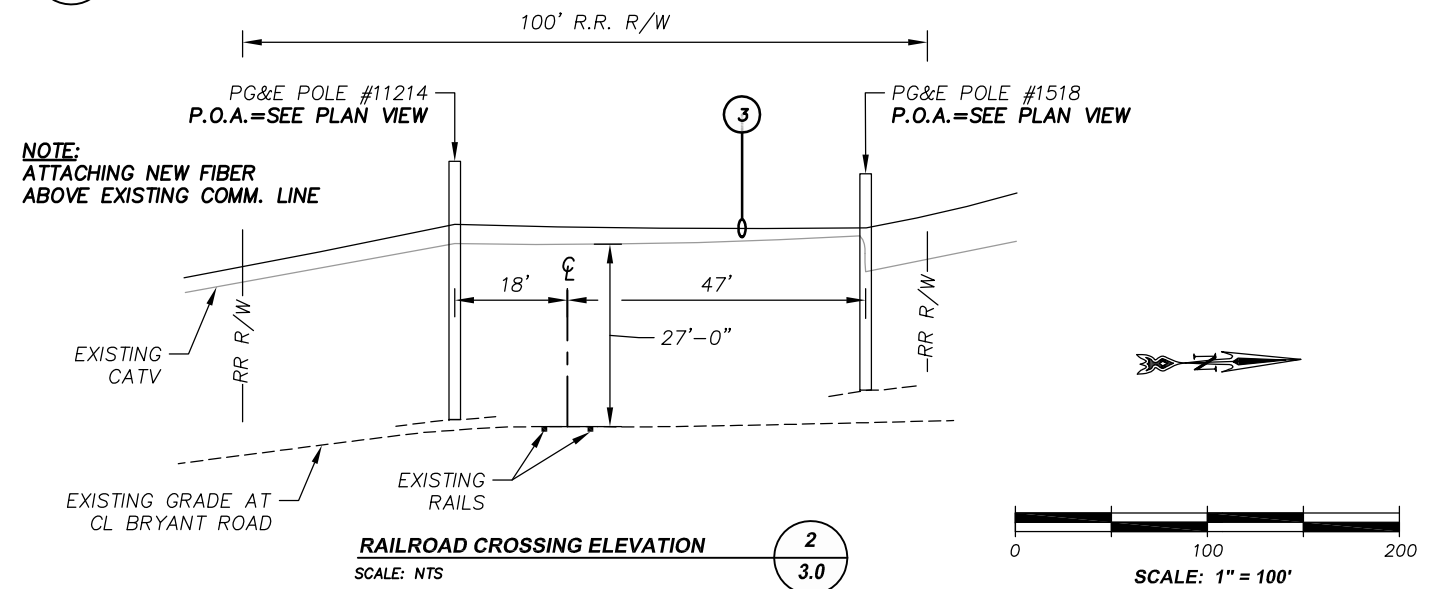
COMMSSTRUCTURE CONSULTING, LLC
811 Railroad Avenue
Oregon City, Oregon 97045
Main Office: 503.343.4134
www.commsstructureconsulting.com

DESIGNED BY: T. WALKER

CHECKED BY: J. GREENWOOD DRAWN BY: T. BRADLEY

REV

DESCRIPTION	DATE	BY	APP



- ① PL NEW 6.6M STRAND.
- ② LASH NEW 144F CABLE TO NEW STRAND.
(PL NEW FIBER TAG AT EACH POLE ATTACHMENT)
- ③ PL ONE (1) 1.25" AERIAL FIGURE 8 SELF-SUPPORTING
CONDUIT (BLACK) WITH 6.6M STRAND.
PULL NEW 144F CABLE THROUGH NEW 1.25" AERIAL CONDUIT.

RAILROAD PERMIT REQUIRED
PORTLAND & WESTERN RAILROAD
MILEPOST #748 (2640' SOUTH)
WIRELINE # _____ FOLDER # _____



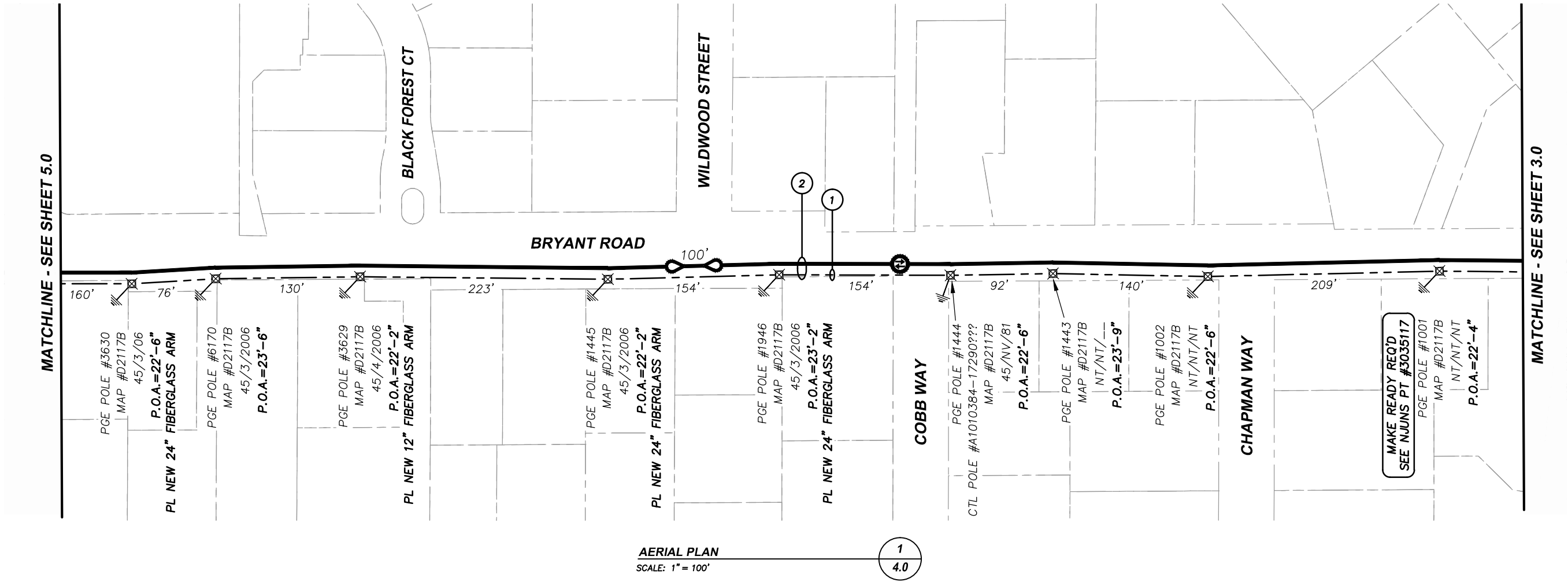
DESIGNED BY: T. WALKER
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REVISIONS				
REV	DESCRIPTION	DATE	BY	APP

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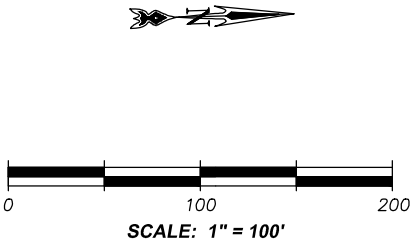
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PLOT DATE: 3/15/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG - TAB_SHEET # LAKEO-S4-DE00.DWG - AP01_3.0	SHEET 3.0

CONSTRUCTION SET



CONSTRUCTION NOTES

- 1 PL NEW 6.6M STRAND.
- 2 LASH NEW 144F CABLE TO NEW STRAND.
(PL NEW FIBER TAG AT EACH POLE ATTACHMENT)



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CHECKED BY:	J. GREENWOOD		
REVISIONS			
REV	DESCRIPTION	DATE	BY APP

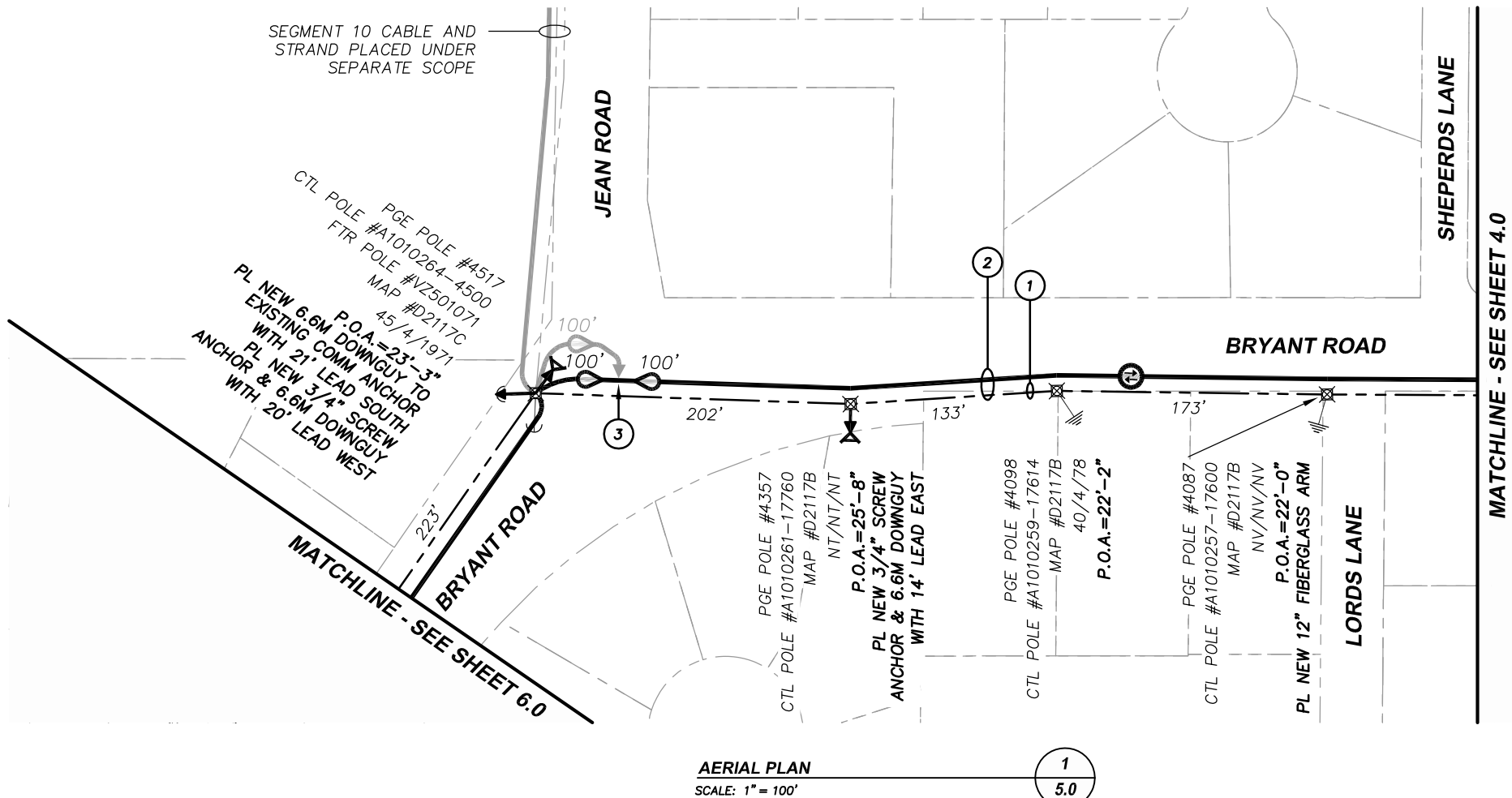
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LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 4
AERIAL PLAN

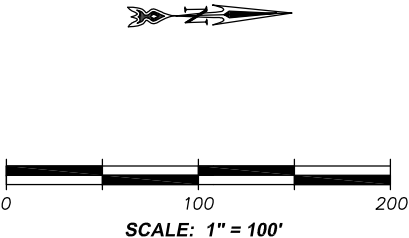
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PLOT DATE: 2/03/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG — TAB_SHEET # LAKEO-S4-DE00.DWG — AP01_4.0	SHEET 4.0

CONSTRUCTION SET



CONSTRUCTION NOTES

- 1 PL NEW 6.6M STRAND.
- 2 LASH NEW 144F CABLE TO NEW STRAND.
(PL NEW FIBER TAG AT EACH POLE ATTACHMENT)
- 3 PROPOSED MID-SHEATH SPLICE LOCATION.
LEAVE 200' SLACK STORAGE IN 144F BACKBONE CABLE (SEGMENT 4).
PROPOSED 100' SLACK STORAGE IN 24F LATERAL CABLE (SEGMENT 10).



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REVISIONS				
✓	DESCRIPTION	DATE	BY	APP

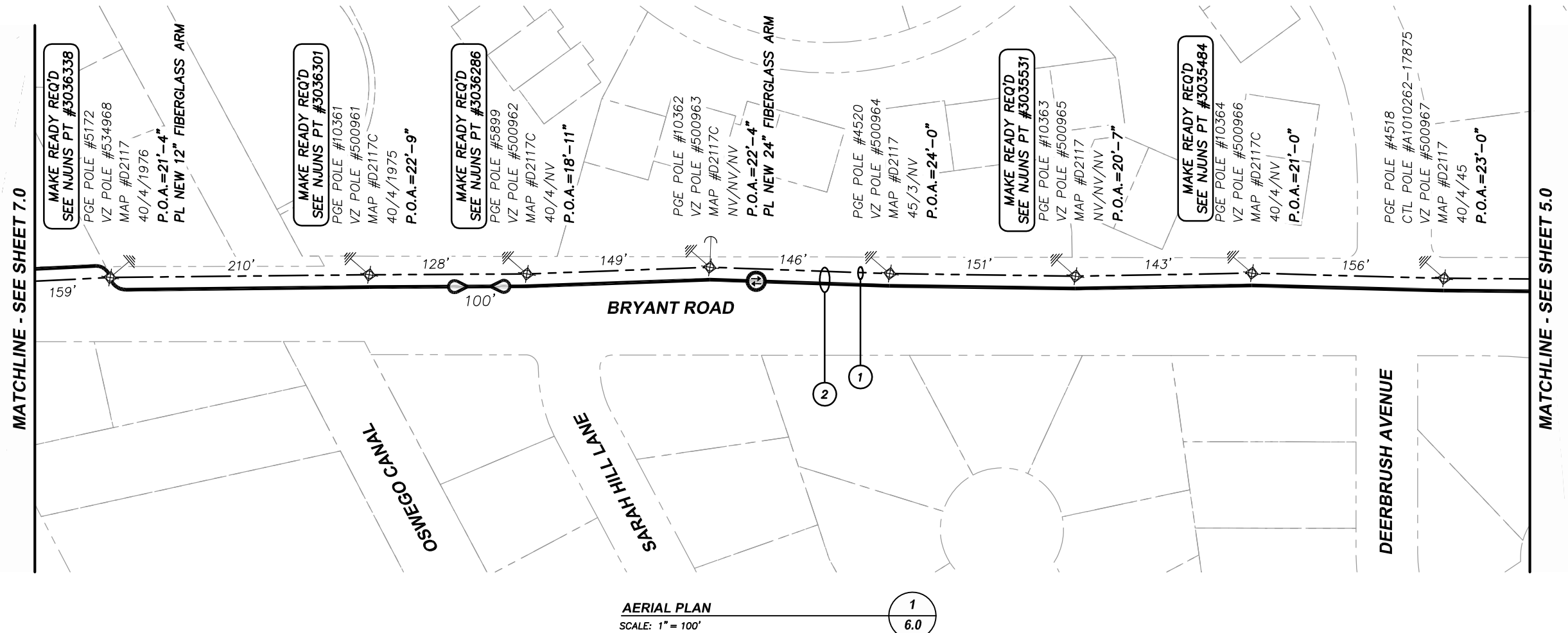
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LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 4
AERIAL PLAN

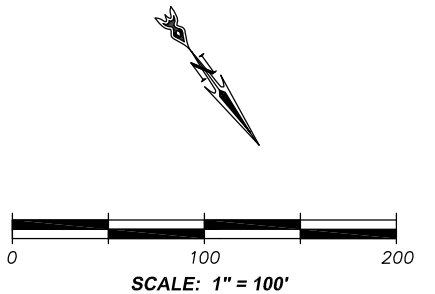
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PLOT DATE: 2/08/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG - TAB_SHEET # LAKEO-S4-DE00.DWG - AP01_5.0	SHEET 5.0

CONSTRUCTION SET



CONSTRUCTION NOTES

- ① PL NEW 6.6M STRAND.
- ② LASH NEW 144F CABLE TO NEW STRAND.
(PL NEW FIBER TAG AT EACH POLE ATTACHMENT)



DESIGNED BY: T. WALKER
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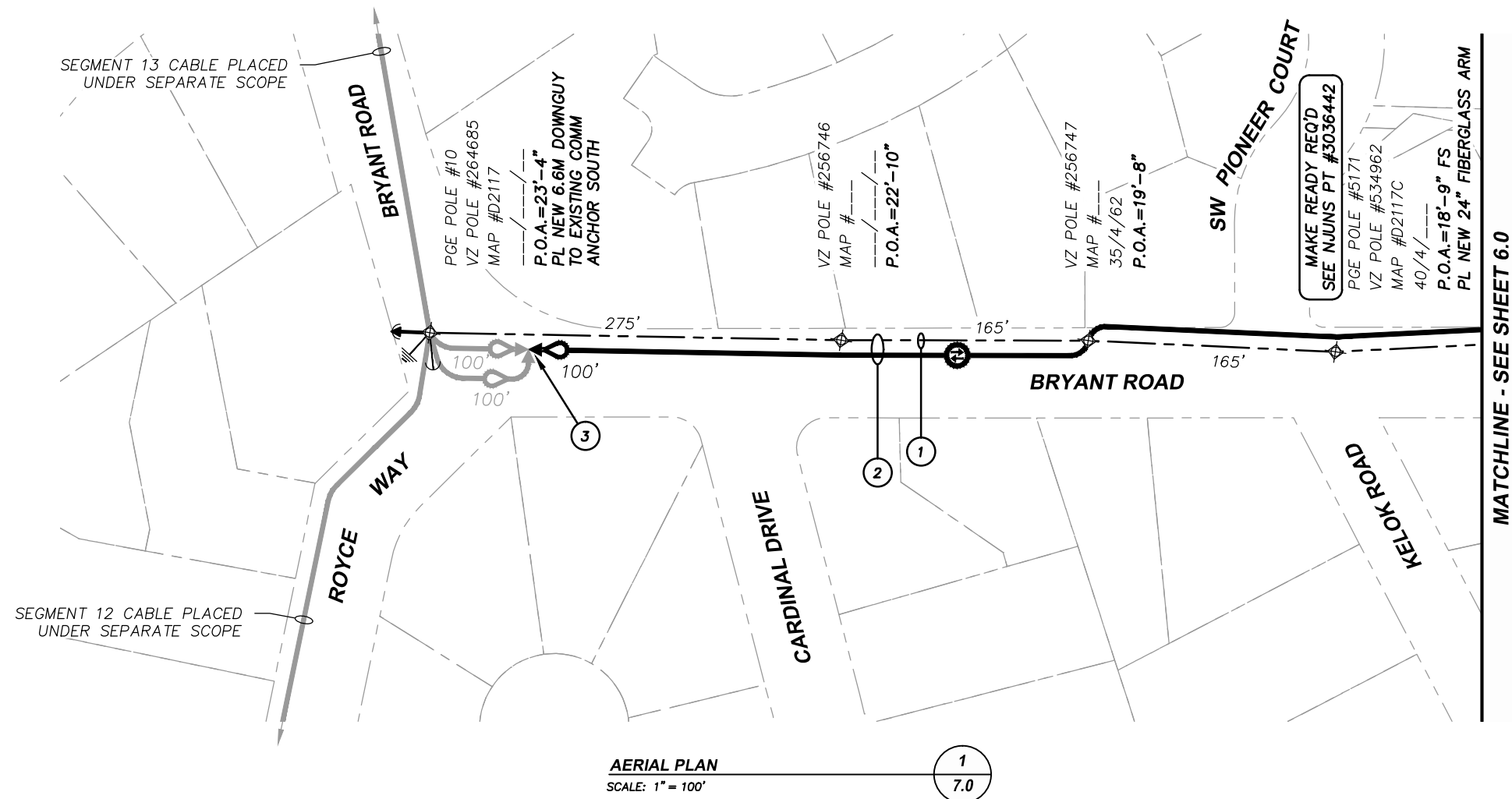
REVISIONS				
REV	DESCRIPTION	DATE	BY	APP

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**LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 4
AERIAL PLAN**

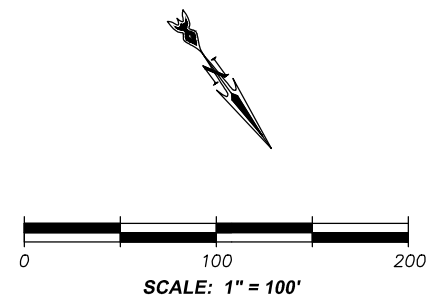
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PLOT DATE: 2/06/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG - TAB_SHEET # LAKEO-S4-DE00.DWG - AP01_6.0	SHEET 6.0

CONSTRUCTION SET



CONSTRUCTION NOTES

- ① PL NEW 6.6M STRAND.
- ② LASH NEW 144F CABLE TO NEW STRAND.
(PL NEW FIBER TAG AT EACH POLE ATTACHMENT)
- ③ PROPOSED MID-SHEATH SPLICE LOCATION.
LEAVE 100' SLACK STORAGE IN 144F BACKBONE CABLE (SEGMENT 4).
PROPOSED 100' SLACK STORAGE IN 24F LATERAL CABLE (SEGMENT 12).
PROPOSED 100' SLACK STORAGE IN 144F BACKBONE CABLE (SEGMENT 13).



DESIGNED BY: T. WALKER
CHECKED BY: J. GREENWOOD DRAWN BY: T. BRADLEY

REVISIONS				
REV	DESCRIPTION	DATE	BY	APP

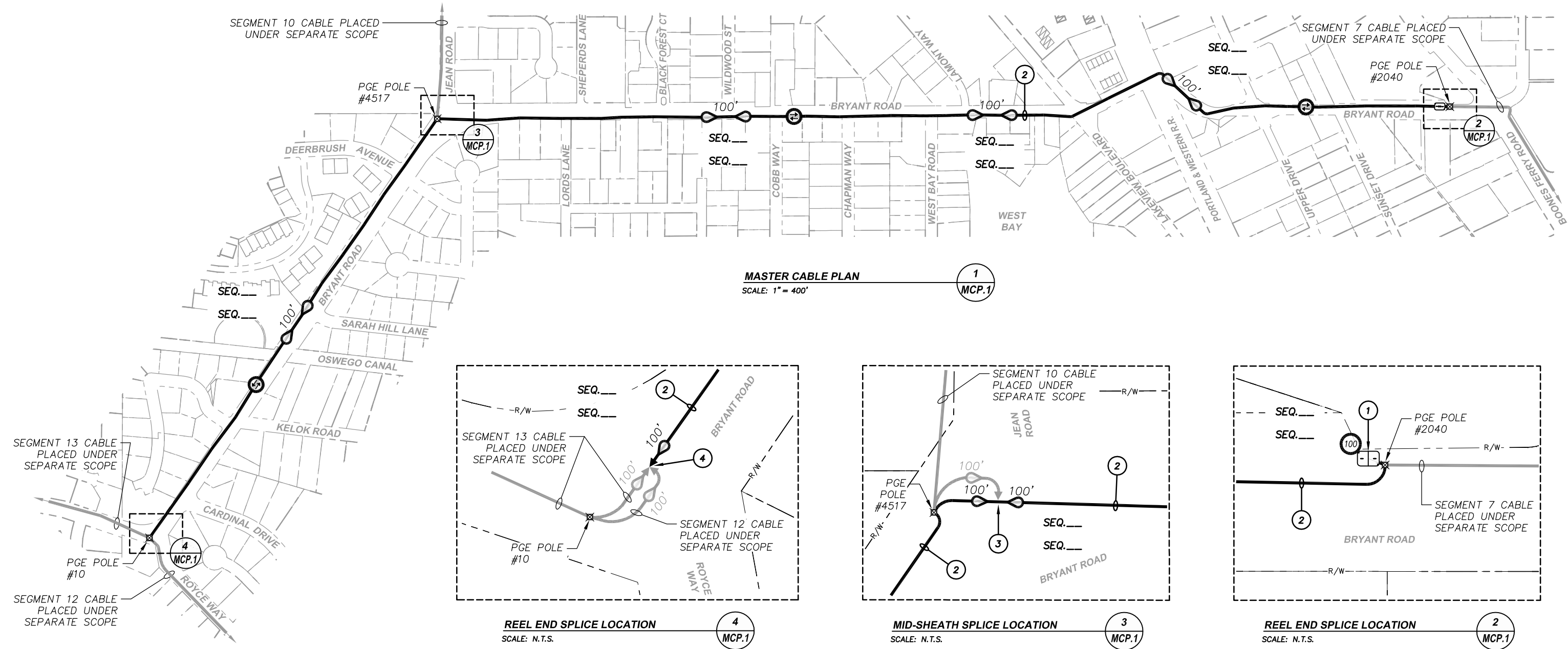
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**LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 4**

AERIAL PLAN

CITY: LAKE OSWEGO - TOWNSHIP 2 SOUTH RANGE 1 EAST SECTION: 7,8,17		COUNTY: CLACKAMAS CO., OREGON	
PLOT DATE: 2/03/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG - TAB_SHEET # LAKEO-S4-DE00.DWG - AP01_7.0	SHEET 7.0

CONSTRUCTION SET



CONSTRUCTION NOTES

- 1 PROPOSED REEL END SPLICE LOCATION.
LEAVE 100' SLACK STORAGE IN 144F BACKBONE CABLE (SEGMENT 4).
PROPOSED 100' SLACK STORAGE IN 144F BACKBONE CABLE (SEGMENT 7).
- 2 LASH NEW 144F CABLE TO NEW STRAND.
- 3 PROPOSED MID-SHEATH SPLICE LOCATION.
LEAVE 200' SLACK STORAGE IN 144F BACKBONE CABLE (SEGMENT 4).
PROPOSED 100' SLACK STORAGE IN 24F LATERAL CABLE (SEGMENT 10).
- 4 PROPOSED REEL END SPLICE LOCATION.
LEAVE 100' SLACK STORAGE IN 144F BACKBONE CABLE (SEGMENT 4).
PROPOSED 100' SLACK STORAGE IN 24F LATERAL CABLE (SEGMENT 12).
PROPOSED 100' SLACK STORAGE IN 144F BACKBONE CABLE (SEGMENT 13).

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DESIGNED BY: <u>T. WALKER</u>				
CHECKED BY: <u>J. GREENWOOD</u>		DRAWN BY: <u>T. BRADLEY</u>		
REVISIONS				
REV	DESCRIPTION	DATE	BY	APP

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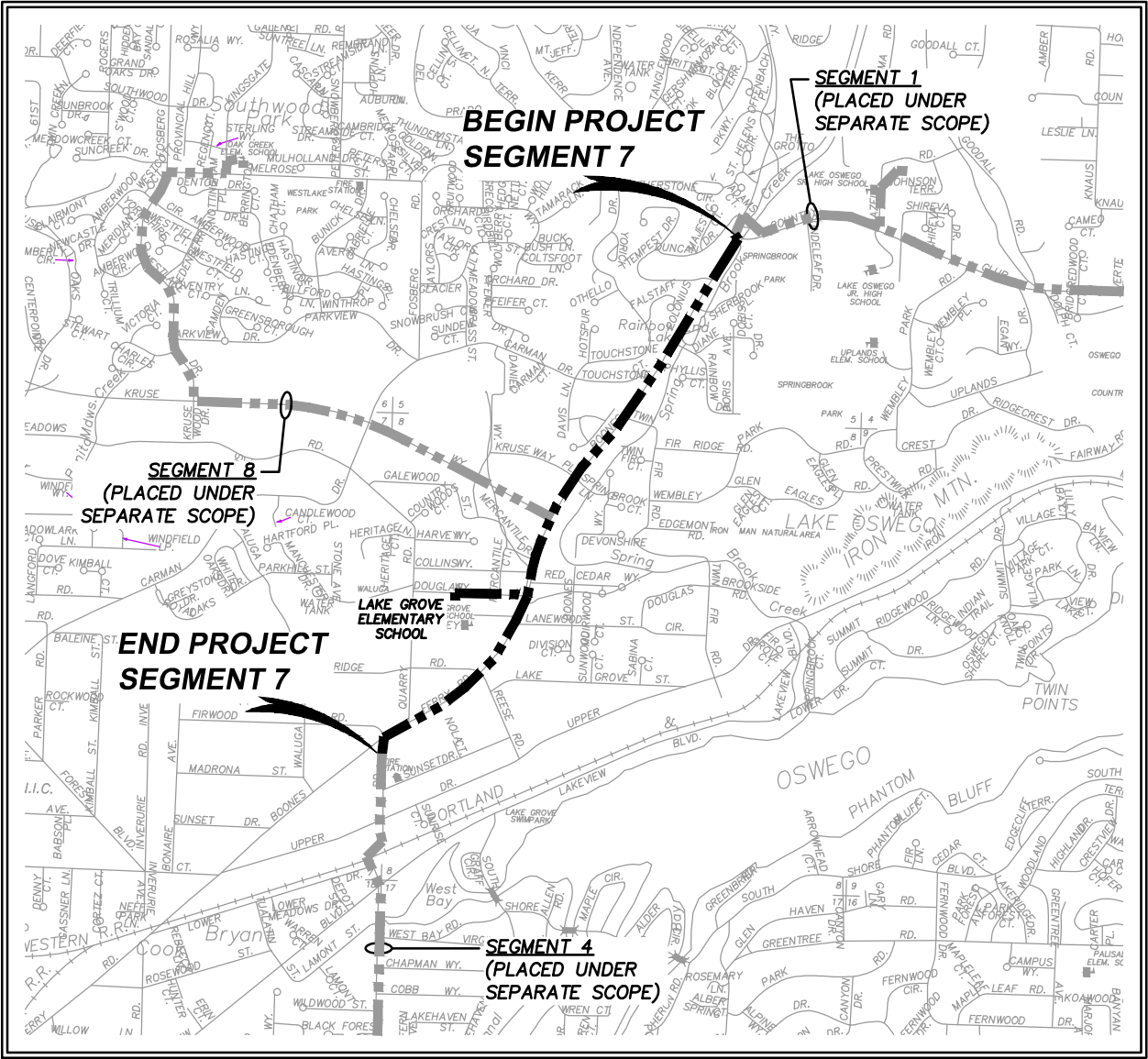
LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 4
MASTER CABLE PLAN

CITY: LAKE OSWEGO – TOWNSHIP 2 SOUTH RANGE 1 EAST SECTION: 7,8,17 COUNTY: CLACKAMAS CO., OREGON

PLOT DATE: 2/08/2017 SCALE: AS SHOWN PROJECT NAME-FILENAME.DWG – TAB_SHEET # SHEET MCP.1

CLACKAMAS BROADBAND EXCHANGE
LAKE OSWEGO SCHOOL DISTRICT EXPANSION // SEGMENT 7 - LAKE GROVE ELEMENTARY SCHOOL

CITY OF LAKE OSWEGO, CLACKAMAS COUNTY, OREGON
TOWNSHIP 02 SOUTH , RANGE 01 EAST, SECTIONS 5,8
March 2017



VICINITY MAP
SCALE: NTS

1
1.0

SHEET INDEX

SHEET NAME	DESCRIPTION
1.0	COVER SHEET – VICINITY MAP
1.1	JOB SCOPE – MATERIAL RAKE-OFF
1.2	LEGEND
1.3	GENERAL NOTES
1.4	GENERAL NOTES
1.5	GENERAL NOTES
1.6	VAULT DETAILS
1.7	RISER DETAILS / LOCATE WIRE AND BONDING DETAILS
2.0	CONDUIT PLAN:
3.0	CONDUIT PLAN:
4.0	CONDUIT PLAN:
5.0	CONDUIT PLAN:
6.0	CONDUIT PLAN:
7.0	CONDUIT PLAN:
8.0	CONDUIT PLAN:
9.0	CONDUIT PLAN:
10.0	CONDUIT PLAN:
11.0	CONDUIT PLAN:
12.0	CONDUIT PLAN:
13.0	AERIAL PLAN:
14.0	AERIAL PLAN:
15.0	CONDUIT PLAN:
16.0	CONDUIT PLAN:
S.1	SITE PLAN:
S.2	BUILDING ENTRANCE PLAN:
MCP.1	MASTER CABLE PLAN:

OWNER / APPLICANT

CLACKAMAS BROADBAND EXCHANGE
121 LIBRARY COURT
OREGON CITY, OR 97045
OFFICE: 503.655.8322

CONTACT: DUKE DEXTER; BROADBAND PROJECT COORDINATOR
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E-MAIL: JAMES@COMMSTRUCTURECONSULTING.COM

CONTACT: TERENCE WALKER, PROJECT DESIGNER
DIRECT: 971.266.4429
E-MAIL: TERENCE@COMMSTRUCTURECONSULTING.COM



Know what's below.
Call before you dig.

OREGON ADMINISTRATIVE RULES 952-001-0020

PROJECT PLANS TO NOTIFY EXCAVATOR OF REQUIREMENTS OF LAW
ALL PROJECT PLANS SHALL CONTAIN THE FOLLOWING STATEMENT:

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 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).

STAT. AUTH.: SEC. 1 – 5 & 7, CH. 691, OL 1995
STATS. IMPLEMENTED:
HIST.: OUNC 1-1997, F. & CERT. EF. 4-17-97

Clackamas Broadband eXchange

information at the speed of light

LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 7 - LAKE GROVE ELEMENTARY SCHOOL
COVER SHEET - VICINITY MAP

CITY: LAKE OSWEGO – TOWNSHIP 02 SOUTH RANGE 01 EAST SECTION: 5,8		COUNTY: CLACKAMAS CO., OREGON	
PLOT DATE: 3/16/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG – TAB_SHEET # LAKE0-S7-CS00.DWG – CS01_1.0	SHEET 1.0

JOB SCOPE

LAKE OSWEGO, OREGON
CLACKAMAS COUNTY

TOWNSHIP 2S – RANGE 1E – SECTIONS 5 & 8

PROJECT SUMMARY

THIS PROJECT WILL PROVIDE BACKBONE INFRASTRUCTURE EXPANSION OF THE CLACKAMAS BROADBAND EXCHANGE (CBX) NETWORK IN LAKE OSWEGO, OREGON. SPECIFICALLY, THIS PROJECT WILL FACILITATE EXPANDED BROADBAND CONNECTIVITY FOR THE LAKE OSWEGO SCHOOL DISTRICT SITES AND FACILITIES IN THE AREA. THIS PROJECT IS DIVIDED INTO 10 SEPARATE BUT CONTINUOUS BACKBONE SEGMENTS WITH THE COMBINED ROUTE TOTALING APPROXIMATELY 70,000 FEET OF NEW AERIAL AND UNDERGROUND INFRASTRUCTURE. THE FOLLOWING IS THE SCOPE OF WORK AND SUMMARY FOR THIS SPECIFIC SEGMENT DESIGN PACKAGE.

BACKBONE – SEGMENT 7

SEGMENT 7 WILL CREATE A NEW FIBER OPTIC BACKBONE NETWORK CONNECTION BETWEEN SEGMENTS 1, 8, & 4 AS WELL AS A LATERAL TO LAKE GROVE ELEMENTARY.

BEGINNING AT PROPOSED SEGMENT 1 REEL END SPLICE LOCATED IN A PROPOSED UTILITY VAULT ADJACENT TO PGE RISER POLE #3532 ON THE NW SIDE OF BOONES FERRY RD AND KERR PKWY, A NEW 2"CONDUIT WILL BE CONSTRUCTED APPROXIMATELY 30FT EAST AND INTERCONNECT WITH AN EXISTING CITY OF LAKE OSWEGO TRAFFIC SIGNAL JUNCTION BOX. A NEW 144F MICRO CABLE WILL BE PLACED FROM THE PROPOSED CBX SPLICE VAULT THROUGH THE NEW CONDUIT AND ENTER THE EXISTING TRAFFIC SIGNAL CONDUIT TRANSITIONING SOUTH ALONG THE WEST SIDE OF BOONES FERRY RD. FROM THE EXISTING VAULT NEW TWO-WAY 18/14MM MICRO CONDUIT IS TO BE PLACED THROUGH THE EXISTING CITY TRAFFIC SIGNAL CONDUIT SOUTH TO THE SW CORNER OF MERCANTILE DR. AND BOONES FERRY RD. SEVERAL EXISTING CITY HAND HOLES WILL BE REPLACED WITH 24X36X36 OPEN BOTTOM HAND HOLES FOR FIBER CABLE STORAGE AS DESCRIBED IN THE CONSTRUCTION DRAWINGS. THE NEW 144F MICRO CABLE WILL BE PLACED THROUGH ONE VACANT MICRO DUCT ALONG THE PATHWAY DESCRIBED ABOVE.

AT THE INTERSECTION OF MERCANTILE DR. AND BOONES FERRY RD. THE EXISTING TRAFFIC SIGNAL CONDUIT TERMINATES IN AN EXISTING TRAFFIC SIGNAL VAULT. FROM THIS LOCATION AND THE NEW TWO-WAY 18/14MM MICRO CONDUIT WILL BE PLACED SOUTH ALONG THE WEST SIDE OF BOONES FERRY RD. TO A PROPOSED RISER POLE PGE#3550 LOCATED ON THE SW CORNER OF LANEWOOD ST. AND BOONES FERRY RD. THE NEW 144F MICRO CABLE WILL BE PLACED THROUGH ONE VACANT MICRO-DUCT ALONG THE ABOVE DESCRIBED ALIGNMENT.

FROM PGE RISER POLE #3550 AN EXISTING AERIAL CITY OF LAKE OSWEGO TRAFFIC SIGNAL CABLE EXTENDS SOUTH ON BOONES FERRY TO BRYANT RD. AT BRYANT RD A NEW AERIAL 6.6M STRAND PATHWAY WILL BE CONSTRUCTED SOUTH ON BRYANT AND TERMINATE AT PGE POLE# 2040, INTERCONNECTING WITH STRAND PLACED ON SEGMENT 4. THE NEW 144F MICRO CABLE WILL BE LOOSE-LASHED OR ZIP-TIED TO THE EXISTING CITY OF LAKE OSWEGO FACILITIES AND THE NEW STRAND. CARE SHALL BE TAKEN NOT TO DAMAGE THE MICRO FIBER DURING INSTALLATION.

AT PGE POLE #2040 THE NEW 144F MICRO CABLE WILL TRANSITION THROUGH THE PROPOSED RISER AND CONDUIT PLACED UNDER SEGMENT #4 TO THE PROPOSED VAULT AND REEL END SPLICE LOCATION BETWEEN SEGMENTS 7 AND 4.

LAKE GROVE ELEMENTARY LATERAL

BEGINNING AT A PROPOSED INTERMEDIATE VAULT LOCATION ON THE SOUTHWEST CORNER OF DOUGLAS WAY AND BOONES FERRY RD. A NEW 2"UNDERGROUND CONDUIT PATHWAY WILL BE CONSTRUCTED WEST ALONG THE SOUTH SIDE OF DOUGLAS WAY APPROXIMATELY 830FT. HERE A NEW UTILITY VAULT WILL BE PACED IN THE PLANTER STRIP ADJACENT TO THE NORTH END OF THE LAKE GROVE ELEMENTARY SCHOOL PARKING LOT. FROM THIS NEW VAULT THE NEW 2"CONDUIT PATHWAY WILL BE PLACED SOUTH CROSSING THE PARKING AREA AND TRANSITION UP THE EXTERIOR FACILITY WALL TO A PROPOSED JUNCTION BOX AND CORE DRILL LOCATION. A NEW 24F CABLE WILL BE PLACED THROUGH THE NEW UNDERGROUND PATHWAY TO THE FACILITY ENTRANCE LOCATION AS DESCRIBED ABOVE.

FROM THE NEW CORE DRILL AND JUNCTION BOX NEW RISER FLEX WILL TRANSITION SOUTH THROUGH THE FACILITY ATTIC SPACE TO THE MECHANICAL ROOM. HERE AN EXISTING RISER FLEX CONDUIT PATHWAY CONTINUES THROUGH THE BUILDING TO THE FACILITY COMM ROOM. THE NEW 24F CABLE WILL TRANSITION THROUGH THE NEW AND EXISTING CONDUIT PATHWAY AS DESCRIBED ABOVE AND COIL AT THE RACK FOR TERMINATION.

CONTRACTOR WILL BE RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE CITY, COUNTY, STATE AND PRIVATE AGENCY RIGHT OF WAY AND POLE ATTACHMENT PERMIT REQUIREMENTS INCLUDING TRAFFIC CONTROL, WORK HOUR RESTRICTIONS, NOTIFICATIONS AND RESTORATION. CABLE REEL LOCATIONS ALONG WITH SLACK STORAGE IN THE FIBER CABLE WILL BE PLACED AT AERIAL STORAGE AND VAULT LOCATIONS AS DESIGNATED IN THE CONSTRUCTION DRAWINGS AND FIBER OWNERSHIP TAGS WILL BE PLACED ON THE CABLE AT EVERY POLE AND EVERY VAULT LOCATION. THE CONTRACTOR WILL PLUG ALL VACATED HOLES FROM ABANDON OR RELOCATED ATTACHMENTS PER POLE OWNER SPECIFICATIONS. CONTRACTOR WILL TEST AND VERIFY THE EXISTING CONDUIT PRIOR TO INSTALLATION OF THE NEW FIBER OPTIC CABLE AND LOCATE WIRE. CONTRACTOR WILL CLEAN AND TAG FIBER COILS; PREP FOR SPLICE; PLACE LOCATE WIRE; TEST STATIONS; GROUND RODS; AND GROUND WIRE AS REQUIRED AND DETAILED IN THE CONSTRUCTION DRAWINGS WITH REPLACING ANY MISSING LOCATE WIRE WITHIN THE EXISTING CONDUIT PATHWAYS.

PERMITS

CITY OF LAKE OSWEGO:	1
PGE POLE PERMIT:	2
CENTURYLINK PERMIT:	1

MATERIAL & INSTALLATION SUMMARY

DESCRIPTION	UOM	TOTALS
MATERIAL RAKE OFF:		
AERIAL QUANTITY:		
6.6M STRAND / MESSENGER:	FT	289
S/W GUY ASSEMBLY:	EA	1
2" CONDUIT RISER (10' GRC REMAINING PVC):	FT	25
AERIAL SLACK STORAGE BRACKET (SNOW SHOE – QTY. 2):	EA	2
UNDERGROUND QUANTITY:		
2" SCH40 PVC OR SDR11 HDPE CONDUIT:	FT	755
2" SCH40 PVC 90'BEND (3'R 5'L MIN):	EA	1
TWO-WAY 18/14MM MICRO CONDUIT W/ RIPCORD AND #14 LOCATE WIRE:	FT	5318
24X36X36 OPEN BOTTOM HAND HOLE:	EA	13
#12 AWG LOCATE WIRE:	FT	775
LOCATE WIRE TEST STATION:	EA	7
5/8' X 5' GROUND ROD:	EA	7
INTERIOR QUANTITY:		
2" GRC RISER CONDUIT:	FT	20
12x12x8 NEMA TYPE 3R – METALLIC JUNCTION BOX:	EA	1
1-1/4" RISER FLEX CONDUIT:	FT	390
FIBER QUANTITY:		
144 CT MICRO FIBER OPTIC CABLE:	FT	7542
144 CT MICRO FIBER OPTIC CABLE SLACK:	FT	1550
24 CT DIELECTRIC FIBER OPTIC CABLE:	FT	1165
24 CT DIELECTRIC FIBER OPTIC CABLE SLACK:	FT	250
INSTALLATION RAKE OFF:		
AERIAL QUANTITY:		
PLACE NEW 6.6M STRAND / MESSENGER:	FT	289
PLACE NEW S/W GUY ASSEMBLY:	EA	1
PLACE NEW 2" CONDUIT RISER (10' GRC REMAINING PVC):	EA	1
PLACE NEW AERIAL SLACK STORAGE BRACKET (SNOW SHOE – QTY. 2):	EA	2
UNDERGROUND QUANTITY:		
PLACE ONE(1) NEW 2" SCH40 PVC OR SDR11 HDPE CONDUIT:	FT	755
PLACE ONE(1) NEW TWO-WAY 18/14MM MICRO CONDUIT IN EXISTING CONDUIT:	FT	4470
PLACE ONE(1) NEW TWO-WAY 18/14MM MICRO CONDUIT (IN GROUND):	FT	848
PLACE NEW 24X36X36 OPEN BOTTOM HAND HOLE:	EA	13
PLACE NEW #12 AWG LOCATE WIRE (AS-REQUIRED):	FT	775
PLACE NEW LOCATE WIRE TEST STATION (AS-REQUIRED):	EA	7
PLACE NEW 5/8' X 5' GROUND ROD (AS-REQUIRED):	EA	7
INTERIOR QUANTITY:		
PLACE NEW 2" GRC RISER CONDUIT:	FT	20
PLACE NEW 12x12x8 NEMA TYPE 3R – METALLIC JUNCTION BOX:	EA	1
PLACE NEW 1-1/4" RISER FLEX CONDUIT:	FT	390
FIBER QUANTITY:		
PLACE (LASH) NEW FIBER CABLE TO NEW STRAND:	FT	289
PLACE (LASH) NEW FIBER CABLE(S) TO EXISTING STRAND (OVERLASH):	FT	1895
PLACE NEW CABLE THROUGH VACANT MICRO CONDUIT:	FT	5318
PULL NEW CABLE THROUGH EXISTING CONDUIT:	FT	40
PULL NEW CABLE THROUGH NEW CONDUIT:	FT	1165
TOTAL POLES	EA	15


*** NOTE:
FOOTAGES SHOWN ARE MEASURED IN LINEAR FEET.
TO ACCOMMODATE FOR SAG DISTANCE FROM POLE TO POLE,
ADD 2% TO TOTAL CABLE & STRAND.

Clackamas Broadband eXchange

information at the speed of light

LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 7 - LAKE GROVE ELEMENTARY SCHOOL
JOB SCOPE - MATERIAL RAKE-OFF

CITY: LAKE OSWEGO – TOWNSHIP 02 SOUTH RANGE 01 EAST SECTION: 5,8			COUNTY: CLACKAMAS CO., OREGON
PLOT DATE: 3/16/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG – TAB_SHEET # LAKEO-S7-CS00.DWG – CS02_1.1	SHEET 1.1



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503.343.4134

Plot Date: 16 Mar 2017, 3:51pm By User: Tom
Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 7\LAKEO-S7-CS00.DWG Layout (If Any): CS02_1.1

SPECIFICATION SET

SURFACE FEATURES / AERIAL UTILITIES - LINETYPES & SYMBOLS

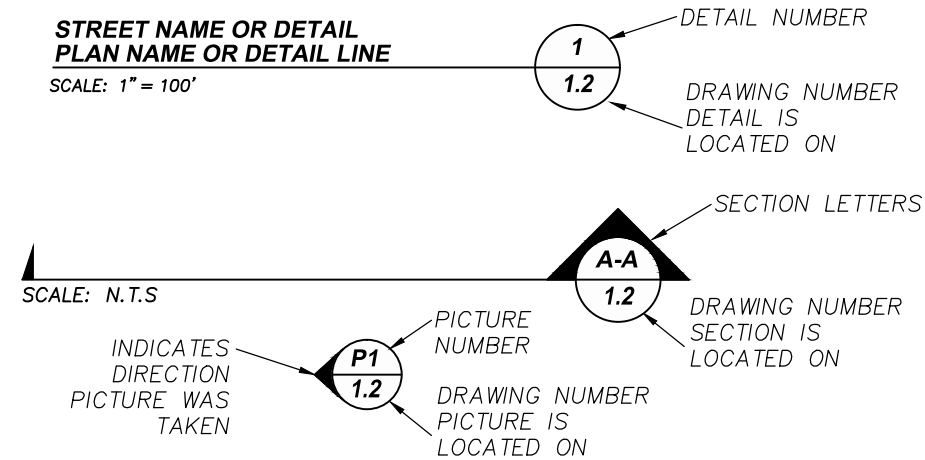
EXISTING	PROPOSED
<div>DESIGN</div> <div><div>CABLE</div><div>STRAND</div><div>CONDUIT</div><div>PLENUM / RISER RATED FLEX CONDUIT (AS SPECIFIED)</div></div>	<div>DESIGN</div> <div><div>CABLE</div><div>STRAND</div><div>CONDUIT</div><div>PLENUM / RISER RATED FLEX CONDUIT (AS SPECIFIED)</div></div>
<div>COMMUNICATIONS</div> <div>(OWNERS SPECIFIED ON PLANS)</div> <div>CATV CATV</div> <div>T TELEPHONE</div> <div>FO FIBER OPTIC</div>	
<div>POWER/ELECTRICAL</div> <div>(OWNERS SPECIFIED ON PLANS)</div> <div>P PRIMARY</div> <div>SL STREET LIGHT</div> <div>TS TRAFFIC SIGNAL</div>	
<div>OTHER UTILITIES</div> <div>G GAS</div> <div>SS SANITARY</div> <div>ST STORM</div> <div>W WATER</div>	
<div>TOPO FEATURES</div> <div>BOW BACK OF WALK/SIDEWALK</div> <div><div>BUILDING FOOTPRINT</div></div> <div>CULVERT</div> <div>CURB CURB</div> <div>EOC EDGE OF CONCRETE</div> <div>EOG EDGE OF GRAVEL</div> <div>EOP EDGE OF PAVEMENT</div> <div>DWY DRIVEWAY</div> <div>TOB TOP OF BANK</div> <div>FENCE STRIPING</div> <div>R/R TRACKS</div> <div>C/L RIGHT-OF-WAY CENTERLINE</div> <div>R/W RIGHT-OF-WAY</div> <div>P/L PROPERTY LINE</div> <div>EASEMENT</div> <div>WALL</div> <div>VEGETATION LINE</div>	<div>POLE TO POLE GUY</div> <div>CENTERLINE</div>

ABBREVIATIONS

E/W EQUIPPED WITH	N NORTH	AB ABANDONED	FS FIELD SIDE	RPL REPLACE
D/W DRIVEWAY	S SOUTH	BOC BACK OF CURB	FOC FACE OF CURB	SCA SIDE CABLE ARM
O/S OFFSET	E EAST	BOW BACK OF SIDEWALK	GRC GALVANIZED RIGID CONDUIT	SLP STREET LIGHT PROTECTED
R/W RIGHT OF WAY	W WEST	BP BORE PIT	HT HEIGHT	SLU STREET LIGHT UNPROTECTED
S/W SIDEWALK		DG DOWNGUY	HDG HOT DIPPED GALVANIZED	SL STREET LIGHT
N/O NORTH OF		FC FIBERGLASS CONDUIT	ID INNERDUCT	CATV CABLE TELEVISION
S/O SOUTH OF		FGA FIBERGLASS ARM	MGN MULTI-GROUNDED NEUTRAL	TEL TELEPHONE
E/O EAST OF		DOC DEPTH OF COVER	MIN MINIMUM	VGR VERTICAL GROUND ROD
W/O WEST OF		FDC FIBER DUCT IN CONCRETE	OD OUTSIDE DIAMETER	WT WEIGHT
		FO FIBER OPTIC	PL PLACE	W-W WALL TO WALL FOOTAGE
		NT NO TAG	PWR POWER	P-W POLE TO WALL FOOTAGE
		NV NOT VISIBLE	PUE PUBLIC UTILITY EASEMENT	BE BUILDING ENTRY
		BT BLANK TAG		

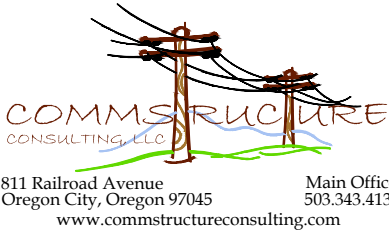
EXISTING	PROPOSED
<div>UTILITY POLE</div>	<div>UTILITY POLE</div>
<div>SPLICE</div>	<div>SPLICE</div>
<div>MID-SHEATH SPLICE</div>	<div>MID-SHEATH SPLICE</div>
<div>VAULT/BUILDING STORAGE</div>	<div>VAULT/BUILDING STORAGE</div>
<div>FIBER SYMBOL</div>	<div>FIBER SYMBOL</div>
<div>FT AERIAL STORAGE</div>	<div>FT AERIAL STORAGE</div>
<div>POWER ANCHOR & GUY</div>	<div>ANCHOR & GUY</div>
<div>POWER S/W ANCHOR & GUY</div>	<div>DOWNGUY TO EXISTING ANCHOR</div>
<div>COMM ANCHOR & GUY</div>	<div>S/W ANCHOR & GUY</div>
<div>COMM S/W ANCHOR & GUY</div>	<div>DOWNGUY TO EXISTING S/W ANCHOR</div>
<div>VGR GROUND</div>	<div>VGR GROUND</div>
<div>INTERIOR BOND</div>	<div>INTERIOR BOND</div>

DETAILS AND SECTIONS CALLOUT SYMBOLOGY



EXISTING	PROPOSED
<div>TELECOMM</div> <div>CABLE MARKER</div> <div>CABLE MARKER E/W GROUND LUGS</div> <div>LOCATE TERMINAL ACCESS POINT</div> <div>GROUND ROD</div> <div>CATV RISER</div> <div>TELECOMM MANHOLE</div>	<div>CABLE MARKER</div> <div>CABLE MARKER E/W GROUND LUGS</div> <div>LOCATE TERMINAL ACCESS POINT</div> <div>GROUND ROD</div> <div>SIGNAL CONTROLLER</div>
<div>POWER</div> <div>POWER TRANSFORMER</div> <div>POWER METER</div>	
<div>TRAFFIC</div> <div>CROSS WALK SIGNAL</div> <div>R/R CROSSING SIGNAL</div> <div>JUNCTION BOX</div> <div>TRAFFIC SIGNAL POLE</div> <div>SIGNAL CONTROLLER</div> <div>RAILROAD ARM</div> <div>SIGN</div>	
<div>STORM</div> <div>AREA DRAIN</div> <div>CATCH BASIN</div> <div>STORM SEWER</div>	
<div>WATER</div> <div>BLOW OFF</div> <div>FIRE CONNECTION</div> <div>FIRE HYDRANT</div> <div>IRRIGATION METER</div> <div>IRRIGATION VALVE</div> <div>WATER METER</div> <div>WATER VALVE</div> <div>WATER VAULT</div>	
<div>TOPO</div> <div>BOLLARD</div> <div>GAS VALVE</div> <div>GAS METER</div> <div>LUMINAIRE</div> <div>MAILBOX</div> <div>PROPERTY CORNER</div> <div>MONUMENT SURVEY</div> <div>PARKING METER</div> <div>SANITARY SEWER</div> <div>STEEL PILING</div> <div>TREE</div>	

45'/4/D(T)=POLE HT/CLASS/DISTRIBUTION(TRANSMISSION)
P.O.A.=_____ <-PROPOSED POINT OF ATTACHMENT



DESIGNED BY: CCLLC
CHECKED BY: CCLLC DRAWN BY: CCLLC

REVISIONS				
REV	DESCRIPTION	DATE	BY	APP

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information at the speed of light

CLACKAMAS BROADBAND EXPRESS
STANDARD PLANS FOR CONSTRUCTION
LEGEND

CITY: CITY – TOWNSHIP RANGE SECTION:			COUNTY: COUNTY CO., STATE	
PLOT DATE: 12/06/2016	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG – TAB_SHEET # CBX-DT00.DWG – LG01_1.2	SHEET 1.2	

SPECIFICATION SET

SITE CONDITIONS:

THE LOCATIONS OF EXISTING UTILITIES SHOWN IN THIS PLAN ARE APPROXIMATE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES. UTILITIES MAY EXIST IN THE AREA IN ADDITION TO THOSE SHOWN ON THE PLAN. THE CONTRACTOR SHALL CONTACT PROPERTY OWNERS WHEN WORKING WITHIN PRIVATE EASEMENTS FOR LOCATION OF UNDERGROUND TANKS, PIPELINES, DRAIN TILES, OR OTHER BURIED IMPROVEMENTS. THE CONTRACTOR SHALL ALSO NOTIFY THE UTILITY NOTIFICATION CENTER PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITIES.

THE CONTRACTOR MUST ASSUME ALL BURIED UTILITIES ENCOUNTERED ARE LIVE AND ACTIVE UNLESS SPECIFICALLY INSTRUCTED OTHERWISE BY THE OWNERS OR OPERATORS OF SAID UTILITIES. REPAIR OF ANY DAMAGED CONDUIT CONTAINING CABLE SHALL BE MADE BY USE OF PVC SPLIT DUCT OR MATCH EXISTING. DAMAGE TO SUB-SURFACE STRUCTURES IS THE SOLE RESPONSIBILITY OF THE PLACING CONTRACTOR.

THE CONTRACTOR SHALL PROTECT THE EXISTING TRAFFIC CONTROL LOOPS. IF EXISTING TRAFFIC CONTROL LOOPS ARE DAMAGED DURING CONSTRUCTION, THE ENTIRE LOOP WIRE FROM TERMINAL TO TERMINAL SHALL BE REPLACED IN ACCORDANCE WITH GOVERNING AGENCY STANDARDS AND REGULATIONS AT CONTRACTOR'S EXPENSE.

REMOVAL OF EXISTING ASPHALT PAVEMENT, CONCRETE CURBS, AND CONCRETE SIDEWALKS WILL BE "NEAT LINE" WITH SAW OR PAVEMENT CUTTER, PER REQUIREMENTS AND SPECIFICATIONS OF THE AGENCY OR DEPARTMENT RESPONSIBLE FOR EACH LOCATION. IF CONCRETE PAVEMENT IS ENCOUNTERED WHILE EXCAVATING CONDUIT TRENCHES, THE CONCRETE REMOVAL WILL BE "NEAT LINE" WITH A PAVEMENT SAW.

IF CONCRETE CURB RETURNS AND/OR SIDEWALKS ARE REPLACED DUE TO CONDUIT OR MANHOLE INSTALLATION, THE CONTRACTOR SHALL PLACE APPROVED HANDICAPPED SIDEWALK AND CURB ACCESS RAMPS IN CONFORMANCE WITH STATE STATUTES.

ALL MATERIALS NECESSARY FOR THE REPAIR OF STREETS, CURBS, SIDEWALKS, SANITARY SEWERS, STORM SEWERS, AND PUBLIC SERVICE UTILITIES, AND THE INSTALLATION OF SUCH MATERIALS SHALL BE IN CONFORMANCE WITH THE REQUIREMENTS AND SPECIFICATIONS OF THE AGENCY OR DEPARTMENT RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE REPAIRED FACILITY.

ALL OPEN TRENCH WILL BE CLEARLY MARKED WITH BARRICADES OR CONES. STEEL PLATES OR OTHER TYPES OF BRIDGING SHALL BE PROVIDED TO COVER OPEN TRENCH IN THE TRAVEL PORTION OF THE STREETS. THESE PLATES OR BRIDGING SHALL BE ADEQUATE TO SUPPORT THE NORMAL VEHICLE LOADS ANTICIPATED IN THIS AREA AND SHALL BE IN PLACE DURING ALL NON-WORKING AREAS.

ALL SURFACES TO BE RESTORED TO ORIGINAL CONDITION, AND BACKFILL TO BE COMPACTED AS SPECIFIED. TRENCH EXCAVATION IN SURFACES WHICH INCLUDE CONCRETE TREATED BASE SHALL FOLLOW LOCAL AREA SPECIFICATIONS.

ALL WORK SHALL CONFORM TO THE SPECIFICATIONS OF THE JURISDICTIONAL PERMIT AGENCY.

TEMPORARY BACKFILL:

THE CONTRACTOR SHALL BE REQUIRED TO MAINTAIN NORMAL TRAFFIC MOVEMENT DURING NON-WORK PERIODS FOR ALL CONSTRUCTION ACTIVITY WITHIN THE LIMITS OF CITY STREETS BY THE USE OF STEEL PLATES (DESIGNED FOR H-20 LOADING) OR BACKFILLING THE TRENCH. IF THE CONTRACTOR ELECTS TO BACKFILL THE TRENCH HE SHALL "CAP" THE TRENCH WITH A 2"(COMPACTED MINIMUM) DEPTH OF CLASS "C" ASPHALTIC CONCRETE COLD MIX. IF THE CONTRACTOR ELECTS TO PLATE THE TRENCH THE PLATES SHALL BE PINNED AT EACH CORNER AND THE EDGES SHALL BE "RAMPED" WITH CLASS "C" ASPHALTIC CONCRETE COLD MIX TO PREVENT "WHEEL SHOCK" ON IMPACT. COLD MIX SHALL BE COMPACTED AND SMOOTH IN EITHER TYPE OF INSTALLATION. TO PREVENT SKIDDING, TRAFFIC PLATES SHALL BE TREATED WITH WELD BEADS TO PROVIDE TRACTION. WELD BEADS SHALL BE LOCATED 4" ON CENTER AND EXTEND THROUGH THE TRAVEL PORTIONS OF THE PLATES. USE OF STEEL PLATES IN THE ROW TO BE APPROVED BY THE GOVERNING PERMIT AGENCY.

BACKFILL:

BACKFILL OF CONDUIT TRENCH OR MANHOLE EXCAVATION SHALL BE 3/4" – 0 CRUSHED ROCK PLACED IN 6" LIFTS AND COMPACTED WITH MECHANICAL VIBRATING TYPE COMPACTION EQUIPMENT TO 95% OF MAXIMUM DRY DENSITY (ASTM D-1550 OR AASHTO T-180) UNDER ALL PAVED SURFACES UNLESS OTHERWISE SPECIFIED.

BACKFILL OF CONDUIT TRENCH OR MANHOLE EXCAVATION IN NON-PAVED AREAS SHALL BE CLEAN SAND OR SILTY LOAM SOILS PLACED IN 1'-0" LIFTS COMPACTED BY MECHANICAL VIBRATING TYPE COMPACTION EQUIPMENT TO 95% OF MAXIMUM DRY DENSITY (ASTM D698 OR AASHTO T-99) UNLESS OTHERWISE SPECIFIED.

BACKFILL AROUND ALL VAULTS SHOULD CONSIST OF COMPACTED SELECT BACKFILL MATERIAL OR IN ACCORDANCE WITH AGENCY SPECIFIED BACKFILL. IN NO CASE SHALL THE MATERIAL BE SATURATED OR CONTAIN LARGE ROCKS OR CHUNKS. NO VOIDS SHALL REMAIN BETWEEN THE VAULT WALLS AND THE NATIVE SOIL. BACKFILL AROUND VAULTS SHALL NOT BE PLACED UNTIL THE ENTIRE VAULT STRUCTURE IS IN PLACE INCLUDING ALL LIDS AND RISERS, BEING SURE TO COMPACT FILL MATERIAL FROM BOTTOM TO TOP SURFACE.

SAND MAY BE WATER SETTLED IF THAT TYPE OF COMPACTION IS ALLOWED BY THE PERMITTING AGENCY IN EITHER PAVED OR NON-PAVED SITUATIONS. THE CONTRACTOR SHALL VERIFY THE TYPE OF COMPACTION ALLOWED PRIOR TO BEGINNING ANY BACKFILL ACTIVITY.

BACKFILL SHALL BE PLACED IN ACCORDANCE WITH THE SPECIFICATIONS AND REGULATIONS OF THE JURISDICTIONAL PERMIT AGENCY.

HAZARDOUS MATERIALS:

THE CONTRACTOR SHALL NOTIFY THE JURISDICTIONAL PERMIT AGENCY IMMEDIATELY IF ANY MATERIALS ARE ENCOUNTERED THAT MAY BE CONSIDERED HAZARDOUS BY THE EPA, DEQ, OR OSHA. IF POTENTIALLY HAZARDOUS MATERIALS ARE ENCOUNTERED THE CONTRACTOR SHALL SECURE THE SITE AND PREVENT ACCIDENTAL EXPOSURE TO THE PUBLIC OR THE CONTRACTOR'S PERSONNEL.

THE CONTRACTOR MAY EXCAVATE UP TO, BUT SHALL NOT DISTURB KNOWN HAZARDOUS MATERIALS SUCH AS ASBESTOS, OILS, ACID, ETC. THE REMOVAL OF ALL HAZARDOUS MATERIALS MUST BE DONE BY A LICENSED HAZARDOUS MATERIALS CONTRACTOR AND IN ACCORDANCE WITH JURISDICTIONAL AGENCY REQUIREMENTS.

LANDSCAPING:

TREE AND PLANT PROTECTION TO CONFORM WITH THE AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) SECTION A300 PART 1 –10 AS APPLICABLE. ANY DEVIATION FROM INDUSTRY APPROVED TREE AND PLANT CARE TO BE CLEARED WITH THE GOVERNING PERMIT AGENCY REPRESENTATIVE AND OR ADJOINING PROPERTY OWNER PRIOR TO ANY PRUNING OR EXCAVATION.

AT NO POINT IN TIME SHALL THE CONTRACTOR REMOVE ANY TREES OR SHRUBS WITH OUT PREVIOUS AUTHORITY FROM THE GOVERNING PERMIT AGENCY.

EXCAVATION IN LAWN AREAS SHALL BE "NEAT LINED" WITH A SOD CUTTER TO ENSURE A SMOOTH MATCH LINE FOR REPAIR WITH APPROVED SOD.

ALL LAWN RESTORATION SHALL BE DONE BY USING SOD PLACED TO THE GROWER/SUPPLIERS SPECIFICATIONS AND ADJACENT PROPERTY OWNER'S SPECIFICATIONS.

SOD USED TO REPAIR EXISTING LAWN AREA SHALL BE OF A BLEND THAT WILL MATCH THE ADJACENT UNDISTURBED LAWN AREA FOR BOTH COLOR AND TEXTURE.

PRIVATE IRRIGATION SYSTEMS ARE OCCASIONALLY LOCATED WITHIN THE PUBLIC RIGHT-OF-WAY OF ADJACENT STREET AREAS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR OPERATION AND REPAIR IF DAMAGE OCCURS DURING HIS CONSTRUCTION ACTIVITY. PRIVATE IRRIGATION SYSTEMS LOCATED ON PRIVATE PROPERTY DAMAGED BY CONSTRUCTION ACTIVITY SHALL BE REPAIRED IMMEDIATELY TO THE OWNER'S SATISFACTION AT NO COST TO THE OWNER.

IN DEVELOPED (PROFESSIONALLY) LANDSCAPED AREAS, NO WORK SHALL BE DONE WITHOUT THE OWNER'S WRITTEN PERMISSION OR AUTHORIZATION.

STRUCTURE PROTECTION:

VAULTS AND CONDUIT TO BE PLACED ADJACENT TO EXISTING STRUCTURES SUCH AS BRIDGE FOOTINGS, PIERS, BUILDING FOUNDATIONS, WALLS, POWER AND TELEPHONE POLES, AND OTHER UTILITIES SHALL MAINTAIN A MINIMUM CLEARANCE AS SHOWN. THE CONTRACTOR SHALL NOT UNDERMINE ANY ADJACENT STRUCTURE WITHOUT SPECIFIC WRITTEN PERMISSION FROM THE OWNER/OPERATOR OF SUCH STRUCTURE.

EXISTING UTILITIES EXPOSED DURING EXCAVATION SHALL BE 100% SUPPORTED BY BOTH TRENCH BRIDGING AND SUSPENSION OR BY THE USE OF LONGITUDINAL TRAYS OR PLATFORMS VERTICALLY SUPPORTED BY ADJUSTABLE BUILDING JACKS.

EXISTING SPLICE CASES AND CABLES SHALL BE SUPPORTED AT A MAXIMUM SPACING OF 4.0 FEET AND SHALL CONSIST OF A CANVAS SLING WITH NYLON BELTING OR ROPE. ALL CABLE SUPPORTS SHALL BE PLACED IN A MANNER THAT PREVENTS KINKS OR OTHER DAMAGE TO THE CABLE SHEATH.

AN ACCEPTABLE ALTERNATIVE TO CABLE SLINGS WOULD BE THE UTILIZATION OF A WIDE FLANGE "I" BEAM OR CHANNEL AS A "CABLE TRAY" WITH THE CABLES/CASES BANDED IN PLACE.

SHORING:

THE CONTRACTOR SHALL PROVIDE SHORING FOR CONDUIT TRENCH EXCAVATION 42" OR MORE IN DEPTH AS MEASURED FROM THE HIGH SIDE OF THE TRENCH AND FOR ALL MANHOLE EXCAVATION.

MANHOLE SHORING SHALL BE TIGHT-SHEETED.

ALL SHORING SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE JURISDICTIONAL PERMIT AGENCY AND THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).

SHORING SHALL BE DESIGNED TO MEET H-20 HIGHWAY LOADING CRITERIA.

THE CONTRACTOR SHALL PROVIDE ALL SHORING AND DESIGN CALCULATIONS TO THE PERMIT ISSUING AGENCY PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITY.

EXISTING UTILITY SERVICES:

ANY UTILITY DAMAGED BY CONSTRUCTION ACTIVITY SHALL BE RETURNED TO FULL SERVICE IMMEDIATELY AND ANY COST OR EXPENSE CONSIDERED TO BE LOST BY THE UTILITY USER SHALL BE THE CONTRACTOR'S RESPONSIBILITY. IN THE EVENT OF ANY DAMAGE TO AN EXISTING UTILITY THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY OWNER AND THE PROJECT MANAGER.

LANDSCAPE AREAS SERVED BY IRRIGATION SYSTEMS SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION BY THE UTILIZATION OF TEMPORARY SOURCES OF IRRIGATION WATER OR BY MAKING TEMPORARY REPAIRS TO THE DAMAGED SYSTEM TO ALLOW ITS SATISFACTORY OPERATION.

SPECIAL UTILITY CLEARANCES:

ALL WORK CONDUCTED ADJACENT TO WATER MAINS, STORM SEWERS, OR SANITARY SEWERS SHALL CONFORM TO THE FOLLOWING CONDITIONS, UNLESS OTHERWISE SPECIFIED BY THE GOVERNING PERMIT AGENCY:

- A. PARALLEL CONDUIT SHALL MAINTAIN A HORIZONTAL SEPARATION OF 5.0 FEET, MEASURED SURFACE TO SURFACE. (OUTSIDE EDGE TO OUTSIDE EDGE)
- B. PERPENDICULAR CONDUIT PASSING UNDER OR OVER UTILITIES MUST MAINTAIN 12" VERTICAL CLEAR SEPARATION.
- C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING THIS REQUIRED VERTICAL SEPARATION BY EITHER EXPOSING THE UTILITY EVERY 100 FEET IN THOSE AREAS WHERE HORIZONTAL SEPARATION IS LESS THAN 5.0 FEET OR BY UTILIZING KNOWN DEPTHS OF ADJACENT FACILITIES. IF THE CONTRACTOR UTILIZES THE ADJACENT FACILITIES TO DETERMINE DEPTH, HE SHALL CONTACT THE GOVERNING AGENCY AT EACH SUCH LOCATION AND THE AGENCY WILL DETERMINE THE NECESSARY DEPTH OF THE TOP OF THE CONDUIT AT THAT POINT.
- D. THE VERTICAL AND HORIZONTAL SEPARATION SHALL BE MAINTAINED AT ALL TIMES UNLESS SPECIFICALLY STATED OTHERWISE BY THE JURISDICTIONAL PERMIT AGENCY. ANY SPECIFIC DEVIATION IN VERTICAL AND HORIZONTAL SEPARATION FROM THOSE DESCRIBED SHALL BE REPORTED TO THE OWNER BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING VERTICAL AND HORIZONTAL SEPARATION AT ALL TIMES AND SHALL BE RESPONSIBLE FOR ANY AND ALL ENCROACHMENTS.

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information at the speed of light

CLACKAMAS BROADBAND EXPRESS
STANDARD PLANS FOR CONSTRUCTION
GENERAL NOTES

CITY: CITY – TOWNSHIP RANGE SECTION:			COUNTY: COUNTY CO., STATE	
PLOT DATE: 12/06/2016	SCALE: AS SHOWN	PROJECT NAME--FILENAME.DWG – TAB_SHEET # CBX-DT00.DWG – GN01_1.3	SHEET	1.3

SPECIFICATION SET

PROTECTION OF EXISTING SURVEY MONUMENTS:

THE CONTRACTOR SHALL REPLACE ALL MONUMENTS THAT DEFINE PROPERTY OWNERSHIP SUCH AS IRON RODS, IRON PIPES, BRASS SCREWS, AND REFERENCE POINTS AS REQUIRED BY THE GOVERNING STATE STATUTES. ANY CORNER OR REFERENCE TO A CORNER OF A RECORD OF SURVEY SHALL BE REPLACED BY A LICENSED SURVEYOR WITHIN 90 DAYS OF ITS REMOVAL.

REPLACEMENT MONUMENTS SHALL CONFORM TO STATE STATUTES AS TO TYPE AND STYLE OF IDENTIFICATION WITH THE NECESSARY RECORD OF SURVEY IDENTIFYING WHAT WAS FOUND ORIGINALLY AND WHAT WAS SET AND THE DATE THE REPLACEMENT WAS SET. THE RECORD OF SURVEY SHALL BE COMPLETED IN CONFORMANCE WITH THE REGULATIONS OF THE RELEVANT STATE AND THE JURISDICTIONAL PERMIT AGENCY SURVEYOR.

IT IS THE CONTRACTORS RESPONSIBILITY TO UNDERSTAND AND COMPLY WITH THE JURISDICTIONAL STATUTES SET FORTH BY THE RELEVANT GOVERNING AGENCY.

CONSTRUCTION STAKING:

IN AREAS WHERE THE CONDUIT ALIGNMENT IS NOT CLEARLY DEFINED BY CURB LINES, FENCE LINES, OR OTHER EVIDENCE OF THE RIGHT-OF-WAY, IT IS RECOMMENDED THAT THE CONTRACTOR COORDINATE WITH A PROFESSIONAL SURVEYOR TO PROVIDE STAKING OR PAINT MARKS TO CLEARLY IDENTIFY THE PROPOSED ALIGNMENT.

IF ADDITIONAL FIELD STAKING OF PROPOSED CONDUIT ALIGNMENTS AND VAULT LOCATIONS IS REQUIRED, THE CONTRACTOR IS TO CONTACT THE INSPECTOR AND THE PROJECT DESIGNER TO SCHEDULE A FIELD MEET PRIOR TO CONSTRUCTION.

IF DISCREPANCIES BETWEEN PROFESSIONALLY SURVEYED RIGHT-OF-WAY AND THE PROPOSED ALIGNMENT ARE IDENTIFIED CONTRACTOR IS TO NOTIFY THE REGULATORY PERMIT AGENCY INSPECTOR AND THE PROJECT DESIGNER PRIOR TO CONSTRUCTION.

TRAFFIC CONTROL:

WORK ON ANY PUBLIC OR PRIVATE ROW WITH OR WITHOUT PERMIT THROUGH THE GOVERNING AGENCY MAY REQUIRE ADEQUATE TRAFFIC CONTROL TO PERFORM CONSTRUCTION ACTIVITIES.

TRAFFIC WARNING DEVICES AND SIGNS SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS (U.S. GOVERNMENT PRINTING OFFICE) AND TO THE GOVERNING AGENCY STANDARD SPECIFICATIONS. HIGH LEVEL WARNING TYPE DEVICES ARE TO BE USED AT ALL TIMES AND SPECIAL WARNING DEVICES MAY BE STIPULATED BY THE JURISDICTIONAL PERMIT AGENCY AT ANY TIME THE USE WILL ADD TO THE SAFETY AND PROTECTION OF TRAFFIC OR PEDESTRIANS IN THE CONSTRUCTION AREA.

A TRAFFIC CONTROL PLAN SHALL BE PREPARED BY THE CONTRACTOR AS REQUIRED AND SUBMITTED TO EACH PERMITTING AGENCY REQUESTING SUCH PLAN FOR REVIEW AND APPROVAL OR REVISION PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITY FOR THIS PROJECT. THE APPROVED PLAN SHALL BE SUBMITTED TO THE AGENCY AND A COPY OF THE PLAN SHALL BE KEPT AT THE CONSTRUCTION SITE AND MUST BE READILY AVAILABLE FOR REVIEW BY AGENCY REPRESENTATIVES.

PERMITS – FRANCHISES – EASEMENTS:

PHYSICAL WORK SHALL NOT BE STARTED UNTIL THE GOVERNING AGENCY INSPECTOR AND THE CONTRACTOR ARE IN POSSESSION OF AND HAVE CAREFULLY REVIEWED AND FULLY UNDERSTAND ALL CONDITIONS AND SPECIFICATIONS SET FORTH IN THE REQUIRED PERMITS, FRANCHISES, AND/OR EASEMENTS.

THE PLACING FOREMAN SHALL HAVE A COPY OF THE PERMITS/EASEMENTS ON SITE AT ALL TIMES.

ANY CONFLICT BETWEEN WORK PRINT SPECIFICATIONS AND SPECIFICATIONS SET FORTH UNDER RELATED PERMITS, FRANCHISES, AND/OR EASEMENTS MUST BE CLEARED BY PROPER COMPANY AUTHORITY BEFORE PROGRESSING WITH WORK INVOLVED.

AERIAL NOTES:

ALL AERIAL CONSTRUCTION IS TO BE PERFORMED TO INDUSTRY ACCEPTABLE STANDARDS.

ALL NEW OR EXISTING CABLE HEIGHTS OF ATTACHMENT TO BE DOCUMENTED AT TIME OF CONSTRUCTION.

6.6M STRAND TO BE USED WITH STANDARD 5/8"POLE LINE HARDWARE UNLESS OTHERWISE SPECIFIED. BOND STRAND TO POWER MGN WHERE APPLICABLE.

ALL EXTENSION ARMS TO BE PLACED WILL BE EPOXY ARMS UNLESS OTHERWISE NOTED OR APPROVED BY THE INSPECTOR.

PUPI ARMS TO BE TYPE TB2000 UNLESS OTHERWISE SPECIFIED AND ARE TO BE INSTALLED ACCORDING TO THE POLE OWNER SPECIFICATIONS OR MANUFACTURER SPECIFICATIONS. POLE OWNER SPECIFICATIONS MAY SUPERSEDE MANUFACTURER SPECIFICATION FOR INSTALLATION AS REQUIRED. TYPICAL INSTALLATION INCLUDES UTILIZING TWO (2) THROUGH BOLTS AND NO LAG BOLTS.

ALL ANCHORS TO BE USED WILL BE 3/4 SCREW IN TYPE.

ALL STRAPS WILL BE PLACED 4" BEFORE AND AFTER EVERY SUPPORTING CLAMP AT A MINIMUM OF 21" APART. REPAIR / REPLACE EXISTING LASHING WIRE IF DAMAGED, AND ADD ANY MISSING GROUNDS.

CONTRACTOR TO PLUG ALL VACATED HOLES FROM ABANDONED OR RELOCATED ATTACHMENTS PER POLE OWNER SPECIFICATIONS.

IT IS THE CONTRACTORS RESPONSIBILITY TO MAINTAIN AND FOLLOW NATIONAL ELECTRIC SAFETY CODE ALONG WITH APPLICABLE LOCAL AND REGIONAL GOVERNING AUTHORITIES. ANY DISCREPANCIES BETWEEN THESE AUTHORITIES AND OR THE CONSTRUCTION PRINTS IS TO BE VALIDATED WITH THE DESIGNER OR OWNER PRIOR TO CONSTRUCTION.

CONDUITS:

ALL DIRECT BURIED CONDUIT SHALL BE PVC HEAVY WALL (SCH 40) OR HDPE SDR11 DIRECT BURIAL UNLESS OTHERWISE SPECIFIED.

CONTRACTOR SUPPLIED MATERIALS SHALL CONFORM TO THE JURISDICTIONAL PERMIT AGENCY AND OWNER SPECIFICATIONS.

ALL CONTRACTOR SUPPLIED MATERIALS SHALL INCLUDE A CERTIFIED TEST REPORT CLEARLY STATING THAT THOSE SUPPLIED MATERIALS COMPLY WITH ANY SUCH SPECIFICATION.

ALL CONDUIT IS TO BE PLACED IN THE LOCATION SHOWN ON THE DESIGN PRINTS WITH MINIMUM COVER OF 36 INCHES OR AS NOTED ON THE DRAWINGS OR SPECIFIED BY THE REGULATORY PERMIT AGENCY.

THE TOTAL LENGTH OF TRENCH OPEN AT ANY ONE TIME IS TO BE KEPT TO A MINIMUM.

ALL HDPE CONDUITS ENTERING VAULTS SHALL HAVE A MINIMUM 5.0 FOOT STRAIGHT SECTION OF SCH 40 PVC CONDUIT SLEEVE. THIS STRAIGHT SECTION SHALL BE PERPENDICULAR TO THE WALL OF SAID MANHOLE AND SHALL BE SMOOTH AND FREE OF ALL BURRS AND OTHER FEATURES THAT MAY DAMAGE CABLES. PLUGS SHALL BE UTILIZED TO ORGANIZE, SECURE AND SEAL THE HDPE CONDUITS WITHIN THE SLEEVE AS THEY ENTER THE VAULT.

ALL PVC OR HDPE CONDUITS ARE TO BE PLUGGED WITH COMPRESSION STYLE PLUGS. ANY CONDUITS CONTAINING FIBER CABLES WILL REQUIRE SIMPLEX COMPRESSION PLUGS SEALING THE CONDUIT AROUND THE CABLE.

CASINGS:

ANY REQUIRED STEEL CASING PIPE SHALL BE 100% FILET WELD (3/16") OR THREADED COUPLING. IF WELDED THE CONTRACTOR SHALL PROVE THE INTERIOR DIMENSION BY PULLING A MANDREL COMPLETELY THROUGH THE WELDED JOINT IN BOTH DIRECTIONS. PIPE JOINTS SHALL BE STEEL BRUSHED AND PAINTED WITH A ZINC RICH FLAT BLACK METAL PRIMER PAINT.

VAULTS / HANDHOLES:

ALL VAULTS TO BE UTILITY VAULT PRECAST TYPE 444--LA UNLESS OTHERWISE SPECIFIED. 444--LA VAULTS ARE TO BE FULLY EQUIPPED WITH LADDERS, CABLE RACKS, SUPPORTS, AND PULLING IRONS AS SHOWN BELOW:

- (4) "L" BRACKETS
- (4) 8 HOLE – 113/4" CUT RACKS
- (4) SPRING NUT & SCREWS – (1/2" NUT, 1/2" X 1 1/4" PLATED CAP SCREW)

MOUNT BRACKETS ON 2' GALVANIZED "C" CHANNELS, 2 EA. SIDE, 18" APART

ALL VAULTS SHALL HAVE A SUMP CAST IN PLACE FOR DE--WATERING

GROUND COVER OVER ALL VAULTS SHOULD BE 36" MINIMUM DEPTH BELOW FINISHED STREET OR SIDEWALK ELEVATION UNLESS OTHERWISE SPECIFIED IN THE VAULT DETAILS OR ON ANY RIGHT-OF-WAY PERMIT ISSUED. IN ADDITION, DEPTH OF COVER OVER MANHOLES SHALL NOT EXCEED 60" OF COVER TO THE TOP OF THE VAULT OR PER VAULT MANUFACTURER'S SPECIFICATIONS.

EXCAVATION OVER VAULTS IS CONSIDERED PART OF THE TOTAL VAULT INSTALLATION.

IF ANY FIELD SLOTTING OF PRECAST CONCRETE VAULTS IS REQUIRED TO PROVIDE ACCESS FOR CABLES AND CONDUIT NOT PROVIDED WITH A BLOCKOUT FOR THAT PURPOSE; THE FIELD SLOT SHALL BE REPAIRED BY SPLICING ANY REINFORCING REBAR THAT HAS BEEN CUT TO ALLOW CABLE ENTRY AND SHALL BE SEALED WITH NON--SHRINK CONCRETE GROUT. THE CONTRACTOR SHALL NOTIFY OWNER IMMEDIATELY IF IT BECOMES EVIDENT FIELD SLOTTING WILL BE NECESSARY. FIELD SLOTS SHALL BE SAWCUT (SCORED INSIDE AND OUT) AND BRUSH HAMMER TO PROVIDE A ROUGHENED SURFACE FOR GROUT BONDING AND TO MINIMIZE REINFORCING SPLICES.

EXCAVATION FOR ALL PRECAST VAULTS AND HANDHOLES MUST ALLOW FOR OVERALL ASSEMBLED HEIGHT OF THE VAULT PLUS ADDED HEIGHT OF RISERS AND BEDDING MATERIAL CONSISTING OF 6" OF COMPACTED SAND OR GRAVEL, GRADED LEVEL. A MINIMUM EXCAVATION CLEARANCE OF 4" AROUND THE SIDEWALLS OF THE VAULT IS REQUIRED FOR EASE OF INSTALLATION.


BACKFILL AROUND ALL VAULTS SHOULD CONSIST OF COMPACTED SELECT BACKFILL MATERIAL OR IN ACCORDANCE WITH AGENCY SPECIFIED BACKFILL. IN NO CASE SHALL THE MATERIAL BE SATURATED SOIL, OR CONTAIN LARGE ROCKS OR CHUNKS. NO VOIDS SHOULD REMAIN BETWEEN THE VAULT WALLS AND NATIVE SOIL OF EXCAVATION. BACKFILLING SHOULD NOT BE DONE UNTIL THE VAULT IS COMPLETELY ASSEMBLED MAKING CERTAIN TO COMPACT THE BACKFILL PROGRESSIVELY IN 12" LIFTS FROM THE BOTTOM TO THE TOP SURFACE. WHEN USING MECHANICAL VIBRATORY EQUIPMENT TO OBTAIN 95% COMPACTION NEAR COMPOSITE VAULTS AND HANDHOLES, CONTRACTOR IS TO PLACE INTERNAL CROSS--BRACING PER MANUFACTURER SPECIFICATIONS.

ALL BACKFILLING IS THE RESPONSIBILITY OF THE CONTRACTOR.

ALL GROUTING OF RISERS, COVERS, CONDUIT, OR SPECIFIC SECTIONS OF VAULTS IS THE RESPONSIBILITY OF THE CONTRACTOR. NON--SHRINK CONCRETE GROUT WILL BE USED TO SEAL ALL JOINTS AND APPLIED IN A MANNER TO ENSURE COMPLETE FILLING OF VOIDS IN THE JOINT BEING SEALED.

ACCESS DOORS SHALL BE CONSTRUCTED OF STEEL, ALUMINUM, OR CONCRETE WITH AN APPROVED NON--SLIP SURFACE HAVING A STATIC COEFFICIENT OF FRICTION BETWEEN 0.60 AND 1.00 AS DETERMINED BY ASTM DESIGNATION C 1028--89. ACCESS DOORS ON INCLINED SURFACES GREATER THAN 4 % SHALL HAVE A COEFFICIENT OF FRICTION BETWEEN 0.80 AND 1.00.

OWNERS ARE RESPONSIBLE TO MAINTAIN THE NON--SLIP CHARACTERISTICS OF THE ACCESS DOOR OVER ITS LIFE IN THE SIDEWALK AREA.



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CLACKAMAS BROADBAND EXPRESS
STANDARD PLANS FOR CONSTRUCTION
GENERAL NOTES

CITY: CITY – TOWNSHIP RANGE SECTION:

COUNTY: COUNTY CO., STATE

PLOT DATE:
12/06/2016

SCALE:
AS SHOWN

PROJECT NAME--FILENAME.DWG – TAB_SHEET #
CBX--DT00.DWG – GN02_1.4

SHEET
1.4

SPECIFICATION SET

EXISTING MANHOLE ACCESS:

THE CONTRACTOR SHALL CORE DRILL EXISTING CONCRETE WALLS TO PROVIDE ACCESS FOR CONDUIT AS SHOWN IN THE PLANS. CORE DRILLING SHALL PROVIDE A MINIMUM 1 INCH LARGER DIAMETER HOLE THAN THE SIZE OF CONDUIT BEING PLACED. THE CONTRACTOR SHALL SEAL THE VOID BETWEEN THE CONDUIT AND THE CONCRETE WITH NON-SHRINK EPOXY GROUT.

THE CONTRACTOR SHALL REPAIR ANY STRUCTURAL REINFORCING DAMAGED BY CORE DRILLING. REINFORCING REPAIR SHALL BE IN CONFORMANCE WITH THE REQUIREMENTS AND SPECIFICATIONS OF CRSI (CONCRETE REINFORCED STEEL INSTITUTE).

IF THE CONTRACTOR ELECTS TO ADJUST AN ACCESS HOLE IN WHICH REINFORCING WAS FOUND TO AVOID DAMAGE TO THE REINFORCING STEEL HE SHALL FULLY EXPOSE THE SURFACE OF THE REBAR AND FIELD COAT THE BAR WITH A ZINC RICH PAINT BEFORE PLACING NON-SHRINK EPOXY GROUT TO REPAIR DAMAGE.

LOCATORS AND MARKERS:

THE CONTRACTOR IS RESPONSIBLE FOR PLACING APPROPRIATE MARKERS TO INSURE THAT OTHER UTILITIES WORKING IN THE AREA OF OWNER FACILITIES ARE AWARE OF THEIR PRESENCE BEFORE DAMAGE CAN OCCUR. MARKING WILL BE MADE BY USE OF "WARNING TAPE" AND "POST MARKERS" FOR CONDUIT, AND 3M ELECTRONIC MARKER SYSTEM (EMS) LOCATORS FOR VAULTS AND HANDHOLES.

"WARNING TAPE" SHOULD BE PLACED A MINIMUM OF 12" ABOVE ANY CONDUIT ALONG THE ENTIRE TRENCH ROUTE, WHILE ADDITIONALLY "POST MARKERS" SHOULD BE PLACED EVERY 500' IN SUBURBAN AREAS AND 1000' IN RURAL AREAS.

BOTH VAULTS AND HANDHOLES ARE TO BE EQUIPPED WITH EMS LOCATORS. VAULTS AND HANDHOLES SHALL HAVE EMS MARKERS INSTALLED SECURED ON THE WALL AT THE TOP TO EASE LOCATING.

LOCATE WIRE AND BONDING:

ALL UNDERGROUND TELECOMMUNICATIONS INFRASTRUCTURE CONDUIT SHALL HAVE A #12 AWG HDPE 30 MIL COPPER STRANDED LOCATE WIRE PLACED INSIDE OR ALONG THE CONDUIT ALIGNMENT UNLESS SPECIFIED OTHERWISE BY THE GOVERNING PERMIT AGENCY.

ALL LOCATE WIRE SHALL BE EFFECTIVELY GROUNDED PER INDUSTRY ACCEPTABLE STANDARDS. T-3 LOCATE WIRE ACCESS TERMINALS OR APPROVED EQUIVALENT SHALL BE INSTALLED AT VAULT/HANDHOLE LOCATIONS FOR TERMINATION OF LOCATE WIRE AND HAVE SUFFICIENT ACCESS FOR THE EASE OF LOCATING FACILITIES. LOCATE WIRE TERMINALS ARE TO BE MOUNTED ON AN ACCESSORY ANGLE BRACKET ON THE INTERIOR RISER / WALL OF A CONCRETE VAULT OR INTERIOR WALL OF A FIBERGLASS / COMPOSITE VAULT.

ALL NEW UTILITY VAULT OR HANDHOLE INSTALLATIONS SHALL REQUIRE THE INSTALLATION OF A 5/8" COPPER CLAD GROUND ROD IN OR THROUGH THE BOTTOM OF THE VAULT USING CAUTION NOT TO DAMAGE EXISTING SUBSTRUCTURE. GROUND ROD SHALL BE OF PROPER LENGTH AND PLACEMENT TO ACHIEVE AN EFFECTIVE ELECTRICAL GROUND PER NEC / NESC AND THE GOVERNING PERMIT AGENCY. #6 AWG COPPER WIRE IS TO BE PLACED FROM THE GROUND ROD TO THE GROUND LUG ON THE T-3 LOCATE WIRE TERMINAL. ALL #12 AWG LOCATE WIRE ENTERING VAULTS OR HANDHOLES SHALL BE TERMINATED TO THE T-3 LOCATE WIRE ACCESS TERMINAL USING MANUFACTURER SUPPLIED BINDING POSTS. BONDING STRAPS ARE TO BE INSTALLED BETWEEN ALL #12 BINDING POSTS AND THE #6 GROUND LUG EFFECTIVELY GROUNDING ALL LOCATE WIRE WITHIN THE STRUCTURE.

LOCATE WIRE PLACED THROUGH CONDUIT RISERS WHEN TRANSITIONING FROM UNDERGROUND TO AERIAL ON UTILITY POLES SHALL BE BONDED TO THE MGN ON THE POLE NEAR THE TOP OF THE RISER. IF NO MGN IS PRESENT A NEW #6 AWG VERTICAL GROUND AND 5/8" COPPER CLAD GROUND ROD SHALL BE PLACED PER NESC / NEC GUIDELINES TO ACCOMMODATE EFFECTIVE GROUNDING.

PRIOR TO TOUCHING, WORKING OR CONNECTING LOCATING EQUIPMENT TO LOCATE WIRE, THE SYSTEM MUST BE TESTED FOR INDUCED VOLTAGE. INSTALL FILTER PROTECTOR / ARRESTOR AS REQUIRED ON ONE OR BOTH LOCATE WIRES IF INDUCED VOLTAGE EXCEEDS 50VAC.

*ALL LOCATE WIRE TERMINATION AND BONDING OF CONDUCTIVE MATERIALS TO BE IN ACCORDANCE WITH THE LATEST VERSION OF THE NATIONAL ELECTRIC SAFETY CODE AND THE NATIONAL ELECTRIC CODE.

BUILDING CONSTRUCTION:

ALL WORK SHALL BE DONE IN A "NEAT AND WORKMAN" LIKE MANNER, IN CONFORMITY WITH LOCAL, STATE AND FEDERAL BUILDING CODES. ALL WORK MUST COMPLY WITH APPLICABLE DATA SYSTEM STANDARDS AND NATIONAL ELECTRIC CODE STANDARD SPECIFICATIONS. STANDARDS INCLUDE, BUT ARE NOT LIMITED TO, EIA/TIA 568-B COMMERCIAL BUILDING WIRING STANDARDS AND EIA/TIA 569-A COMMERCIAL BUILDING STANDARD FOR TELECOMMUNICATIONS PATHWAYS AND SPACES.

AS-BUILT DATA – METHOD OF PROCEDURE:

UPON NOTIFICATION OF COMPLETION OF THE WORK AND ACCEPTANCE BY THE OWNER, THE CONTRACTOR SHALL PROVIDE THE PROJECT MANAGER WITH A SET OF NEAT AND ACCURATE "AS-BUILT" DRAWINGS WITHIN 10 BUSINESS DAYS OF COMPLETION OF THE PROJECT.

AS-BUILT DATA SHALL BE UPDATED AND MAINTAINED DAILY ON FIELD COPY DRAWINGS FOR THE DURATION OF CONSTRUCTION. UPON COMPLETION OF THE PROJECT, THE AS-BUILT DATA SHALL BE TRANSFERRED TO A CLEAN SET OF CONSTRUCTION DRAWINGS FOR SUBMITTAL TO THE PROJECT MANAGER.

THE AS-BUILT DATA SHALL BE DETAILED ON THE DRAWINGS IN EITHER COLORED INK OR COLORED PENCIL ACCORDING TO THE FOLLOWING COLOR CODES:

RED: WORK PLACED ACCORDING TO DESIGN AND CHANGES TO THE DESIGN
GREEN: WORK NOT PLACED ACCORDING TO THE DESIGN; OMIT FROM DESIGN
BLUE: EXISTING UTILITIES, FACILITIES, COMMENTS AND NOTES

- 1) WORK PERFORMED ACCORDING TO THE DESIGN SHALL BE HIGHLIGHTED OR LOCATED IN RED.
- 2) WORK PERFORMED ACCORDING TO APPROVED CHANGES OR VARIATIONS TO THE DESIGN SHALL BE NEATLY DRAWN AND DETAILED ON THE DRAWINGS SHOWING HOW THE CHANGES WERE CONSTRUCTED IN THE FIELD.
- 3) WORK THAT WAS DESIGNED BUT NOT PERFORMED AS SHOWN ON THE DRAWINGS SHALL BE HIGHLIGHTED OR LOCATED IN GREEN TO SHOW THAT THE WORK FUNCTION WAS NOT CONSTRUCTED AS DESIGNED.
- 4) EXISTING FACILITIES OR UTILITIES ENCOUNTERED; CONSTRUCTION NOTES; ADDITIONAL CONSTRUCTION RELATED INFORMATION IDENTIFIED IN THE FIELD SHALL BE NEATLY DRAWN AND DETAILED IN BLUE.

COLORED HIGHLIGHTER PENS ACCORDING TO THE COLOR CODES AS DETAILED ABOVE ARE ACCEPTABLE. FLUORESCENT YELLOW HIGHLIGHTER PENS ARE NOT AN ACCEPTABLE FORM OF AS-BUILT COLORING.

AS-BUILT DRAWINGS SHALL CONTAIN THE FOLLOWING DATA AT A MINIMUM FOR EACH OF THE FOLLOWING WORK FUNCTIONS:

AERIAL SEGMENTS:

- 1) POINT OF ATTACHMENT HEIGHT FROM THE GROUND TO THE CABLE AND/OR STRAND ON ALL POLES.
- 2) CABLE FOOTAGE (SEQUENTIAL) MARKINGS AT ALL CABLE ENDS; START AND END OF SLACK STORAGE AND CONDUIT ENTRANCE / EXIT POINTS.
- 3) LOCATION OF ALL SLACK STORAGE AND CABLE SPLICE POINTS.
- 4) ANCHOR AND DOWN GUY SIZE PLACED AND LEAD LENGTH BETWEEN THE ANCHOR AND THE POLE.

UNDERGROUND SEGMENTS:

- 1) DEPTH OF CONDUIT MEASURED EVERY 25 FEET AND AT EVERY CHANGE IN DIRECTION ALONG THE CONDUIT ALIGNMENT.
- 2) OFFSET DISTANCE MEASURED EVERY 25 FEET AND AT EVERY CHANGE IN DIRECTION FROM THE ALIGNMENT TO A CURB, EDGE OF PAVEMENT OR OTHER PHYSICAL REFERENCE OBJECT.
- 3) LOCATION AND DEPTH OF VAULTS, HAND HOLES AND JUNCTION BOXES PLACED.
- 4) DEPTH, TYPE AND DIRECTION OF ANY EXISTING UTILITY ENCOUNTERED CROSSING THE CONDUIT ROUTE.
- 5) LOCATION OF MAGNETIC LOCATING TARGETS PLACED.
- 6) CABLE FOOTAGE (SEQUENTIAL) MARKINGS AT ALL CABLE ENDS, START AND END OF SLACK STORAGE, CONDUIT ENTRANCE / EXIT POINTS.
- 7) ACTUAL QUANTITY OF CABLE SLACK STORAGE LEFT IN VAULT LOCATIONS.
- 8) ACTUAL WALL TO WALL MEASUREMENTS OF CONDUIT SEGMENTS BETWEEN VAULTS.
- 9) PROVIDE DETAILED VAULT BUTTERFLY DRAWINGS INCLUDING CONDUIT ENTRY AND EXIT LOCATIONS; CONDUIT SIZE & TYPE; CABLE ROUTING; CABLE COILS; SPLICE CASES; RACKING; LOCATE WIRES; LOCATE TERMINALS; GROUND RODS; GROUNDING; AND GENERAL ORIENTATION.

AS-BUILT DATA – METHOD OF PROCEDURE:

DIRECTIONAL BORING:

- 1) DEPTH OF CONDUIT MEASURED EVERY 10 FEET WITH A RUNNING LINE OFFSET DISTANCE FROM A CURB, EDGE OF PAVEMENT OR OTHER PHYSICAL REFERENCE OBJECT.
- 2) BORE PLAN AND PROFILE DRAWING REFLECTING THE DEPTH AND RUNNING LINE OFFSET MEASUREMENT EVERY 10 FEET THROUGHOUT THE ENTIRE LENGTH OF THE BORE; DETAIL BORE PROFILES WITH DEPTH AND LOCATION OF ALL VISUALLY VERIFIED UTILITIES (I.E. ALL POT-HOLED UTILITIES EXPOSED ALONG THE BORE ALIGNMENT)

- 3) AS-BUILT DRAWINGS SHALL HAVE THE WORDS "AS-BUILT" WITH THE NAME OF THE CONTRACTOR AND THE DATE STAMPED ON EVERY SHEET IN THE DRAWING PACKAGE.

ANY CHANGES OR DEVIATIONS FROM THE CONSTRUCTION DRAWINGS MUST BE APPROVED BY THE PROJECT MANAGER OR THE OWNER PRIOR TO MAKING ANY OF THE SAID CHANGES OR DEVIATIONS.

PHOTO DOCUMENTATION:


ALL UNDERGROUND VAULTS; JUNCTION BOXES, CONDUIT INFRASTRUCTURE; TRENCHES; EXCAVATIONS; AND RESTORATION TO BE CLEARLY PHOTOGRAPHED BEFORE, DURING AND AFTER CONSTRUCTION TO VERIFY THAT CONSTRUCTION PROCEDURES ARE MET. FACILITY ENTRANCES, PULL BOXES, CABLE RACEWAYS, SPLICE CASES, SPLICE TRAYS, TERMINATION RACKS AND OTHER EQUIPMENT OR ELECTRONICS INSTALLED BY CONTRACTOR TO BE PHOTOGRAPHED AT THE TIME OF INSTALLATION TO ENSURE PROPER PROCEDURES ARE MET AND TO PROVIDE ADEQUATE DOCUMENTATION TO SERVE AS ASBUILT RECORD.

GENERAL SPECIFICATIONS DISCLAIMER

THE INFORMATION CONTAINED IN THESE SPECIFICATIONS PROVIDES GENERAL GUIDELINES NECESSARY TO FACILITATE THE INSTALLATION OF COMMUNICATIONS INFRASTRUCTURE. ANY DISCREPANCIES BETWEEN THESE SPECIFICATIONS AND THE LOCAL GOVERNING AUTHORITY OR PERMIT AGENCY IS TO BE VALIDATED WITH THE DESIGNER OR OWNER PRIOR TO CONSTRUCTION. WHERE DETAILS ARE SHOWN, THEY ARE PROVIDED AS A REFERENCE FOR PLACEMENT OF COMMUNICATIONS INFRASTRUCTURE AND ACCEPTABLE INDUSTRY STANDARDS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE INSTALLATION OF ALL INFRASTRUCTURE MEETS THE APPLICABLE LOCAL, REGIONAL AND NATIONAL BUILDING CODES AND SAFETY STANDARDS. COMMSTRUCTURE CONSULTING, LLC. DOES NOT ASSUME LIABILITY FOR THE NEGLIGENCE OF THE INSTALLATION CONTRACTOR AND THEIR ABILITY TO PERFORM ANY ASPECT OF THE WORK HEREIN ACCORDING TO THESE STANDARDS.

REFERENCES:

- EIA/TIA COMMERCIAL BUILDING WIRING STANDARD, 606 AND ALL RECOGNIZED TSBS.
- NATIONAL ELECTRIC SAFETY CODE
- UNDERWRITER’S LABORATORIES (UL): APPLICABLE LISTINGS AND RATINGS
- 1) ALL CONDUIT PLACED ON PRIVATE PROPERTY IS TO BE SCH 40 PVC IF PLACED OUTSIDE THE BUILDING AND EMT IF PLACED WITHIN THE BUILDING. RISER CONDUIT ON THE EXTERIOR OF BUILDING IS TO BE GRC UNLESS OTHERWISE SPECIFIED.
- 2) ALL CONDUIT IS TO BE EQUIPPED WITH INNERDUCT AS SPECIFIED.
- 3) 90 BENDS ARE TO BE "SWEEP" BENDS, 3' RADIUS, UNLESS OTHERWISE SPECIFIED.
- 4) CONDUIT PATHWAYS WITHIN BUILDING INTERIORS SHALL BE SUPPORTED WITH APPROPRIATE HARDWARE SPECIFIC TO THE EXISTING MATERIAL OR STRUCTURE.
- 5) ALL EXTERIOR WALL PENETRATIONS ARE TO BE RESEALED PER BUILDING AND FIRE CODE.
- 6) ALL INTERIOR WALL PENETRATIONS ARE TO COMPLY WITH PERTINENT BUILDING AND FIRE CODES AND ARE TO BE CONSTRUCTED IN SUCH A MANNER AS TO INSURE THE INTEGRITY OF THE PENETRATED WALL.
- 7) ALL PULL BOXES ARE TO BE NEMA TYPE 3R OR EQUIVALENT.
- 8) NOTIFY THE "BUILDING CONTACT" PERSON A MINIMUM OF 48 HOURS PRIOR TO COMMENCING ANY WORK ON THE PREMISES.



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REV	DESCRIPTION	DATE	BY	APP

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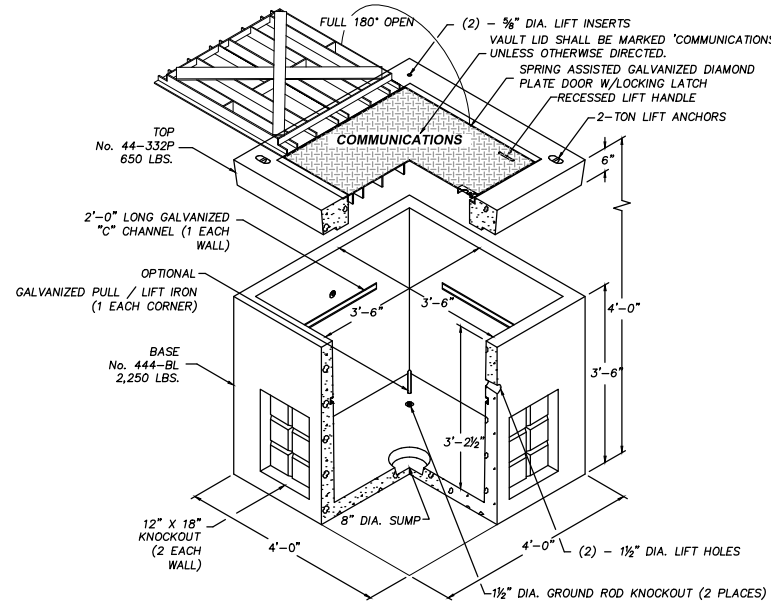
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CLACKAMAS BROADBAND EXPRESS
STANDARD PLANS FOR CONSTRUCTION
GENERAL NOTES

CITY: CITY – TOWNSHIP RANGE SECTION: COUNTY: COUNTY CO., STATE

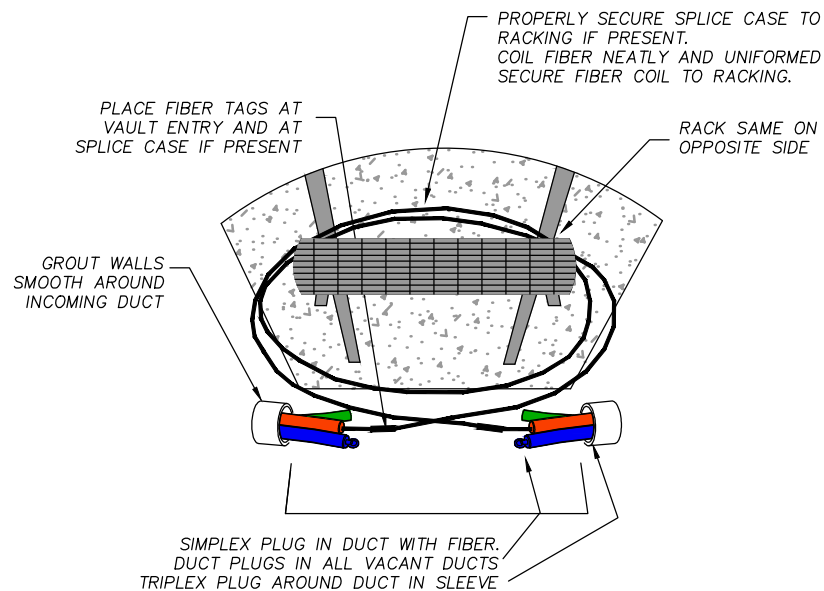
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SPECIFICATION SET



(SIDEWALK / INCIDENTAL TRAFFIC LOC.)
UTILITY VAULT PRE-CAST 444-LA

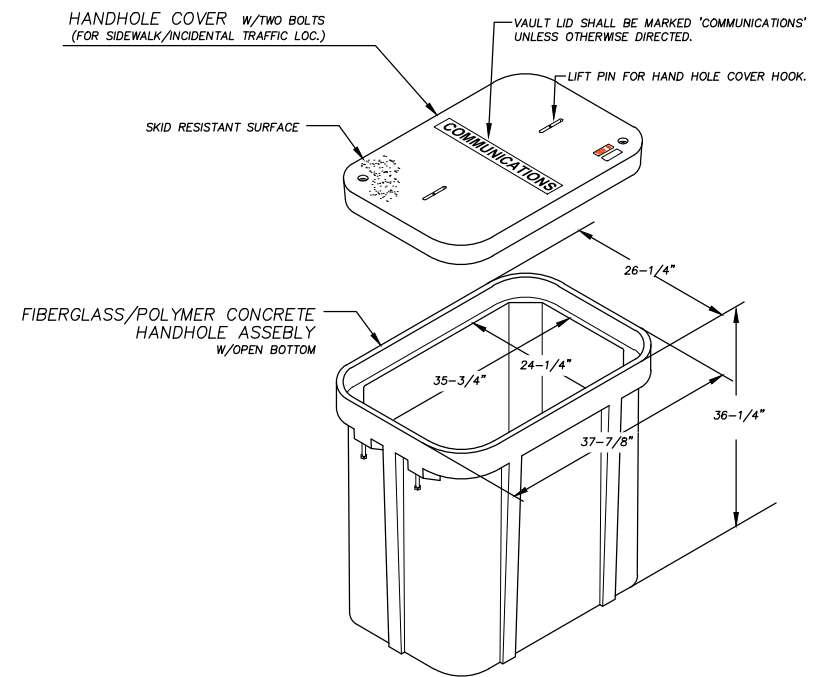
SCALE: (ADDITIONAL DETAILS SEE 1.1/1.6 & 4/1.6)



VAULT SHALL BE FREE OF DIRT AND DEBRIS.

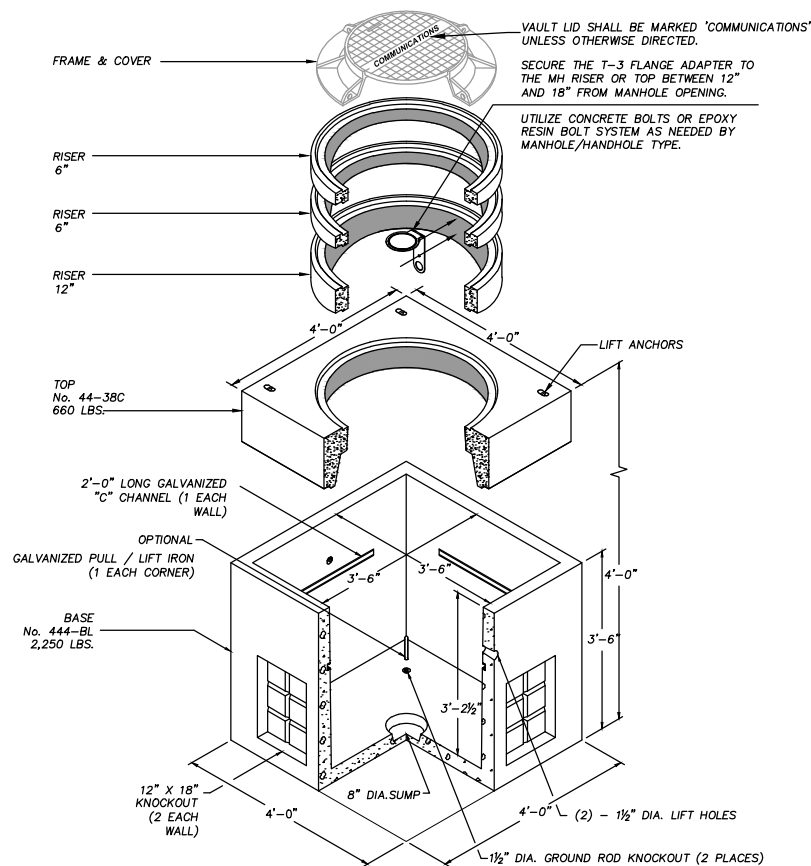
TYPICAL VAULT INTERIOR DETAIL

SCALE: 1" = N.T.S.



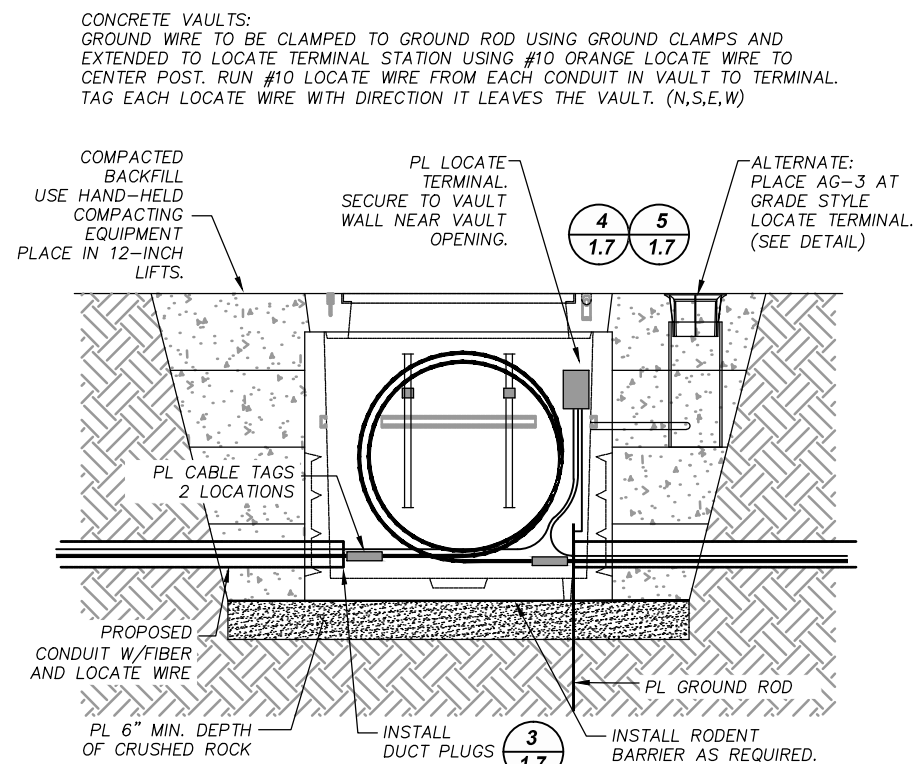
OPEN BOTTOM HANDHOLE

SCALE: (ADDITIONAL DETAILS SEE 3.1/1.6)



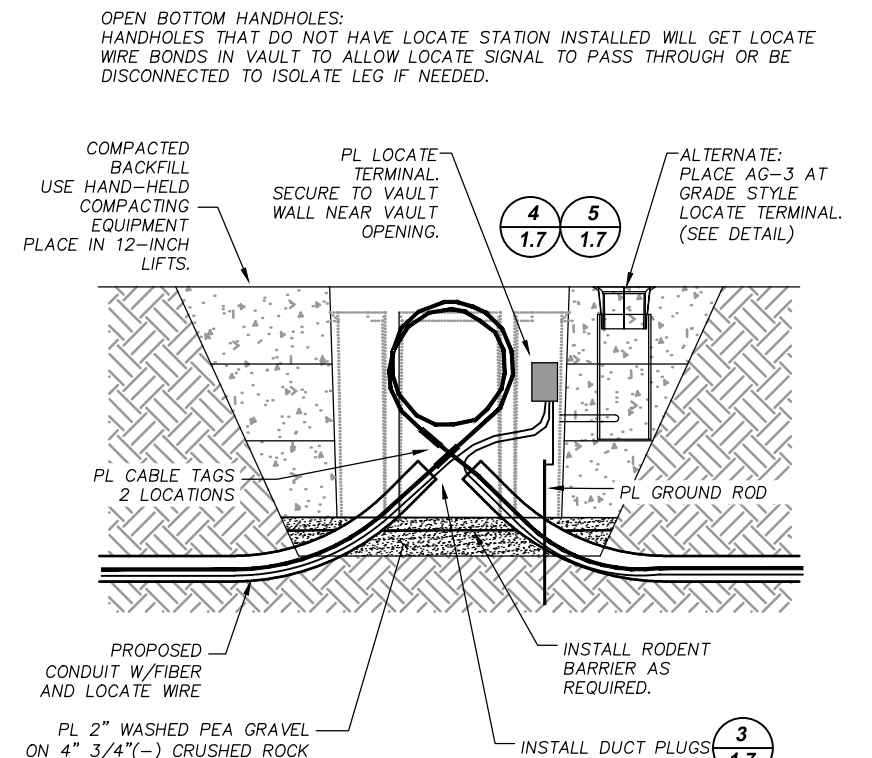
(ROADWAY / SUSTAINED TRAFFIC LOC.)
UTILITY VAULT PRE-CAST 444-LA

SCALE: (ADDITIONAL DETAILS SEE 1.1/1.6 & 4/1.6)



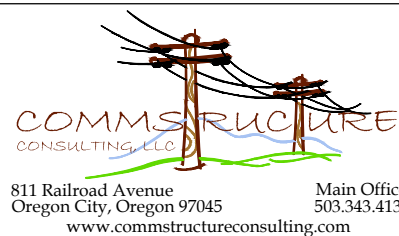
**VAULT SECTION INTERIOR DETAIL
UTILITY VAULT PRE-CAST MANHOLE**

SCALE: (ADDITIONAL DETAILS SEE 4/1.7 & 5/1.7)



**VAULT SECTION INTERIOR DETAIL
OPEN BOTTOM HANDHOLE**

SCALE: (ADDITIONAL DETAILS SEE 4/1.7 & 5/1.7)

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CLACKAMAS BROADBAND EXPRESS STANDARD PLANS FOR CONSTRUCTION VAULT DETAILS

CITY: CITY - TOWNSHIP RANGE SECTION:

PLOT DATE:
12/06/2016

SCALE:

AS SHOWN

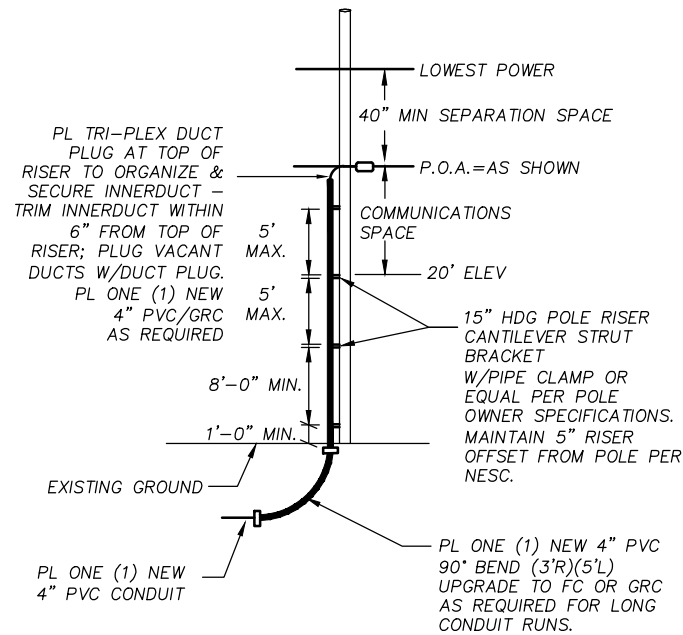
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CBX-DT00.DWG - DT01 1.6

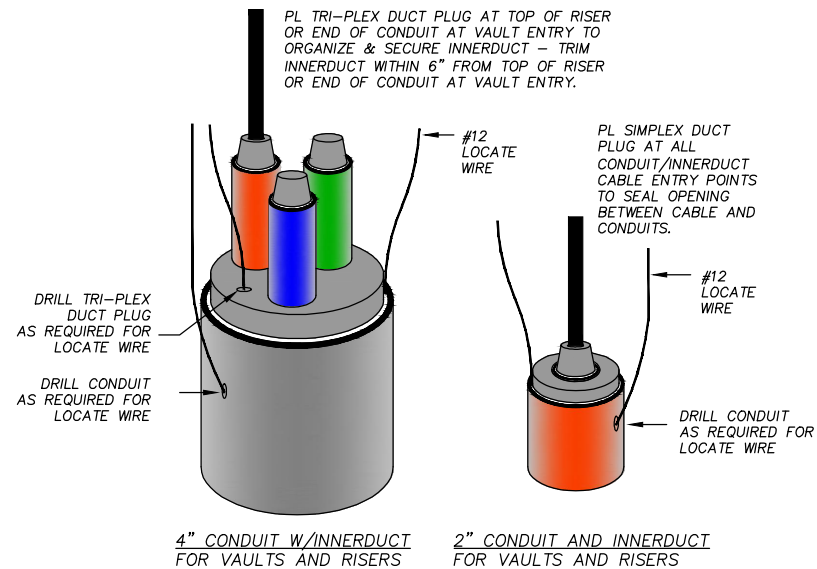
COUNTY: COUNTY CO., STATE

1.6

SPECIFICATION SET

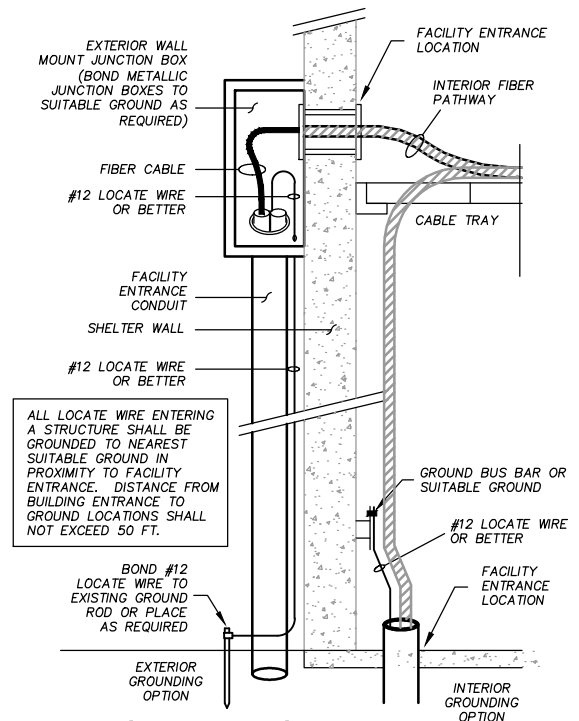


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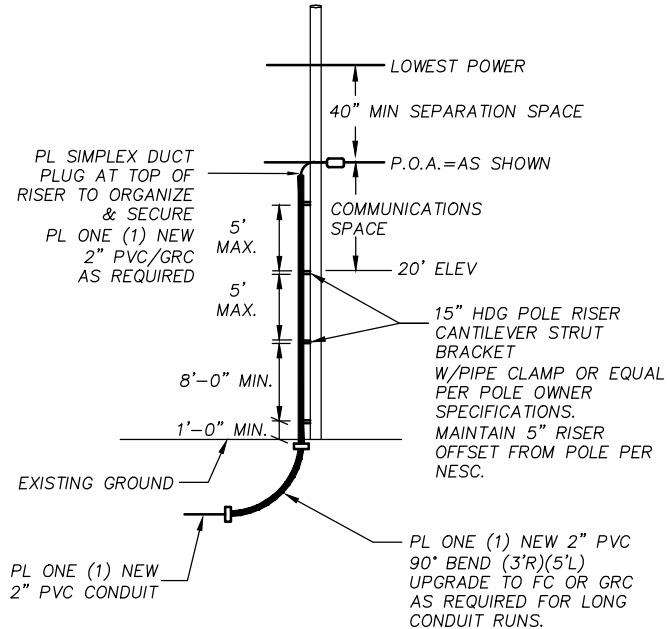
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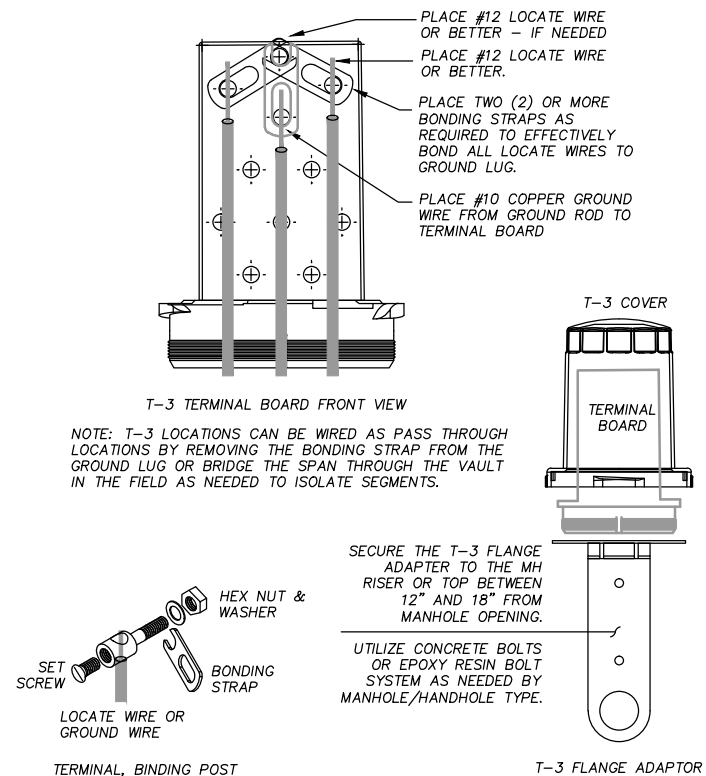


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6
1.7

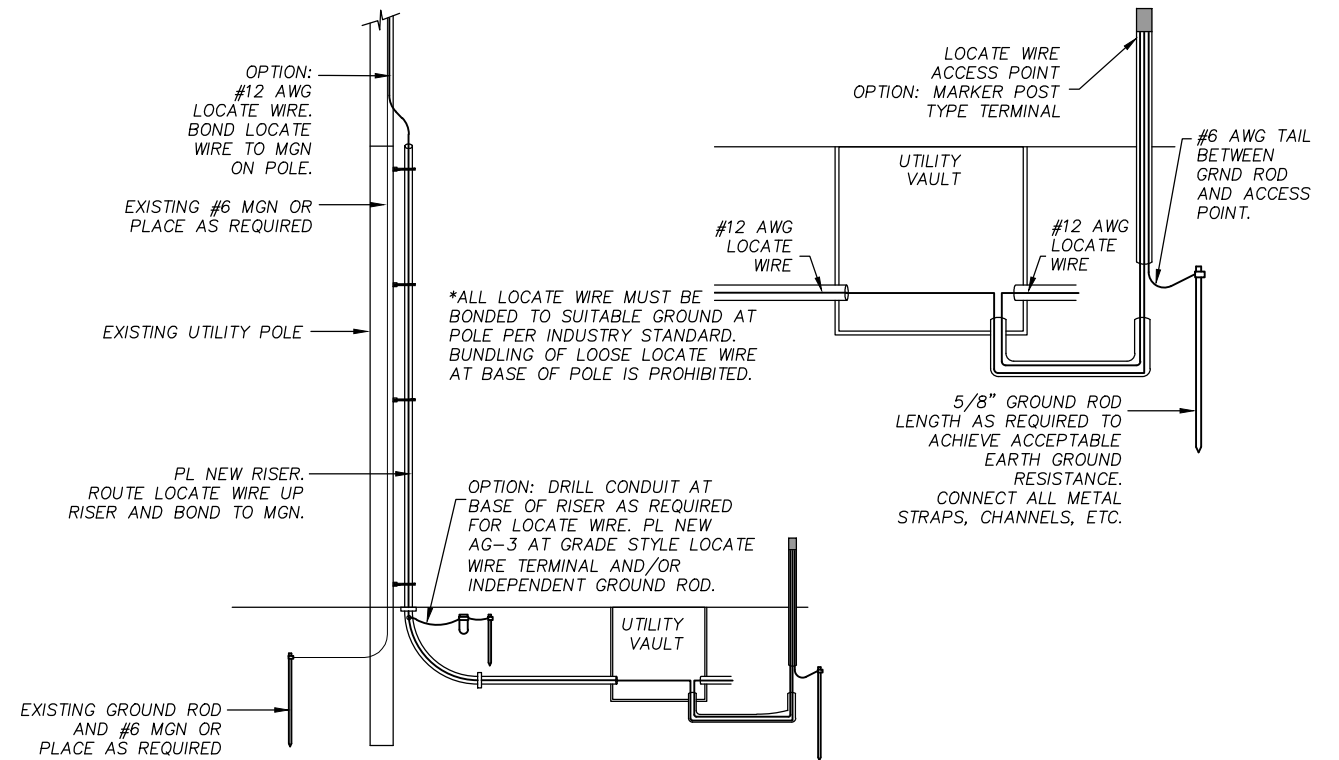


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SCALE: 1" = N.T.S.

$$\frac{4}{1.7}$$



SCALE: 1" = N.T.S.

3
1.7



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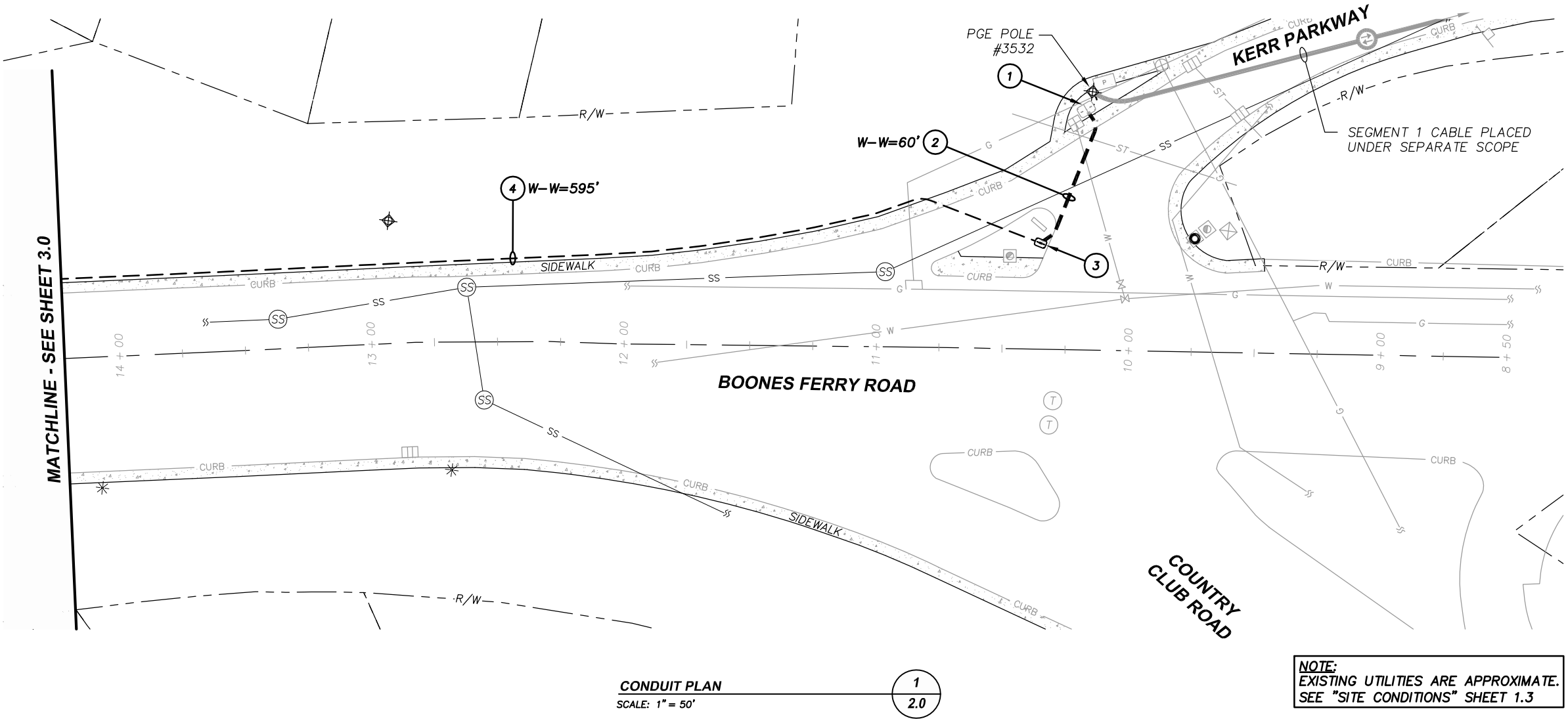
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CLACKAMAS BROADBAND EXPRESS STANDARD PLANS FOR CONSTRUCTION

RISER DETAILS AND LOCATE WIRE / BONDING DETAILS

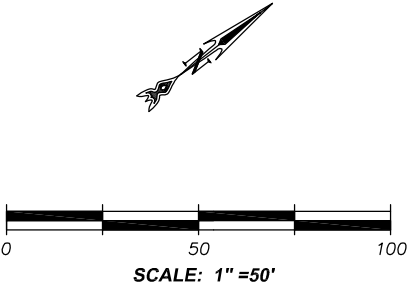
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PLOT DATE: 12/06/2016	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG - TAB_SHEET # CBX-DT00.DWG - DT02_1.7		SHEET 1.7

CONSTRUCTION SET



CONSTRUCTION NOTES

- 1 EXISTING 36X48X36 OPEN BOTTOM UTILITY VAULT WITH HEAVY DUTY TWO BOLT LID – PROPOSED REEL-END SPLICE LOCATION. (PLACED ON SEGMENT 1)
EXISTING 100’ SLACK STORAGE IN NEW 144F CABLE COILED IN VAULT. (SEGMENT 1 BACKBONE – PLACED UNDER SEPARATE SCOPE)
LEAVE 100’ SLACK STORAGE IN NEW 144F MICRO CABLE COILED IN VAULT. (SEGMENT 7 BACKBONE)
- 2 PL ONE (1) NEW 2-WAY 18/14MM MICRO DUCT W/ RIPCORDER AND LOCATE WIRE.
PL NEW 144 MICRO CABLE THROUGH ONE VACANT MICRO DUCT.
- 3 EXISTING CITY OF LAKE OSWEGO TRAFFIC SIGNAL JUNCTION BOX.
LOCATION APPROXIMATE – CONTRACTOR TO FILED VERIFY
REMOVE AND REPLACE WITH NEW 24X36X36 OPEN BOTTOM HANDHOLE.
LEAVE 100’ SLACK STORAGE IN NEW 144F MICRO CABLE COILED IN VAULT.
LOCATE WIRE TO BE CONTINUOUS/ SPLICE THROUGH VAULT AS REQUIRED.
- 4 EXISTING 2” CITY OF LAKE OSWEGO TRAFFIC SIGNAL CONDUIT.
PL ONE (1) NEW 2-WAY 18/14MM MICRODUCT W/ RIPCORDER AND LOCATE WIRE THROUGH EXISTING CONDUIT.
PL ONE NEW 144F MICRO CABLE THROUGH ONE VACANT MICRO DUCT.



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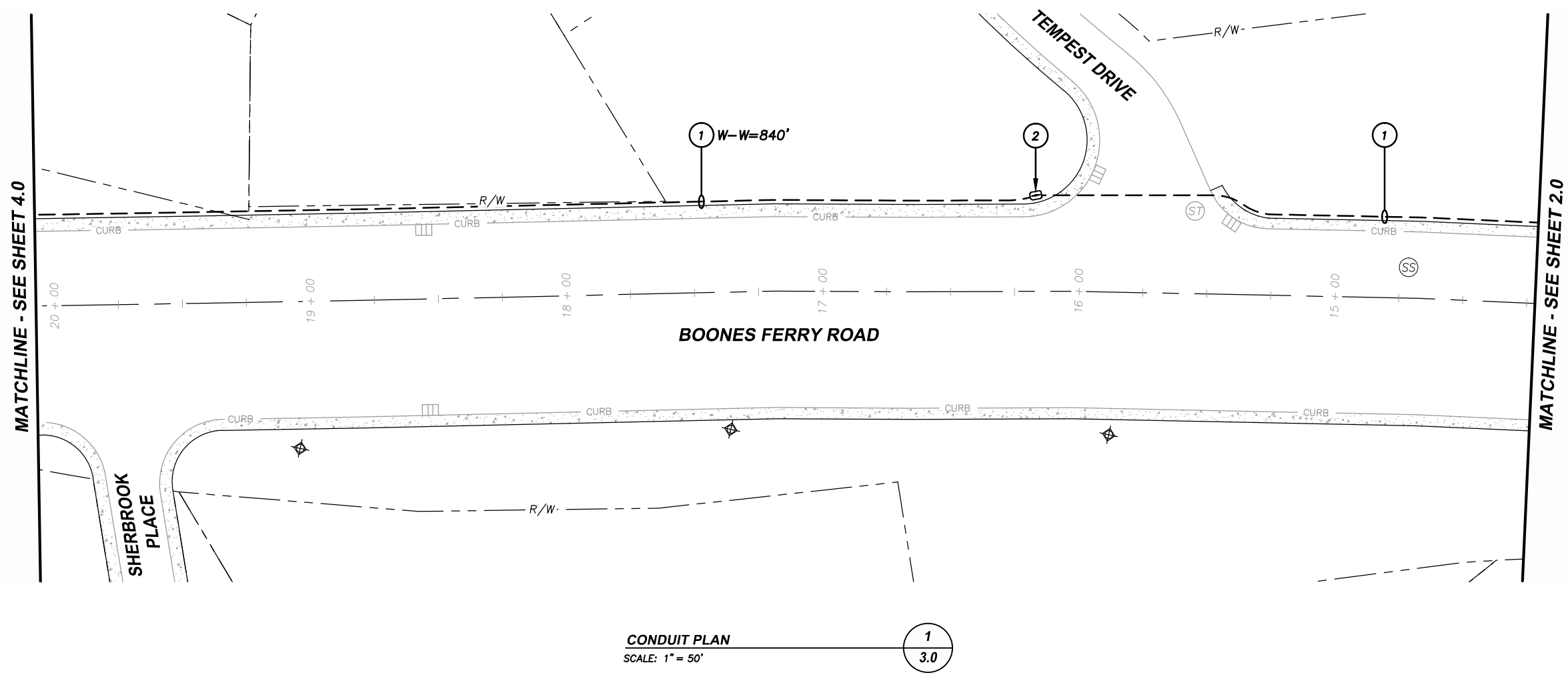
information at the speed of light

LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 7 - LAKE GROVE ELEMENTARY SCHOOL

CONDUIT PLAN

CITY: LAKE OSWEGO – TOWNSHIP 2 SOUTH RANGE 1 EAST SECTION: 5,8		COUNTY: CLACKAMAS CO., OREGON	
PLOT DATE: 3/17/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG – TAB_SHEET # LAKEO-S7-CP00.DWG – CP01_2.0	SHEET 2.0

CONSTRUCTION SET



CONDUIT PLAN
SCALE: 1" = 50'

CONSTRUCTION NOTES

- 1 EXISTING 2" CITY OF LAKE OSWEGO TRAFFIC SIGNAL CONDUIT.
PL ONE (1) NEW 2-WAY 18/14MM MICRODUCT W/ RIPCORDER AND LOCATE WIRE THROUGH EXISTING CONDUIT.
PL ONE NEW 144F MICRO CABLE THROUGH ONE VACANT MICRO DUCT.
- 2 EXISTING CITY OF LAKE OSWEGO TRAFFIC SIGNAL JUNCTION BOX.
LOCATION APPROXIMATE - CONTRACTOR TO FILED VERIFY
REMOVE AND REPLACE WITH NEW 24X36X36 OPEN BOTTOM HANDHOLE.
PL NEW GROUND ROD, LOCATE WIRE ACCESS POINT AND GROUND WIRE IN VAULT.
PL NEW #6 AWG TAIL BETWEEN GROUND ROD AND TEST STATION GROUND LUG.
BOND #14 AWG LOCATE WIRE TO ACCESS POINT.
LEAVE 100' SLACK STORAGE IN NEW 144F MICRO CABLE COILED IN VAULT.



Plot Date: 16 Mar 2017, 3:39pm By User: Tom
Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 7\LAKE0-S7-CP00.DWG Layout (If Any): CP01_3.0

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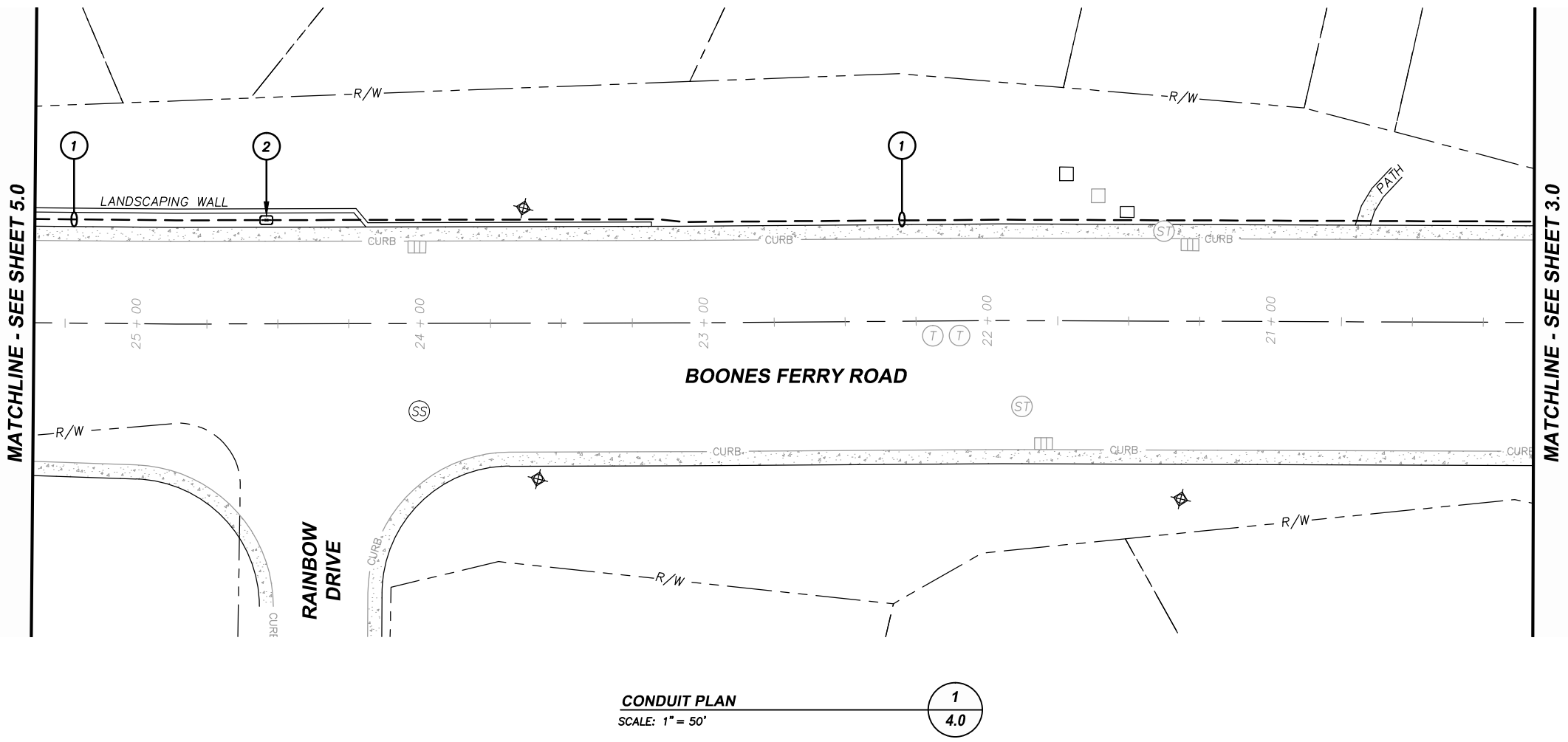
DESIGNED BY: <u>T. WALKER</u>		DRAWN BY: <u>T. BRADLEY</u>		
CHECKED BY: <u>J. GREENWOOD</u>				
REVISIONS				
REV	DESCRIPTION	DATE	BY	APP

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LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 7 - LAKE GROVE ELEMENTARY SCHOOL
CONDUIT PLAN

CITY: LAKE OSWEGO - TOWNSHIP 2 SOUTH RANGE 1 EAST SECTION: 5,8		COUNTY: CLACKAMAS CO., OREGON	
PLOT DATE: 3/16/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG - TAB_SHEET # LAKE0-S7-CP00.DWG - CP01_3.0	SHEET 3.0

CONSTRUCTION SET



CONSTRUCTION NOTES

- 1 EXISTING 2" CITY OF LAKE OSWEGO TRAFFIC SIGNAL CONDUIT.
PL ONE (1) NEW 2-WAY 18/14MM MICRODUCT W/ RIPCORDER AND LOCATE WIRE THROUGH EXISTING CONDUIT.
PL ONE NEW 144F MICRO CABLE THROUGH ONE VACANT MICRO DUCT.
- 2 EXISTING CITY OF LAKE OSWEGO TRAFFIC SIGNAL JUNCTION BOX.
LOCATION APPROXIMATE - CONTRACTOR TO FILED VERIFY
REMOVE AND REPLACE WITH NEW 24X36X36 OPEN BOTTOM HANDHOLE.
LEAVE 100' SLACK STORAGE IN NEW 144F MICRO CABLE COILED IN VAULT.
LOCATE WIRE TO BE CONTINUOUS/ SPLICE THROUGH VAULT AS REQUIRED.

Plot Date: 16 Mar 2017, 3:39pm By User: Tom
Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 7\LAKEO-S7-CP00.DWG Layout (If Any): CP01_4.0

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REVISIONS				
REV	DESCRIPTION	DATE	BY	APP

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LAKE OSWEGO SCHOOL DISTRICT EXPANSION

SEGMENT 7 - LAKE GROVE ELEMENTARY SCHOOL

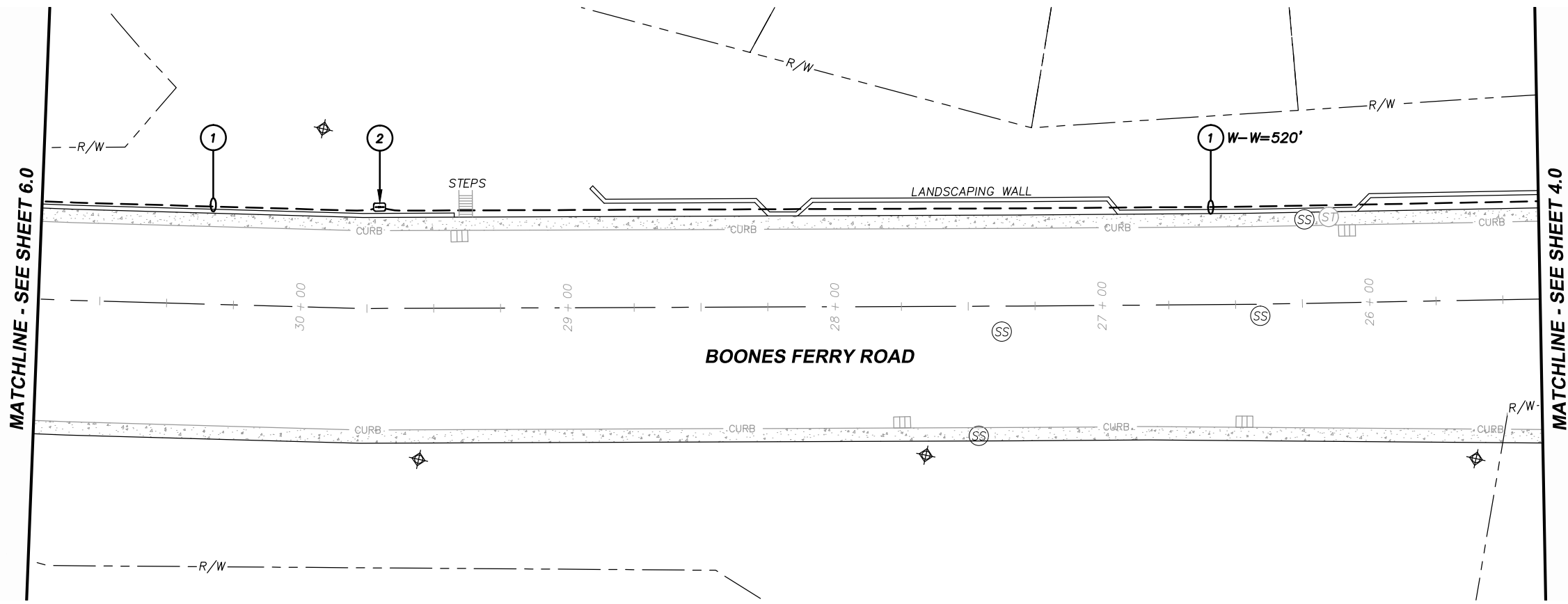
CONDUIT PLAN

CITY: LAKE OSWEGO - TOWNSHIP 2 SOUTH RANGE 1 EAST SECTION: 5,8

COUNTY: CLACKAMAS CO., OREGON

PLOT DATE: 3/16/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG - TAB_SHEET # LAKEO-S7-CP00.DWG - CP01_4.0	SHEET 4.0
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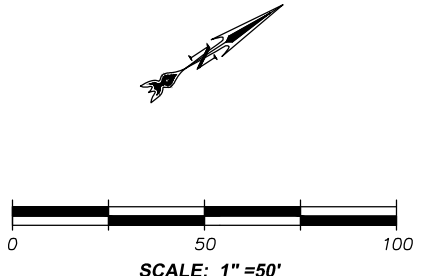


CONDUIT PLAN
SCALE: 1" = 50'

1
5.0

CONSTRUCTION NOTES

- 1 EXISTING 2" CITY OF LAKE OSWEGO TRAFFIC SIGNAL CONDUIT.
PL ONE (1) NEW 2-WAY 18/14MM MICRODUCT W/ RIPCORDER AND LOCATE WIRE THROUGH EXISTING CONDUIT.
PL ONE NEW 144F MICRO CABLE THROUGH ONE VACANT MICRO DUCT.
- 2 EXISTING CITY OF LAKE OSWEGO TRAFFIC SIGNAL JUNCTION BOX.
LOCATION APPROXIMATE - CONTRACTOR TO FILED VERIFY
REMOVE AND REPLACE WITH NEW 24X36X36 OPEN BOTTOM HANDHOLE.
PL NEW GROUND ROD, LOCATE WIRE ACCESS POINT AND GROUND WIRE IN VAULT.
PL NEW #6 AWG TAIL BETWEEN GROUND ROD AND TEST STATION GROUND LUG.
BOND #14 AWG LOCATE WIRE TO ACCESS POINT.
LEAVE 100' SLACK STORAGE IN NEW 144F MICRO CABLE COILED IN VAULT.



Plot Date: 16 Mar 2017, 3:39pm By User: Tom
Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 7\LAKE0-S7-CP00.DWG Layout (If Any): CP01_5.0

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LAKE OSWEGO SCHOOL DISTRICT EXPANSION

SEGMENT 7 - LAKE GROVE ELEMENTARY SCHOOL

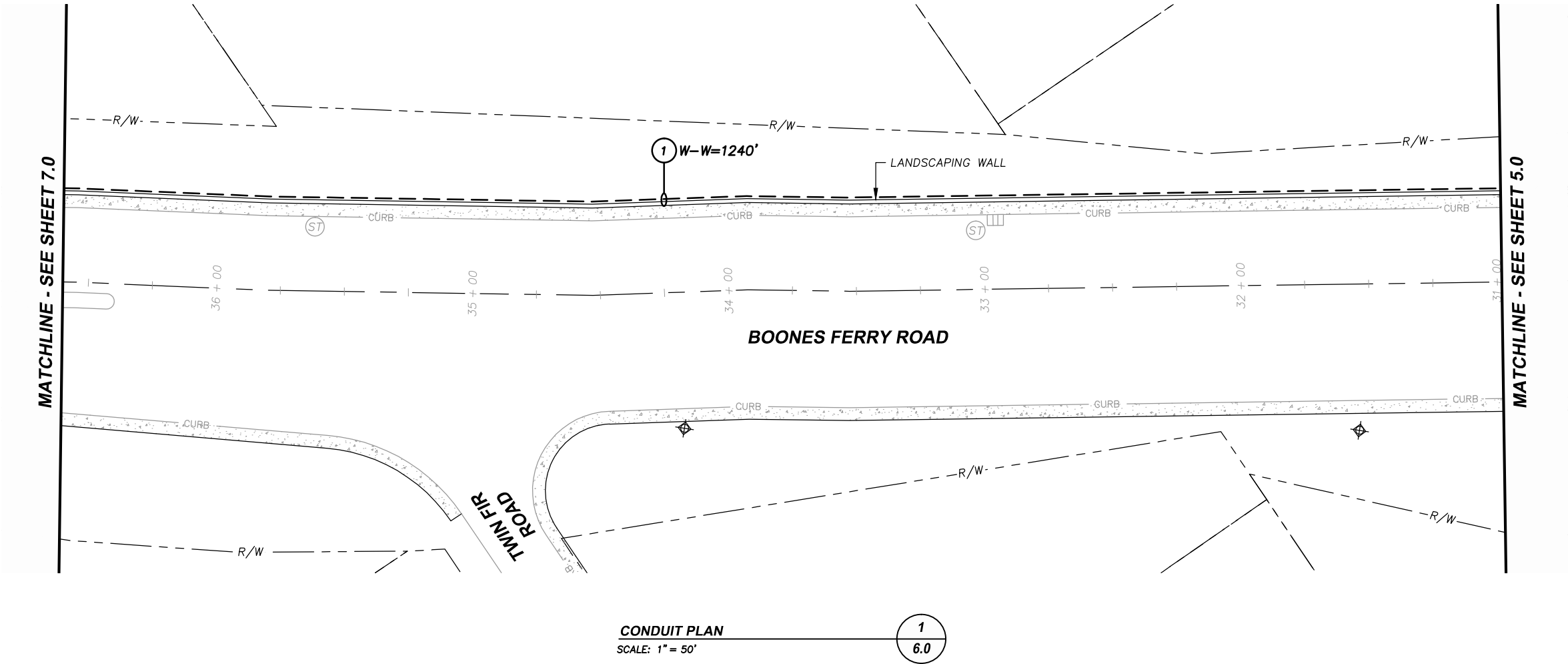
CONDUIT PLAN

CITY: LAKE OSWEGO – TOWNSHIP 2 SOUTH RANGE 1 EAST SECTION: 5,8

COUNTY: CLACKAMAS CO., OREGON

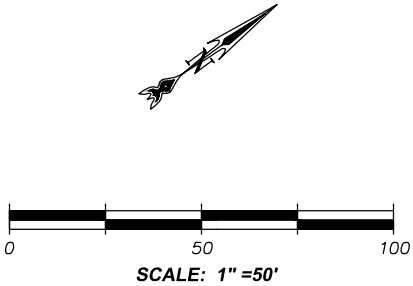
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CONSTRUCTION SET



CONSTRUCTION NOTES

- 1 EXISTING 2" CITY OF LAKE OSWEGO TRAFFIC SIGNAL CONDUIT.
PL ONE (1) NEW 2-WAY 18/14MM MICRODUCT W/ RIPCORD AND LOCATE WIRE THROUGH EXISTING CONDUIT.
PL ONE NEW 144F MICRO CABLE THROUGH ONE VACANT MICRO DUCT.



Plot Date: 16 Mar 2017, 3:40pm By User: Tom
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LAKE OSWEGO SCHOOL DISTRICT EXPANSION

SEGMENT 7 - LAKE GROVE ELEMENTARY SCHOOL

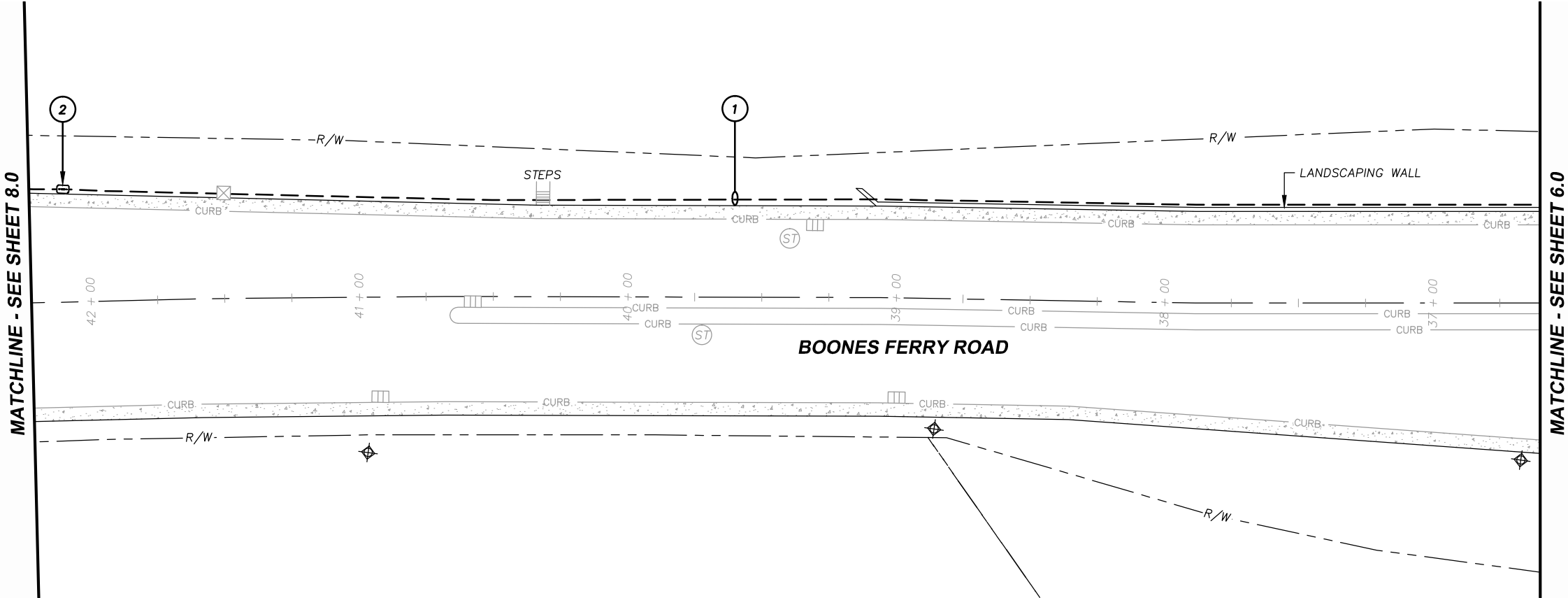
CONDUIT PLAN

CITY: LAKE OSWEGO – TOWNSHIP 2 SOUTH RANGE 1 EAST SECTION: 5,8

COUNTY: CLACKAMAS CO., OREGON

PLOT DATE: 3/16/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG – TAB_SHEET # LAKEO-S7-CP00.DWG – CP01_6.0	SHEET 6.0
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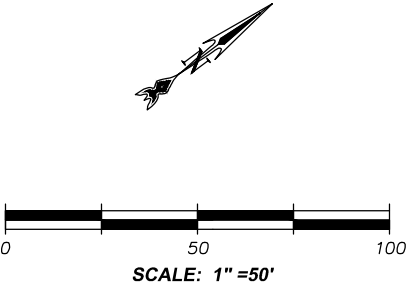
CONSTRUCTION SET



CONDUIT PLAN
SCALE: 1" = 50'

CONSTRUCTION NOTES

- 1 EXISTING 2" CITY OF LAKE OSWEGO TRAFFIC SIGNAL CONDUIT.
PL ONE (1) NEW 2-WAY 18/14MM MICRODUCT W/ RIPCORDER AND LOCATE WIRE THROUGH EXISTING CONDUIT.
PL ONE NEW 144F MICRO CABLE THROUGH ONE VACANT MICRO DUCT.
- 2 EXISTING CITY OF LAKE OSWEGO TRAFFIC SIGNAL JUNCTION BOX.
LOCATION APPROXIMATE - CONTRACTOR TO FILED VERIFY
REMOVE AND REPLACE WITH NEW 24X36X36 OPEN BOTTOM HANDHOLE.
LEAVE 100' SLACK STORAGE IN NEW 144F MICRO CABLE COILED IN VAULT.
LOCATE WIRE TO BE CONTINUOUS/ SPLICE THROUGH VAULT AS REQUIRED.



Plot Date: 16 Mar 2017, 3:40pm By User: Tom
Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 7\LAKE0-S7-CP00.DWG Layout (If Any): CP01_7.0

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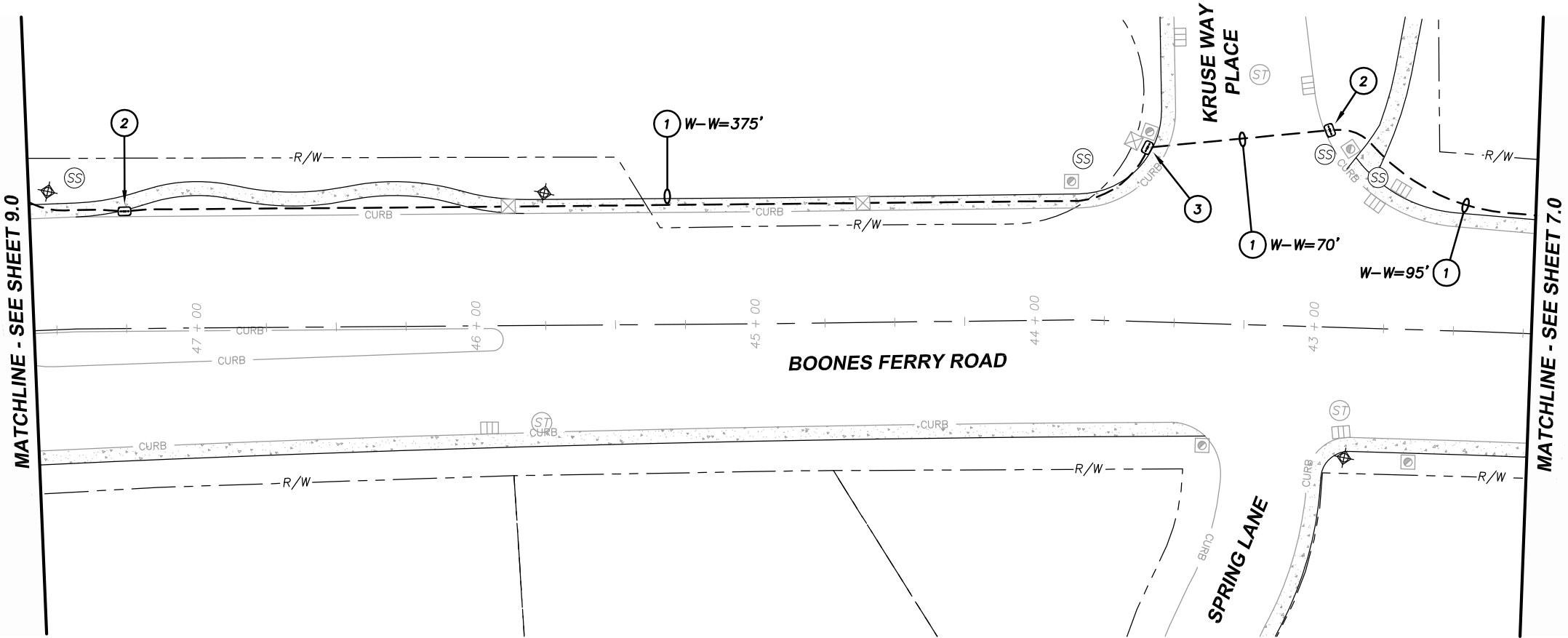
LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 7 - LAKE GROVE ELEMENTARY SCHOOL

CONDUIT PLAN

CITY: LAKE OSWEGO - TOWNSHIP 2 SOUTH RANGE 1 EAST SECTION: 5,8
COUNTY: CLACKAMAS CO., OREGON

PLOT DATE: 3/16/2017
SCALE: AS SHOWN
PROJECT NAME-FILENAME.DWG - TAB_SHEET #
LAKE0-S7-CP00.DWG - CP01_7.0

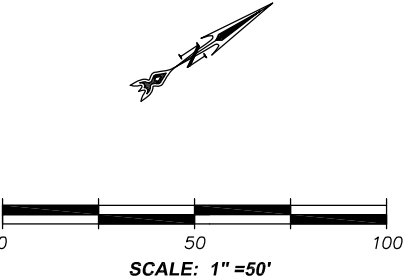
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CONDUIT PLAN
SCALE: 1" = 50'

CONSTRUCTION NOTES

- 1 EXISTING 2" CITY OF LAKE OSWEGO TRAFFIC SIGNAL CONDUIT.
PL ONE (1) NEW 2-WAY 18/14MM MICRODUCT W/ RIPCORD AND LOCATE WIRE THROUGH EXISTING CONDUIT.
PL ONE NEW 144F MICRO CABLE THROUGH ONE VACANT MICRO DUCT.
- 2 EXISTING CITY OF LAKE OSWEGO TRAFFIC SIGNAL JUNCTION BOX.
REMOVE AND REPLACE WITH NEW 24X36X36 OPEN BOTTOM HANDHOLE.
LEAVE 100' SLACK STORAGE IN NEW 144F MICRO CABLE COILED IN VAULT.
LOCATE WIRE TO BE CONTINUOUS/SPLICE THROUGH VAULT AS REQUIRED.
- 3 EXISTING CITY OF LAKE OSWEGO TRAFFIC SIGNAL JUNCTION BOX.
PL NEW GROUND ROD, LOCATE WIRE ACCESS POINT AND GROUND WIRE IN VAULT.
PL NEW #6 AWG TAIL BETWEEN GROUND ROD AND TEST STATION GROUND LUG.
BOND #14 AWG LOCATE WIRE TO ACCESS POINT.
LEAVE 100' SLACK STORAGE IN NEW 144F MICRO CABLE COILED IN VAULT



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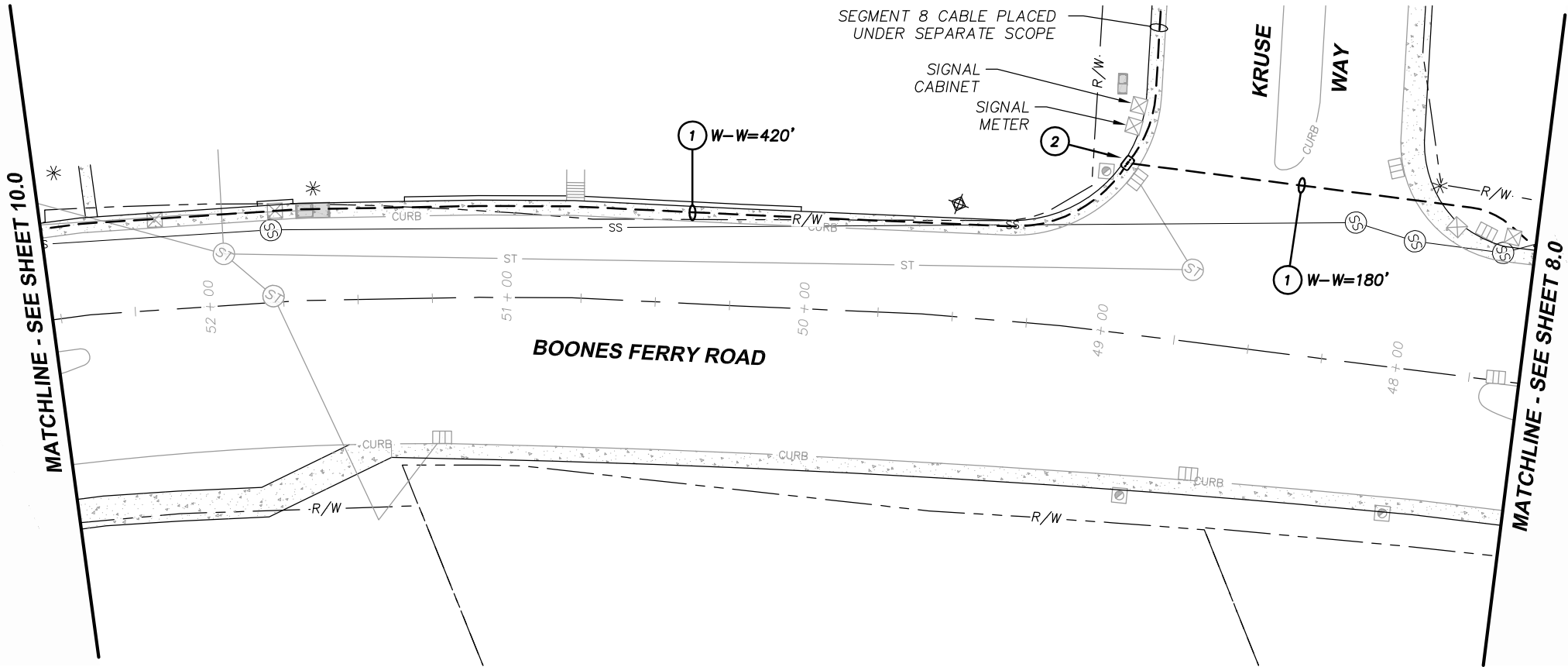
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LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 7 - LAKE GROVE ELEMENTARY SCHOOL

CONDUIT PLAN

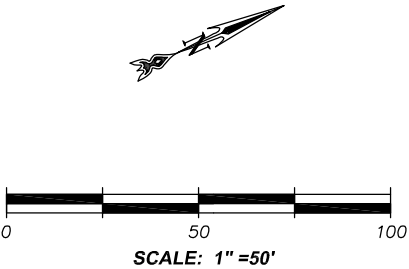
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PLOT DATE: 3/17/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG – TAB_SHEET # LAKEO-S7-CP00.DWG – CP01_8.0	SHEET 8.0



CONDUIT PLAN
SCALE: 1" = 50'

CONSTRUCTION NOTES

- 1 EXISTING 2" CITY OF LAKE OSWEGO TRAFFIC SIGNAL CONDUIT.
PL ONE (1) NEW 2-WAY 18/14MM MICRODUCT W/ RIPCORN AND LOCATE WIRE THROUGH EXISTING CONDUIT.
PL ONE NEW 144F MICRO CABLE THROUGH ONE VACANT MICRO DUCT.
- 2 EXISTING CITY OF LAKE OSWEGO TRAFFIC SIGNAL VAULT - PROPOSED MID-SHEATH SPLICE LOCATION.
REMOVE AND REPLACE WITH NEW 24X36X36 OPEN BOTTOM HANDHOLE (AS REQUIRED)
PL NEW GROUND ROD, LOCATE WIRE ACCESS POINT AND GROUND WIRE IN VAULT.
PL NEW #6 AWG TAIL BETWEEN GROUND ROD AND TEST STATION GROUND LUG.
BOND #14 AWG LOCATE WIRE TO ACCESS POINT.
LEAVE 100' SLACK STORAGE IN NEW 144F MICRO CABLE COILED IN VAULT. (SEGMENT 7 BACKBONE)
PROPOSED 100' SLACK STORAGE IN NEW 144F MICRO CABLE COILED IN VAULT. (SEGMENT 8 LATERAL - PLACED ON SEPARATE SCOPE)



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REVISIONS				
✓	DESCRIPTION	DATE	BY	APP

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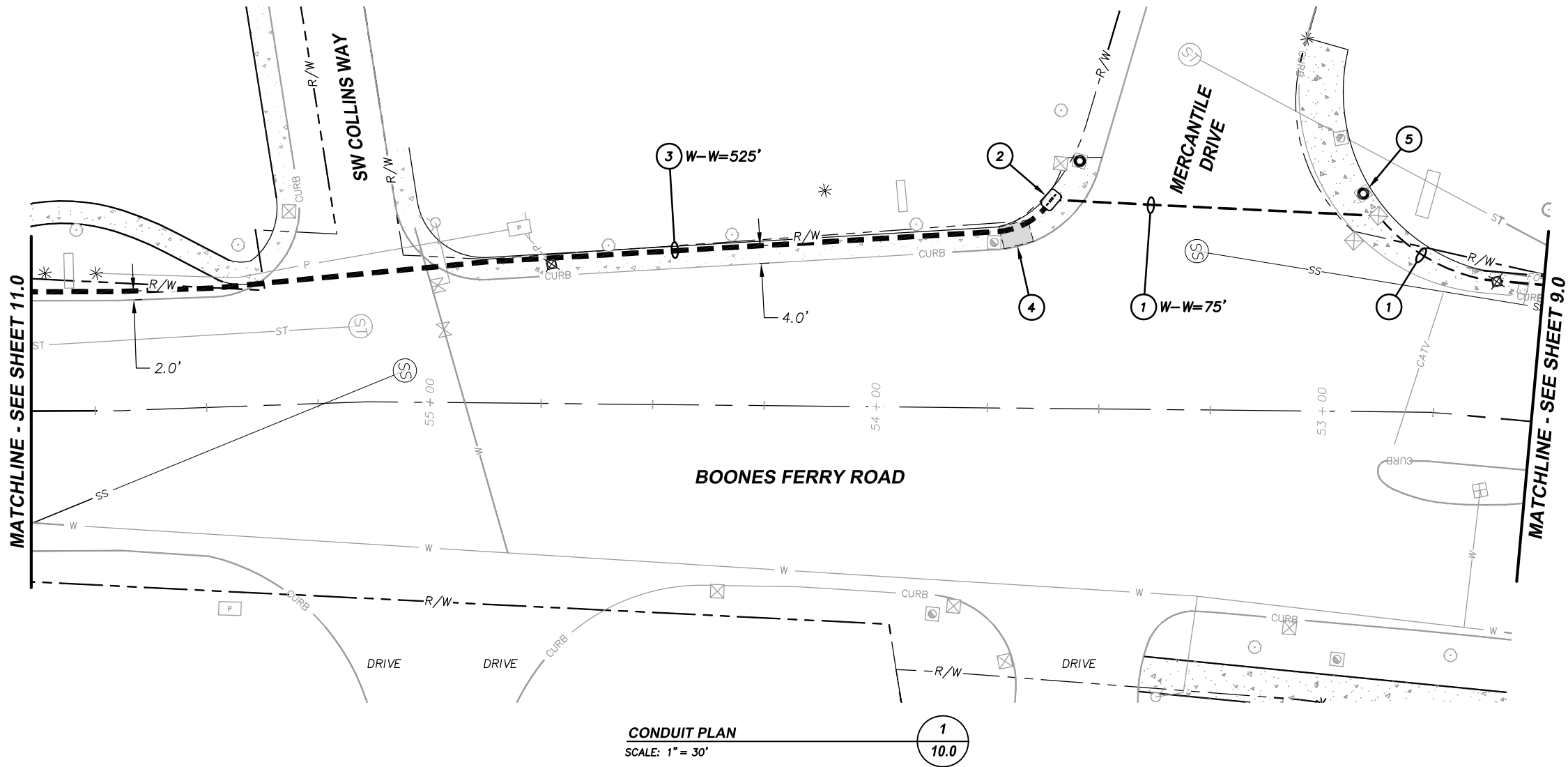
information at the speed of light

LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 7 - LAKE GROVE ELEMENTARY SCHOOL
CONDUIT PLAN

CITY: LAKE OSWEGO - TOWNSHIP 2 SOUTH RANGE 1 EAST SECTION: 5,8		COUNTY: CLACKAMAS CO., OREGON	
PLOT DATE: 3/17/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG - TAB_SHEET # LAKEO-S7-CP00.DWG - CP01_9.0	SHEET 9.0

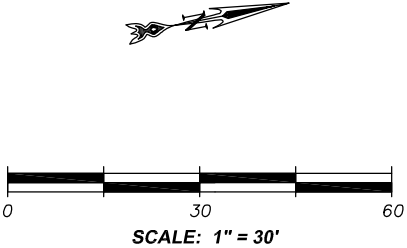
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Plot Date: 17 Mar 2017, 2:47pm By User: Tom
Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 7\LAKEO-S7-CP00.DWG Layout (If Any): CP01_10.0



CONSTRUCTION NOTES

- 1 EXISTING 2" CITY OF LAKE OSWEGO TRAFFIC SIGNAL CONDUIT.
PL ONE (1) NEW 2-WAY 18/14MM MICRODUCT W/ RIPCORDER AND LOCATE WIRE THROUGH EXISTING CONDUIT.
PL ONE NEW 144F MICRO CABLE THROUGH ONE VACANT MICRO DUCT.
- 2 EXISTING CITY OF LAKE OSWEGO TRAFFIC SIGNAL JUNCTION BOX.
REMOVE AND REPLACE WITH NEW 24X36X36 OPEN BOTTOM HANDHOLE.
PL NEW GROUND ROD, LOCATE WIRE ACCESS POINT AND GROUND WIRE IN VAULT.
PL NEW #6 AWG TAIL BETWEEN GROUND ROD AND TEST STATION GROUND LUG.
BOND #14 AWG LOCATE WIRE TO ACCESS POINT.
LEAVE 100' SLACK STORAGE IN NEW 144F MICRO CABLE COILED IN VAULT.
- 3 PL ONE (1) NEW 2-WAY 18/14MM MICRO DUCT W/ RIPCORDER AND LOCATE WIRE.
PL NEW 144 MICRO CABLE THROUGH ONE VACANT MICRO DUCT.
- 4 PROPOSED BORE / RECEIVE PIT
REMOVE / REPLACE SIDE WALK PANEL AS REQUIRED.
FULL PANEL REPLACEMENT ONLY.
RESTORE AREA AND LANDSCAPE TO "LIKE NEW" CONDITIONS.
- 5 INTERMEDIATE SIGNAL VAULT.
PASS THROUGH ONLY - NO SLACK STORAGE.



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CHECKED BY: <u>J. GREENWOOD</u>		DRAWN BY: <u>T. BRADLEY</u>		
REVISIONS				
REV	DESCRIPTION	DATE	BY	APP

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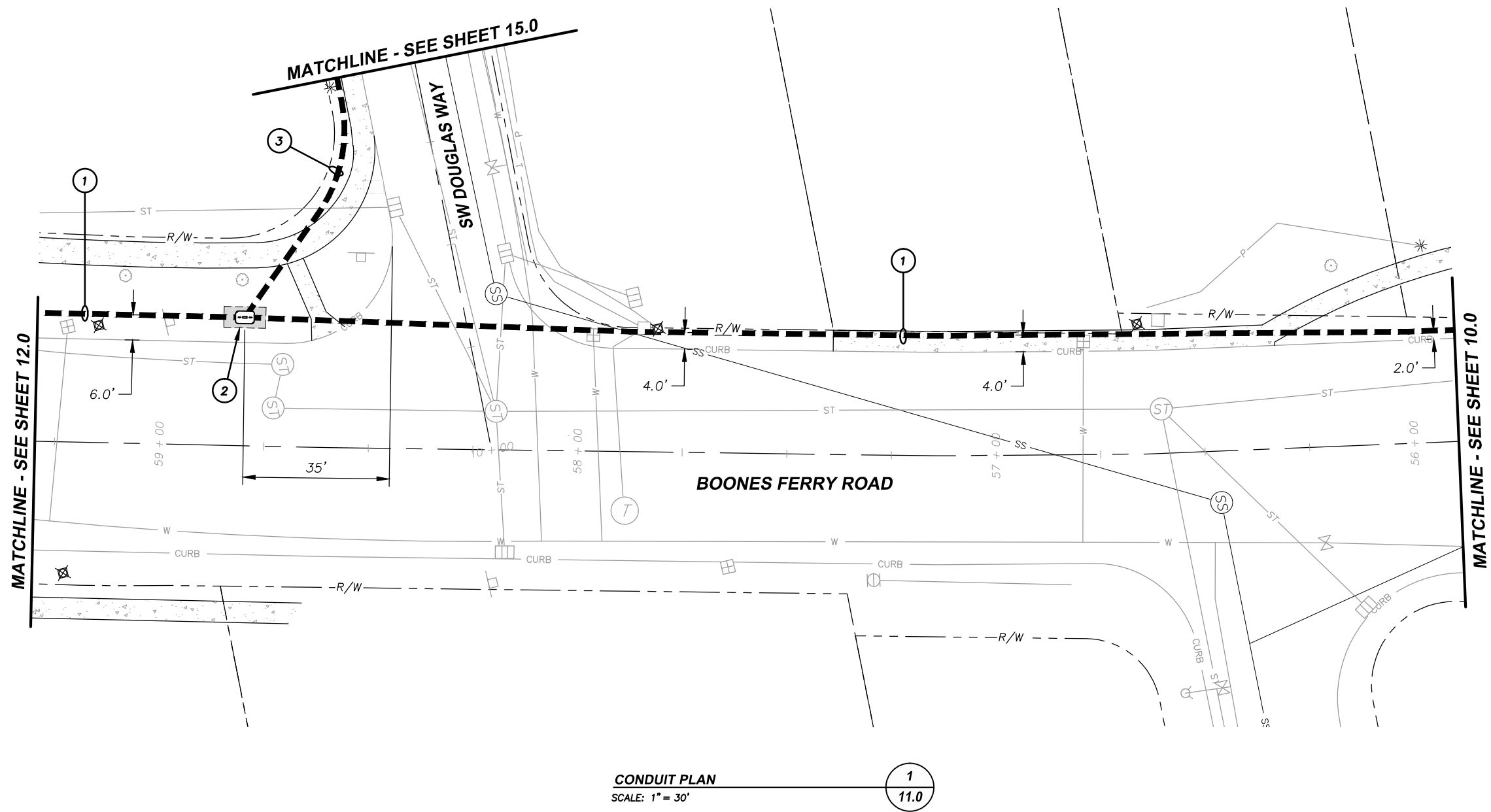
information at the speed of light

LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 7 - LAKE GROVE ELEMENTARY SCHOOL

CONDUIT PLAN

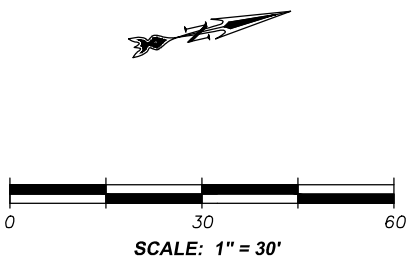
CITY: LAKE OSWEGO - TOWNSHIP 2 SOUTH RANGE 1 EAST SECTION: 5,8		COUNTY: CLACKAMAS CO., OREGON	
PLOT DATE: 3/17/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG - TAB_SHEET # LAKEO-S7-CP00.DWG - CP01_10.0	SHEET 10.0

CONSTRUCTION SET



CONSTRUCTION NOTES

- 1 PL ONE (1) NEW 2-WAY 18/14MM MICRO DUCT W/ RIPCORDER AND LOCATE WIRE.
PL NEW 144 MICRO CABLE THROUGH ONE VACANT MICRO DUCT.
- 2 PL NEW 24X36X36 OPEN BOTTOM UTILITY VAULT - PROPOSED BORE / RECEIVE PIT
PL NEW GROUND ROD, LOCATE WIRE ACCESS POINT AND GROUND WIRE IN VAULT.
PL NEW #6 AWG TAIL BETWEEN GROUND ROD AND TEST STATION GROUND LUG.
BOND #14 & #12 AWG LOCATE WIRE TO ACCESS POINT.
LEAVE 100' SLACK STORAGE IN NEW 144F MICRO CABLE COILED IN VAULT. (BACKBONE)
LEAVE 50' SLACK STORAGE IN NEW 24F CABLE COILED IN VAULT. (LAKE GROVE LATERAL)
RESTORE AREA AND LANDSCAPE TO "LIKE NEW" CONDITIONS.
- 3 PL ONE (1) NEW 2" SCH 40 PVC OR SDR 11 HDPE CONDUIT.
PL NEW 24F CABLE AND #12 AWG LOCATE WIRE THROUGH NEW CONDUIT.



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REVISIONS				
REV	DESCRIPTION	DATE	BY	APP

Clackamas Broadband eXchange

information at the speed of light

LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 7 - LAKE GROVE ELEMENTARY SCHOOL

CONDUIT PLAN

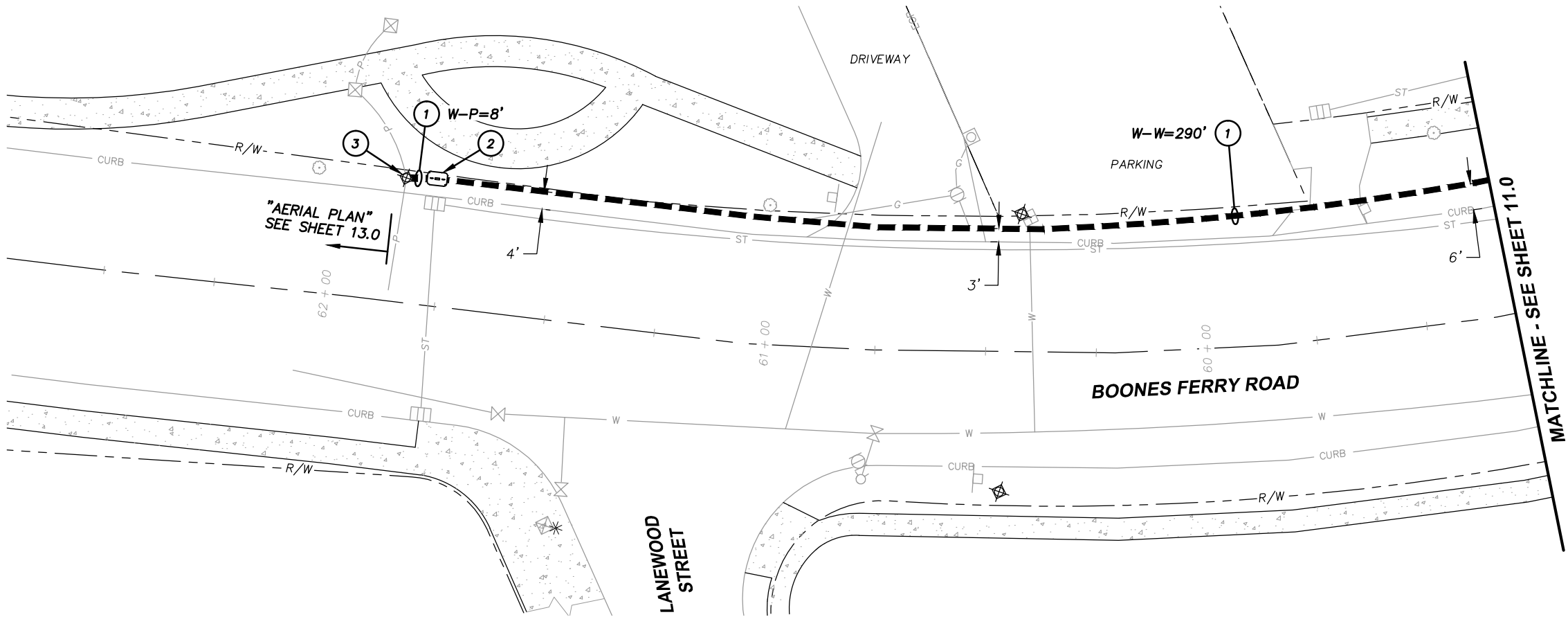
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PLOT DATE: 3/16/2017 SCALE: AS SHOWN PROJECT NAME-FILENAME.DWG - TAB_SHEET # SHEET 11.0

LAKE0-S7-CP00.DWG - CP01_11.0

CONSTRUCTION SET

Plot Date: 16 Mar 2017, 3:41pm By User: Tom
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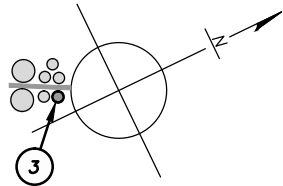


CONDUIT PLAN
SCALE: 1" = 30'

1
12.0

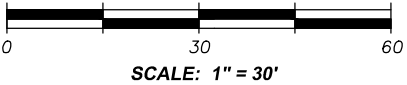
CONSTRUCTION NOTES

- 1 PL ONE (1) NEW 2-WAY 18/14MM MICRO DUCT W/ RIPCORD AND LOCATE WIRE.
PL NEW 144 MICRO CABLE THROUGH ONE VACANT MICRO DUCT.
- 2 PL NEW 24X36X36 OPEN BOTTOM UTILITY VAULT - PROPOSED BORE / RECEIVE PIT
PL NEW GROUND ROD, LOCATE WIRE ACCESS POINT AND GROUND WIRE IN VAULT.
PL NEW #6 AWG TAIL BETWEEN GROUND ROD AND TEST STATION GROUND LUG.
BOND #14 AWG LOCATE WIRE TO ACCESS POINT.
LEAVE 100' SLACK STORAGE IN NEW 144F MICRO CABLE COILED IN VAULT. (BACKBONE)
RESTORE AREA AND LANDSCAPE TO "LIKE NEW" CONDITIONS.
- 3 EXISTING PGE RISER POLE #3550 - PL NEW 2" PVC CONDUIT RISER (10' GRC)
TRANSITION NEW 2-WAY 18/14MM MICRO DUCT THROUGH NEW RISER.
PL NEW 144F MICRO CABLE THROUGH NEW RISER AND TRANSITION TO AERIAL.
EXISTING PGE RISER POLE #3550 - PL NEW 2" PVC CONDUIT RISER (10' GRC)
TRANSITION NEW 2-WAY 18/14MM MICRO DUCT THROUGH NEW RISER.
PL NEW 144F MICRO CABLE THROUGH NEW RISER AND TRANSITION TO AERIAL.



PGE POLE #3550 - RISER QUADRANT DETAIL
SCALE: (SEE RISER DETAIL SHEET 1.7)

2
12.0



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REVISIONS				
REV	DESCRIPTION	DATE	BY	APP

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information at the speed of light

LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 7 - LAKE GROVE ELEMENTARY SCHOOL
CONDUIT PLAN

CITY: LAKE OSWEGO - TOWNSHIP 2 SOUTH RANGE 1 EAST SECTION: 5,8

COUNTY: CLACKAMAS CO., OREGON

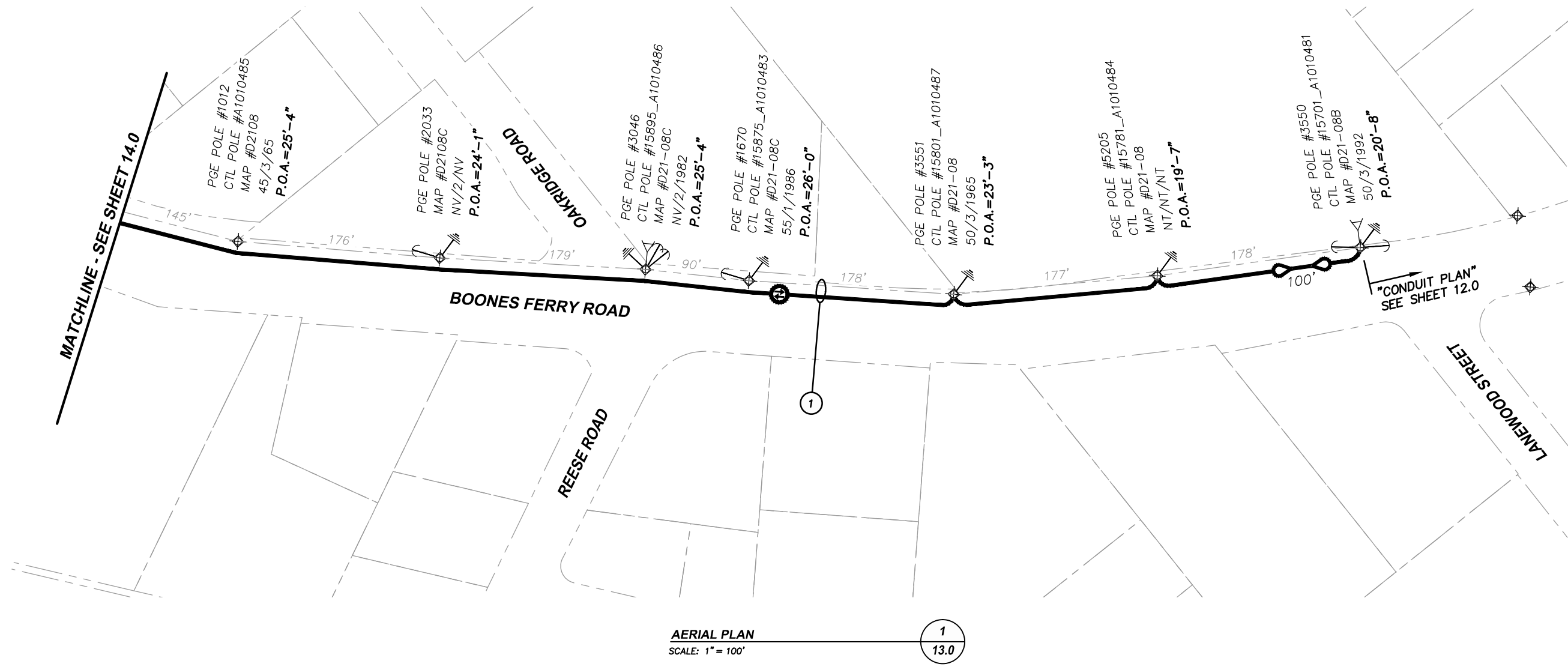
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3/16/2017

SCALE:
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PROJECT NAME-FILENAME.DWG - TAB_SHEET #
LAKEO-S7-CP00.DWG - CP01_12.0

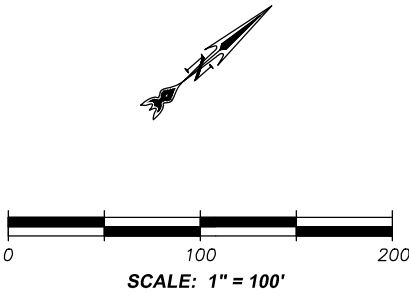
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CONSTRUCTION SET



CONSTRUCTION NOTES

- 1 PL NEW 144F MICRO CABLE ON EXISTING CITY OF LAKE OSWEGO TRAFFIC SIGNAL CABLE. LOOSE-LASH OR ZIP-TIE IN PLACE. CONTRACTOR TO TAKE CARE NOT TO DAMAGE MICRO CABLE DURING INSTALLATION. (PL FIBER TAG AT EACH POLE ATTACHMENT)



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DESIGNED BY: <u>T. WALKER</u>				
CHECKED BY: <u>J. GREENWOOD</u>		DRAWN BY: <u>T. BRADLEY</u>		
REVISIONS				
REV	DESCRIPTION	DATE	BY	APP

Clackamas Broadband eXchange

information at the speed of light

LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 7 - LAKE GROVE ELEMENTARY SCHOOL

AERIAL PLAN

CITY: LAKE OSWEGO – TOWNSHIP 2 SOUTH RANGE 1 EAST SECTION: 5,8

COUNTY: CLACKAMAS CO., OREGON

PLOT DATE: 3/16/2017

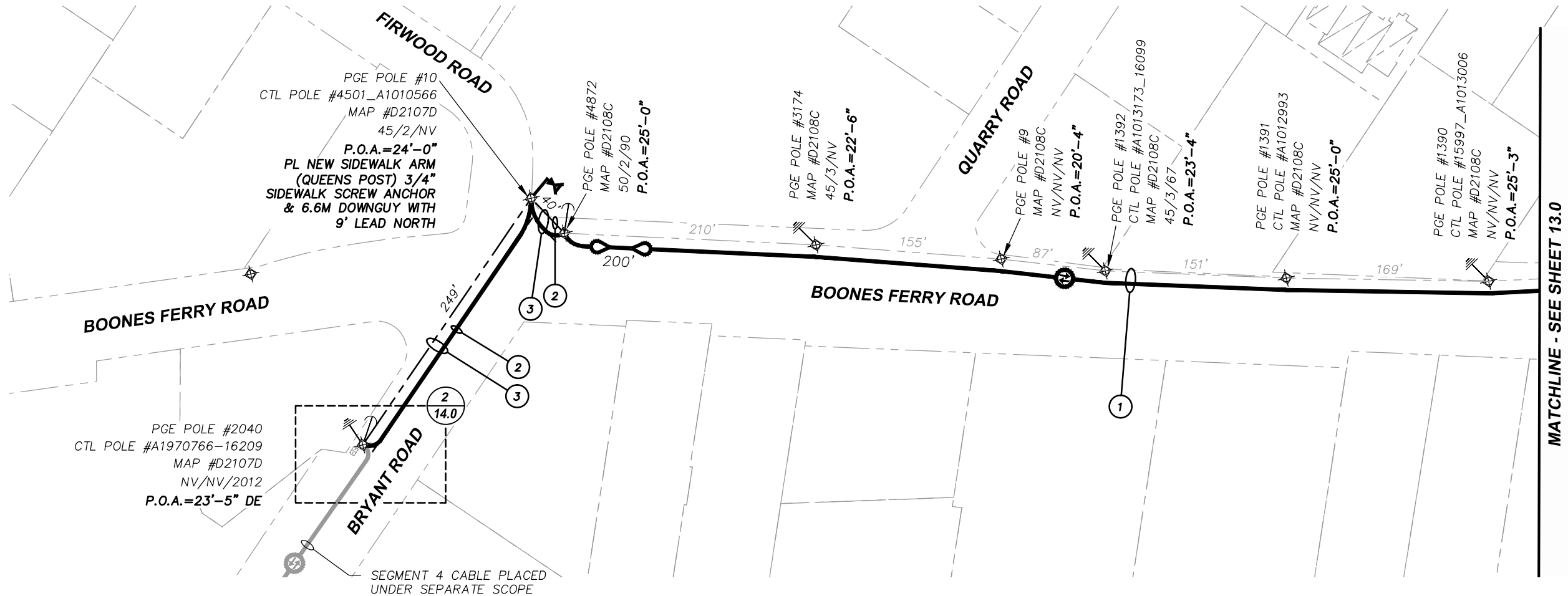
SCALE: AS SHOWN

PROJECT NAME-FILENAME.DWG – TAB_SHEET #
LAKE0-S7-CP00.DWG – AP01_13.0

SHEET
13.0

Plot Date: 16 Mar 2017, 3:41pm By User: Tom
Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 7\LAKE0-S7-CP00.DWG Layout (If Any): AP01_13.0

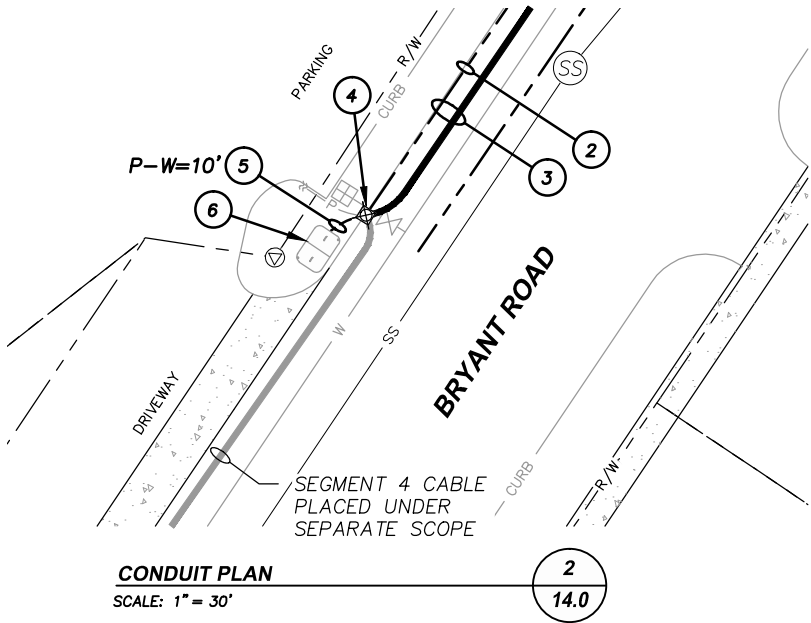
CONSTRUCTION SET



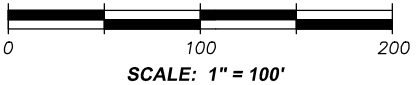
AERIAL PLAN
SCALE: 1" = 100'

CONSTRUCTION NOTES

- 1 PL NEW 144F MICRO CABLE ON EXISTING CITY OF LAKE OSWEGO TRAFFIC SIGNAL CABLE. LOOSE-LASH OR ZIP-TIE IN PLACE. CONTRACTOR TO TAKE CARE NOT TO DAMAGE MICRO CABLE DURING INSTALLATION. (PL FIBER TAG AT EACH POLE ATTACHMENT)
- 2 PL NEW 6.6M STRAND
- 3 LOOSE-LASH OR ZIP-TIE NEW 144F MICRO CABLE TO NEW STRAND. (PL FIBER TAG AT EACH POLE ATTACHMENT)
- 4 EXISTING PGE RISER POLE #2040 - PLACED ON SEGMENT #4
PL NEW 144F MICRO CABLE THROUGH RISER AND TRANSITION TO UNDERGROUND.
- 5 EXISTING THREE (3) 1-1/4" CONDUIT FROM POLE TO VAULT.
PL NEW 144F MICRO CABLE THROUGH ONE VACANT CONDUIT.
- 6 EXISTING 36X36X48 UTILITY VAULT - PLACED ON SEGMENT #4 - REEL-END SPLICE LOCATION
EXISTING 100' SLACK STORAGE IN 144F CABLE COILED IN VAULT. (SEGMENT 4)
LEAVE 100' SLACK STORAGE IN NEW 144F MICRO CABLE COILED IN VAULT. (SEGMENT 7)



PGE POLE #2040 - RISER QUADRANT DETAIL
SCALE: (SEE RISER DETAIL SHEET 1.7)



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REVISIONS				
REV	DESCRIPTION	DATE	BY	APP

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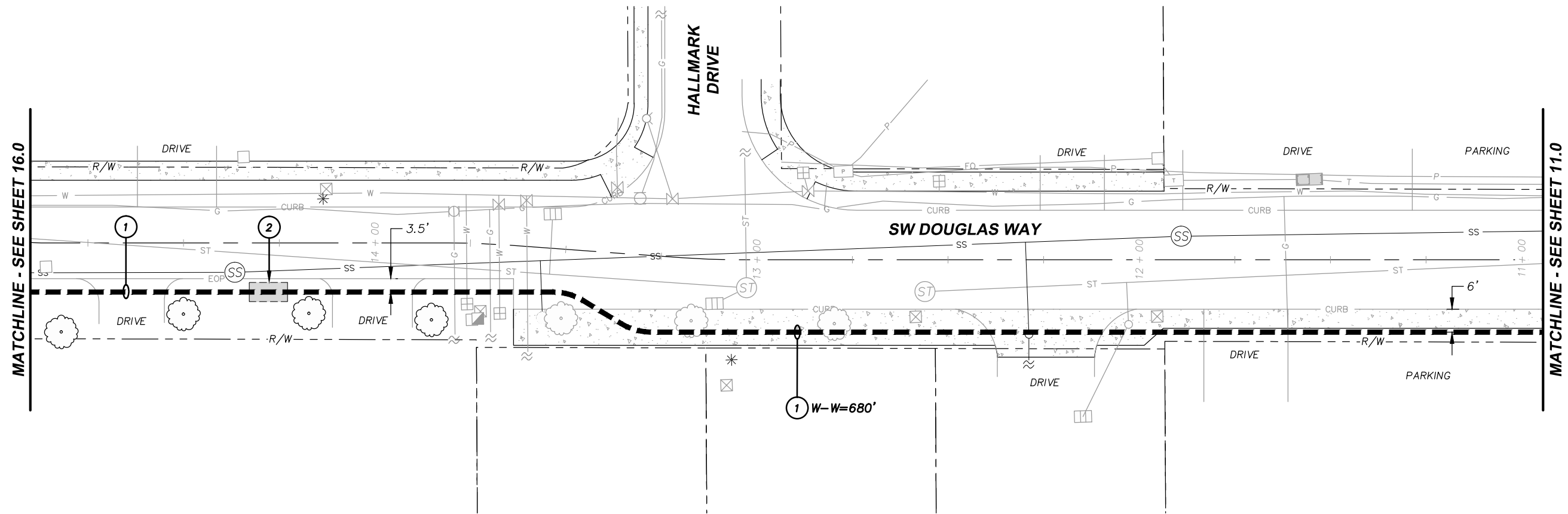
LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 7 - LAKE GROVE ELEMENTARY SCHOOL

AERIAL PLAN

CITY: LAKE OSWEGO - TOWNSHIP 2 SOUTH RANGE 1 EAST SECTION: 5,8 COUNTY: CLACKAMAS CO., OREGON

PLOT DATE: 3/16/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG - TAB_SHEET # LAKE0-S7-CP00.DWG - AP01_14.0	SHEET 14.0
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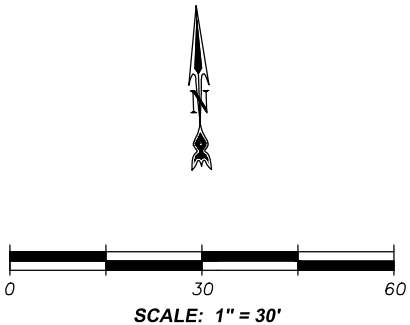
CONSTRUCTION SET



CONDUIT PLAN
SCALE: 1" = 30'

CONSTRUCTION NOTES

- 1 PL NEW 2" SCH 40 PVC OR SDR11 HDPE CONDUIT.
PL NEW 24F CABLE AND #12 AWG LOCATE WIRE THROUGH NEW CONDUIT.
- 2 PROPOSED BORE / RECEIVING PIT LOCATION
RESTORE AREA AND LANDSCAPE TO "LIKE NEW" CONDITIONS.



Plot Date: 16 Mar 2017, 3:41pm By User: Tom
Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 7\LAKEO-S7-CP00.DWG Layout (If Any): CP01_15.0

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CHECKED BY: <u>J. GREENWOOD</u>				
REVISIONS				
REV	DESCRIPTION	DATE	BY	APP

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LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 7 - LAKE GROVE ELEMENTARY SCHOOL
CONDUIT PLAN

CITY: LAKE OSWEGO – TOWNSHIP 2 SOUTH RANGE 1 EAST SECTION: 5,8

COUNTY: CLACKAMAS CO., OREGON

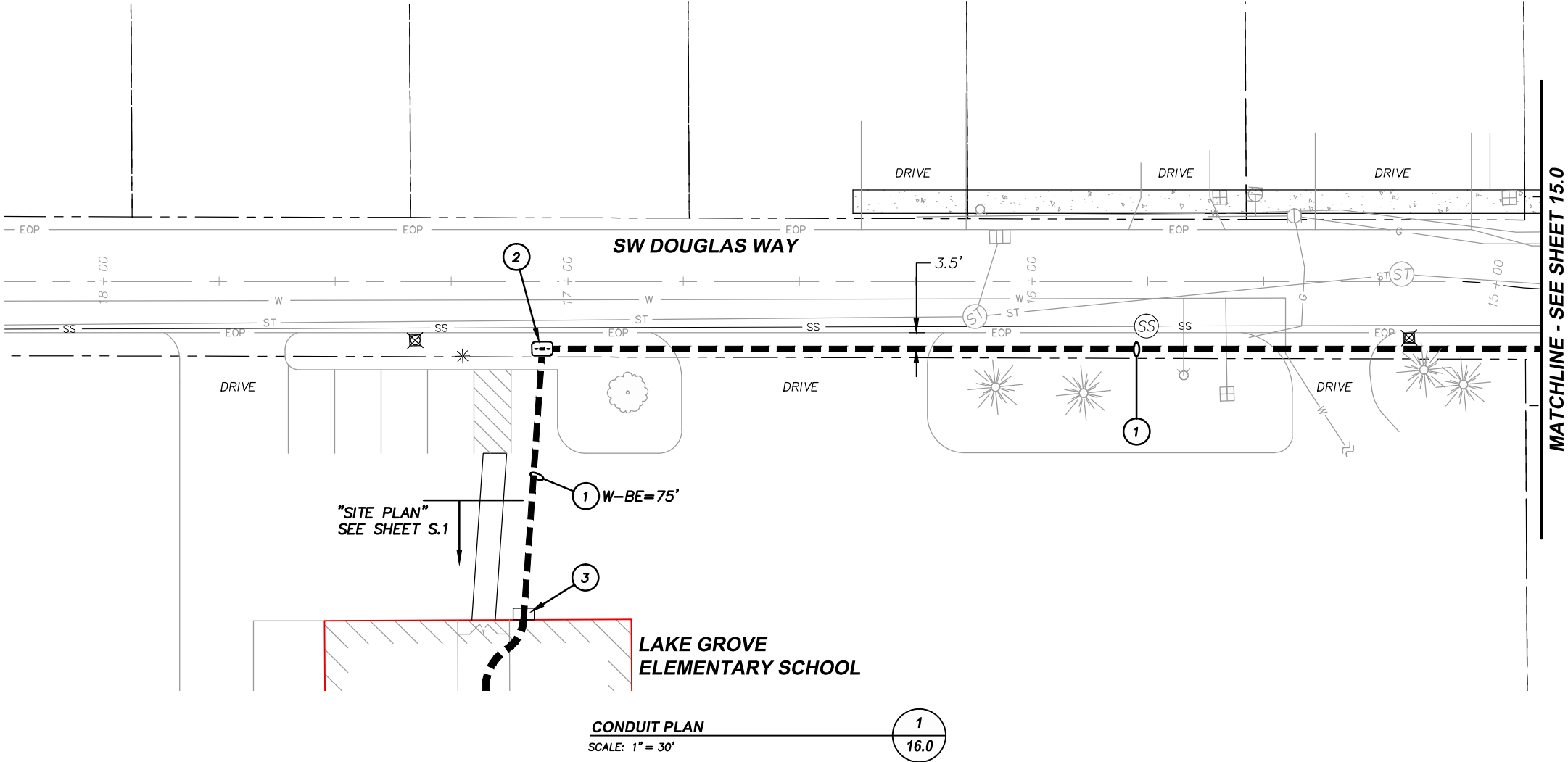
PLOT DATE: 3/16/2017

SCALE: AS SHOWN

PROJECT NAME-FILENAME.DWG – TAB_SHEET #
LAKEO-S7-CP00.DWG – CP01_15.0

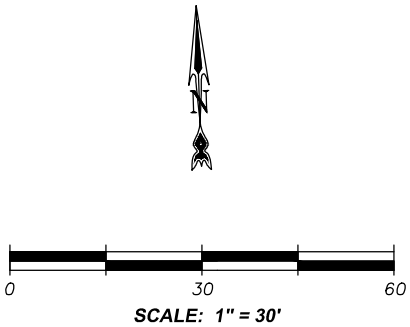
SHEET
15.0

CONSTRUCTION SET



CONSTRUCTION NOTES

- 1 PL NEW 2" SCH 40 PVC OR SDR11 HDPE CONDUIT.
PL NEW 24F CABLE AND #12 AWG LOCATE WIRE THROUGH NEW CONDUIT.
- 2 PL NEW 24X36X36 OPEN BOTTOM UTILITY VAULT – PROPOSED BORE / RECEIVE PIT
PL NEW GROUND ROD, LOCATE WIRE ACCESS POINT AND GROUND WIRE IN VAULT.
PL NEW #6 AWG TAIL BETWEEN GROUND ROD AND TEST STATION GROUND LUG.
BOND #12 AWG LOCATE WIRE TO ACCESS POINT.
LEAVE 100' SLACK STORAGE IN NEW 24F CABLE COILED IN VAULT.
RESTORE AREA AND LANDSCAPE TO "LIKE NEW" CONDITIONS.
- 3 PL NEW 2" PVC CONDUIT BEND (3'R 5'L MIN).
STUB CONDUIT ON EXTERIOR FACILITY WALL.



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REVISIONS

REV	DESCRIPTION	DATE	BY	APP

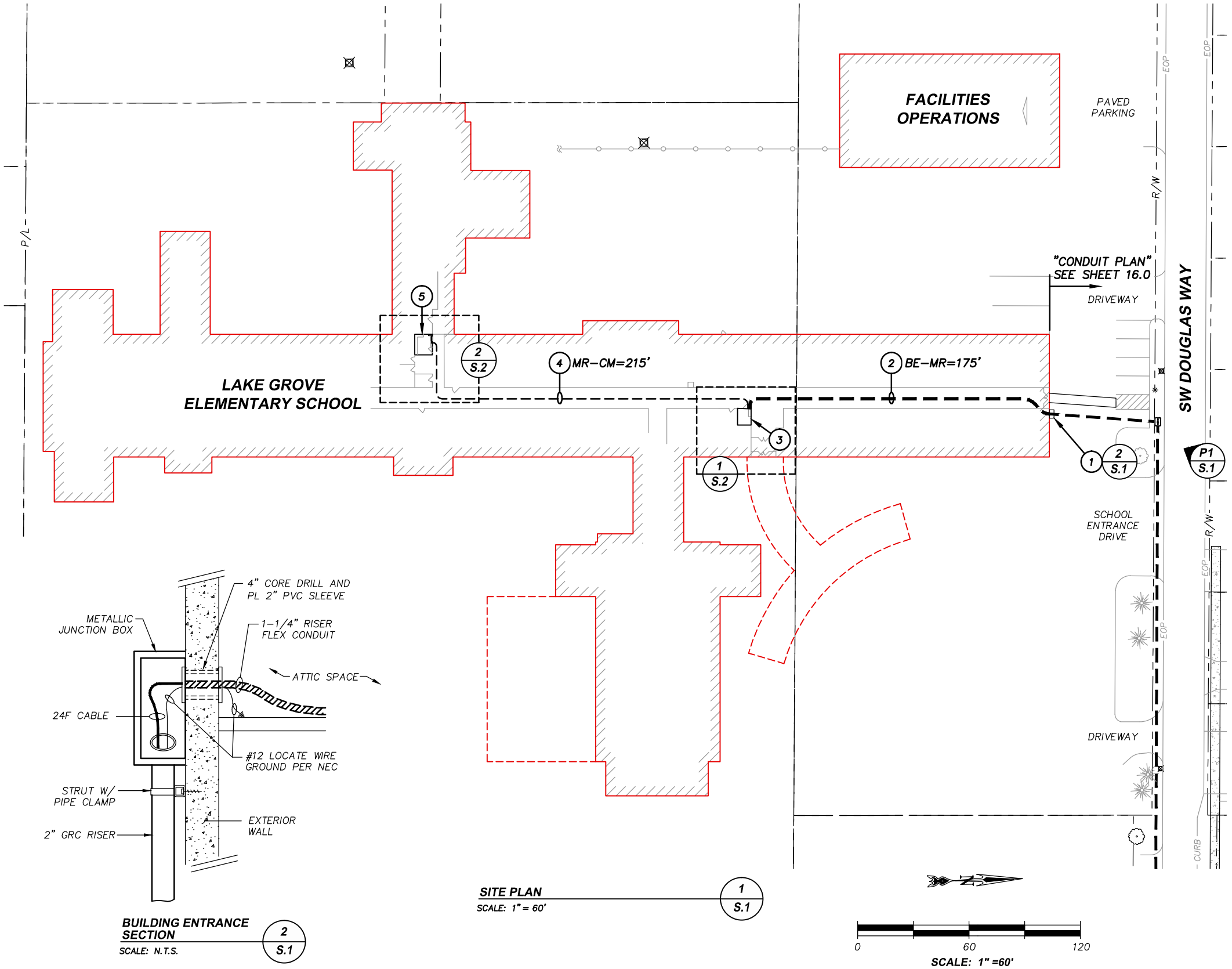
Clackamas Broadband eXchange

information at the speed of light

LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 7 - LAKE GROVE ELEMENTARY SCHOOL
CONDUIT PLAN

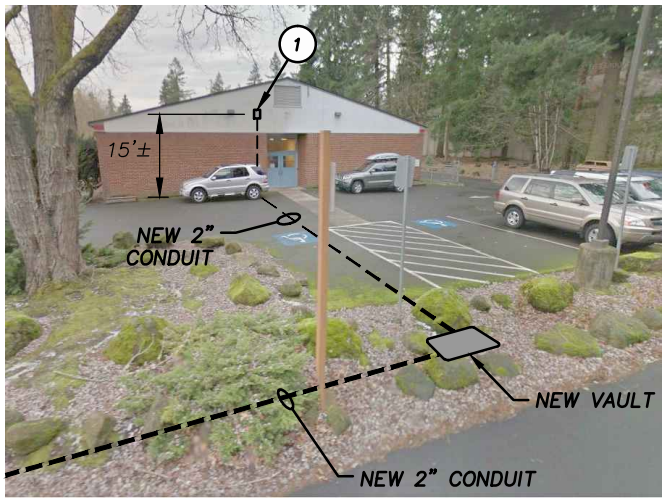
CITY: LAKE OSWEGO – TOWNSHIP 2 SOUTH RANGE 1 EAST SECTION: 5,8		COUNTY: CLACKAMAS CO., OREGON	
PLOT DATE: 3/16/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG – TAB_SHEET # LAKEO-S7-CP00.DWG – CP01_16.0	SHEET 16.0

CONSTRUCTION SET



CONSTRUCTION NOTES

- 1 PROPOSED BUILDING ENTRY LOCATION – SEE SHELTER ENTRY DETAIL. CORE DRILL EXTERIOR WALL – PL NEW 2" PVC WALL SLEEVE. RE-SEAL OPENING AROUND CORE DRILL AND WALL SLEEVE WITH CONDUIT SEAL OR EQUAL. PL NEW 12X12X8 NEMA 3R METALLIC JUNCTION BOX OVER CORE DRILL AND SECURE TO WALL. PL 2" SCH-40 GRC RISER FROM STUB AT BUILDING AND TERMINATE CONDUIT IN NEW BUILDING ENTRY JUNCTION BOX. SECURE RISER TO EXTERIOR BUILDING WALL USING STRUTS AND CLAMPS. PL NEW 24F CABLE AND #12 LOCATE WIRE THROUGH RISER AND CORE DRILL. TERMINATE #12 LOCATE WIRE AND BOND ARMORED CABLE SHEATH TO NEAREST SUITABLE BUILDING GROUND PER NEC.
- 2 PL NEW 1-1/4" RISER FLEX CONDUIT FROM BUILDING ENTRY LOCATION TO FACILITY MECHANICAL ROOM. SECURE TO RAFTERS AS REQUIRED IN A NEAT AND WORKMAN LIKE MANNER. PL NEW 24F CABLE THROUGH NEW RISER FLEX.
- 3 FACILITY MECHANICAL ROOM.
- 4 EXISTING 1-1/4" RISER FLEX CONDUIT FROM MECHANICAL ROOM TO COMM ROOM. PL NEW 24F CABLE THROUGH EXISTING CONDUIT.
- 5 LAKE GROVE ELEMENTARY COMM ROOM.



BUILDING ENTRANCE
SCALE: N.T.S.

Plot Date: 16 Mar 2017, 3:42pm By User: Tom
Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 7\LAKE0-S7-CP00.DWG Layout (If Any): SP01_S.1

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CHECKED BY:	<u>J. GREENWOOD</u>	DRAWN BY:	<u>T. BRADLEY</u>	
REVISIONS				
REV	DESCRIPTION	DATE	BY	APP

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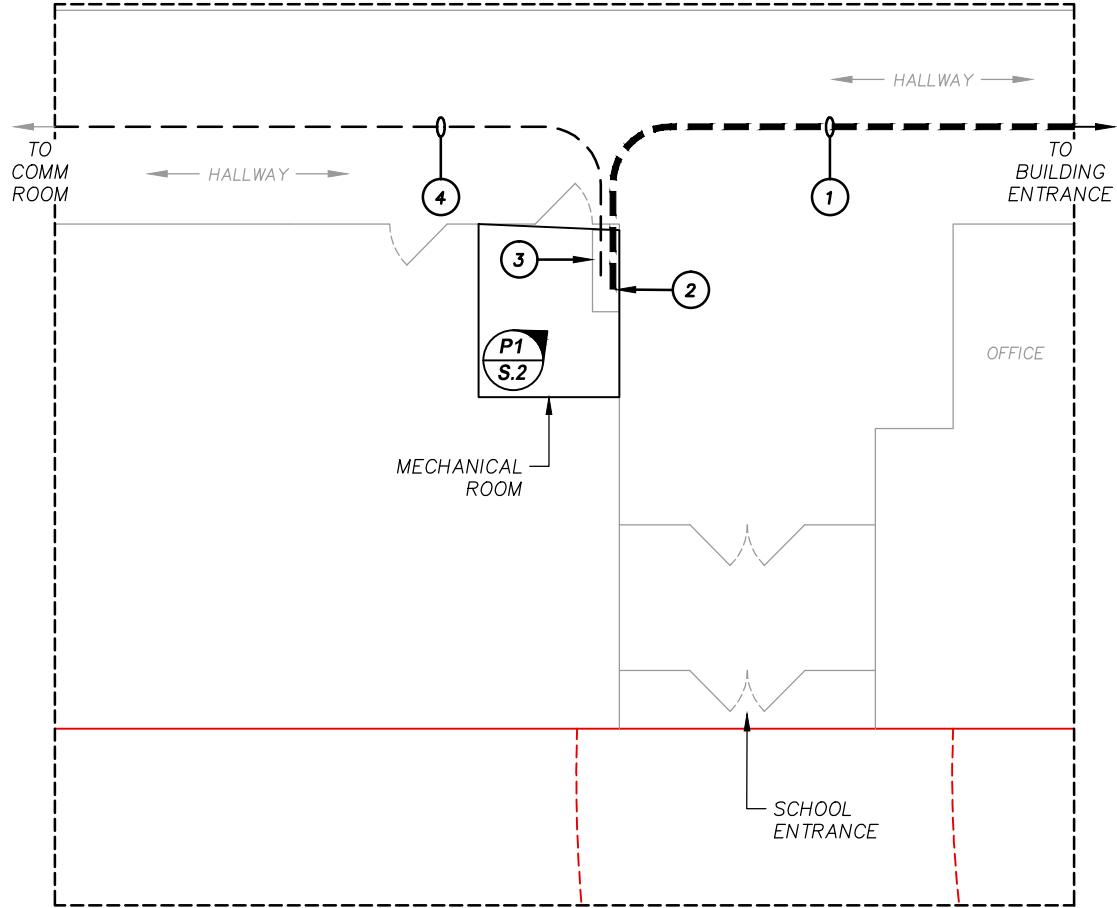
**LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 7 - LAKE GROVE ELEMENTARY SCHOOL**

SITE PLAN

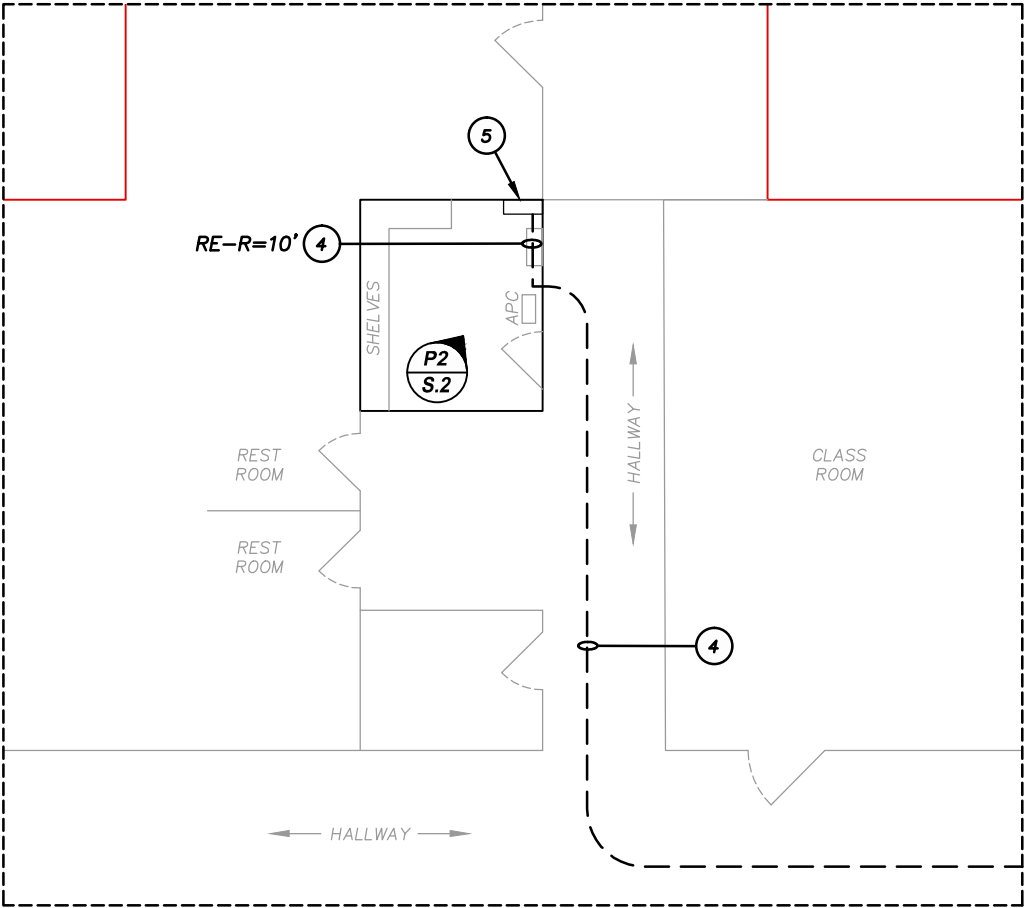
CITY: LAKE OSWEGO – TOWNSHIP 2 SOUTH RANGE 1 EAST SECTION: 5,8 COUNTY: CLACKAMAS CO., OREGON

PLOT DATE: 3/16/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG – TAB_SHEET # LAKE0-S7-CP00.DWG – SP01_S.1	SHEET S.1
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CONSTRUCTION SET



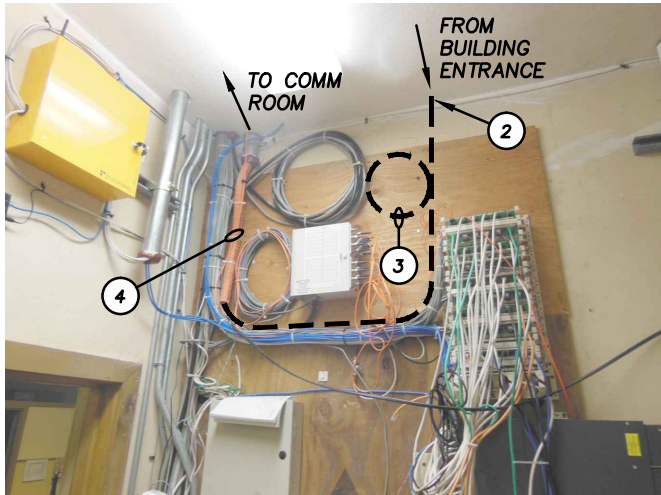
MECHANICAL ROOM
SCALE: 1" = 10'



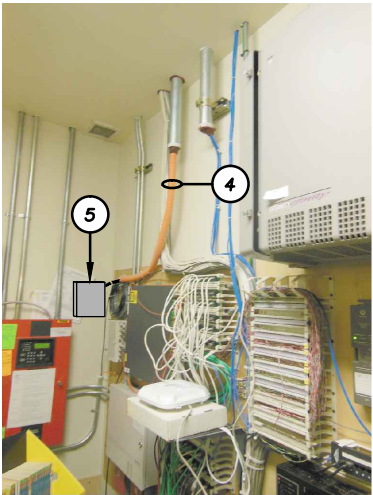
COMM ROOM
(TEXTBOOK ROOM)
SCALE: 1" = 10'

CONSTRUCTION NOTES

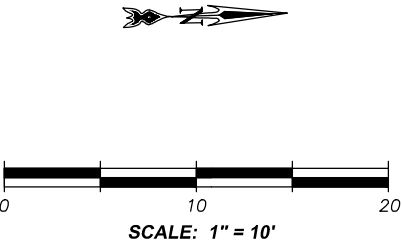
- 1 PL NEW 1-1/4" RISER FLEX CONDUIT FROM BUILDING ENTRY LOCATION TO FACILITY MECHANICAL ROOM. SECURE TO RAFTERS AS REQUIRED IN A NEAT AND WORKMAN LIKE MANNER. PL NEW 24F CABLE THROUGH NEW RISER FLEX.
- 2 CORE CEILING AND TRANSITION RISER FLEX TO MECHANICAL ROOM INTERIOR. SEAL WITH FIRE STOP PUTTY AS REQUIRED.
- 3 TRANSITION NEW 24F CABLE TO INTERIOR. LEAVE 50' SLACK STORAGE COILED ON BACKBOARD.
- 4 EXISTING 1-1/4" RISER FLEX CONDUIT FROM MECHANICAL ROOM TO COMM ROOM. PL NEW 24F CABLE THROUGH EXISTING CONDUIT.
- 5 PROPOSED WALL MOUNT RACK LOCATION - SCHOOL DISTRICT TO PLACE LEAVE 30' SLACK STORAGE IN NEW 24f CABLE COILED ON BACKBOARD FOR TERMINATION.



MECHANICAL ROOM
SCALE: N.T.S.



COMM ROOM
SCALE: N.T.S.



Plot Date: 16 Mar 2017, 3:42pm By User: Tom
Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 7\LAKEO-S7-CP00.DWG Layout (If Any): SP01_S.2

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CHECKED BY:	J. GREENWOOD		
REVISIONS			
REV	DESCRIPTION	DATE	BY APP

Clackamas Broadband eXchange

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LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 7 - LAKE GROVE ELEMENTARY SCHOOL
BUILDING ENTRANCE PLAN

CITY: LAKE OSWEGO – TOWNSHIP 2 SOUTH RANGE 1 EAST SECTION: 5,8

COUNTY: CLACKAMAS CO., OREGON

PLOT DATE:
3/16/2017

SCALE:
AS SHOWN

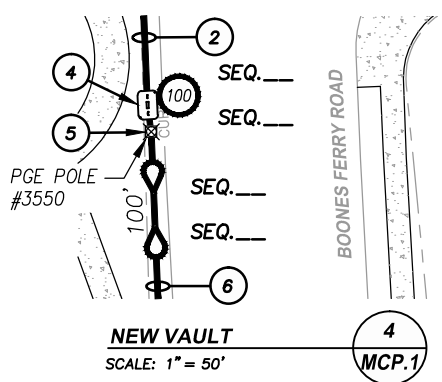
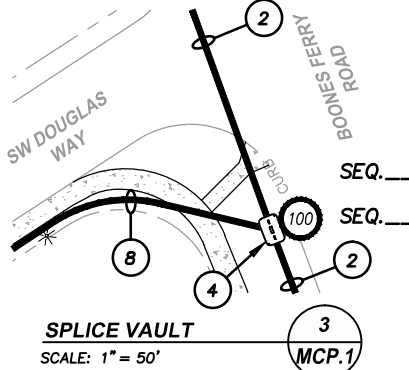
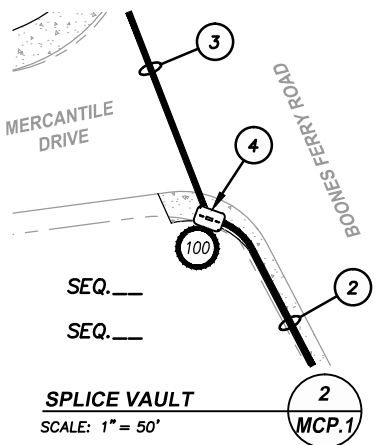
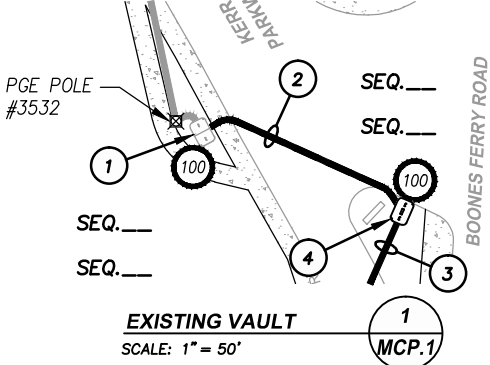
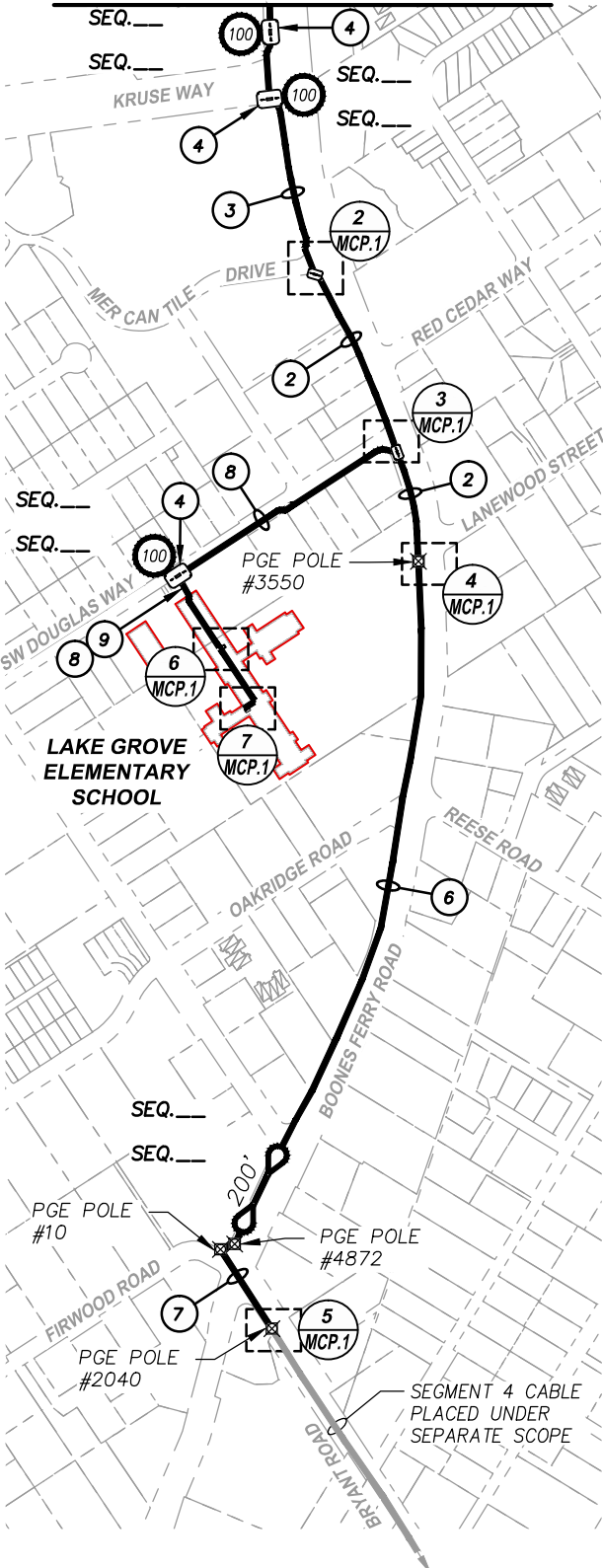
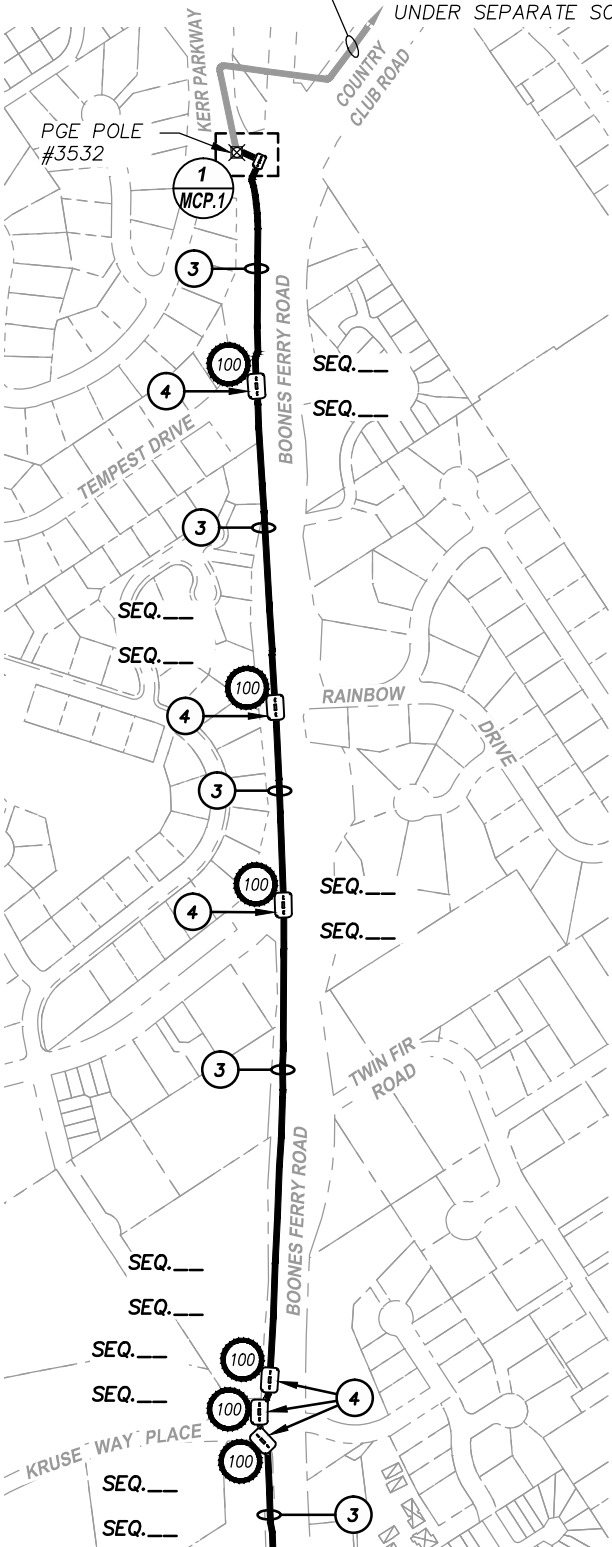
PROJECT NAME-FILENAME.DWG – TAB_SHEET #
LAKEO-S7-CP00.DWG – SP01_S.2

SHEET
S.2

CONSTRUCTION SET

SEGMENT 1 CABLE PLACED UNDER SEPARATE SCOPE

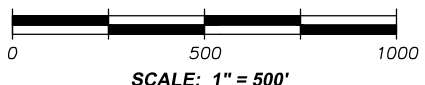
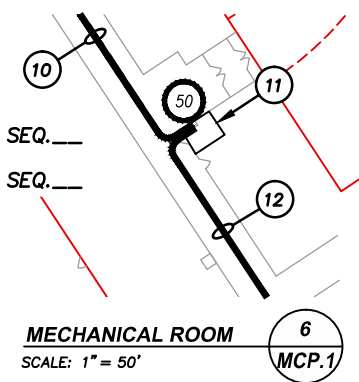
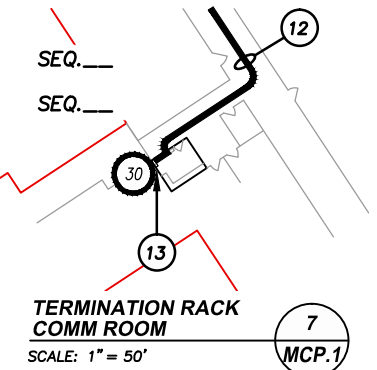
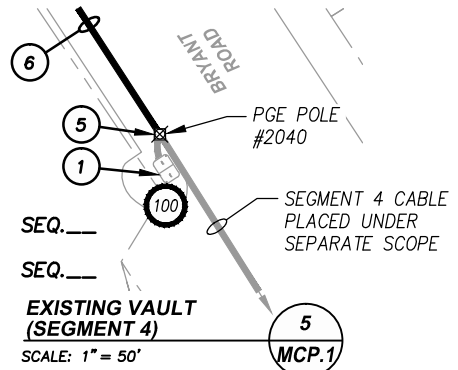
MATCHLINE - SEE BELOW LEFT



CONSTRUCTION NOTES

- 1 EXISTING VAULT – REEL-END SPLICE LOCATION. LEAVE 100' SLACK STORAGE IN NEW 144F MICRO CABLE COILED IN VAULT.
- 2 PL NEW 144F MICRO CABLE THROUGH NEW MICRO DUCT.
- 3 PL NEW 144F MICRO CABLE THROUGH EXISTING TRAFFIC SIGNAL CONDUIT.
- 4 LEAVE 100' SLACK STORAGE IN NEW CABLE COILED IN NEW VAULT.
- 5 RISER POLE – PL NEW 144F MICRO CABLE THROUGH RISER.
- 6 PL NEW 144 MICRO CABLE ON EXISTING TRAFFIC SIGNAL STRAND AND CABLE.
- 7 PL NEW 144F MICRO CABLE ON NEW STRAND.
- 8 PL NEW 24F CABLE THROUGH NEW 2" CONDUIT.
- 9 PL NEW 24F CABLE THROUGH NEW BUILDING ENTRY CONDUIT AND JUNCTION BOX.
- 10 PL NEW 24F CABLE THROUGH NEW RISER FLEX CONDUIT.
- 11 LEAVE 50' SLACK STORAGE IN NEW 24F CABLE COILED ON BACKBOARD.
- 12 PL NEW 24F CABLE THROUGH EXISTING RISER FLEX CONDUIT.
- 13 LEAVE 30' SLACK STORAGE IN NEW 24F CABLE COILED ON BACKBOARD FOR TERMINATION.

MATERIAL / INSTALLATION RAKE-OFF
SEE JOB SCOPE - SHEET 1.1



MASTER CABLE PLAN
SCALE: 1" = 500'

1
MCP.1

DESIGNED BY: T. WALKER
CHECKED BY: J. GREENWOOD
DRAWN BY: T. BRADLEY

REVISIONS				
REV	DESCRIPTION	DATE	BY	APP

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LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 7 - LAKE GROVE ELEMENTARY SCHOOL

MASTER CABLE PLAN

CITY: LAKE OSWEGO – TOWNSHIP 2 SOUTH RANGE 1 EAST SECTION: 5,8		COUNTY: CLACKAMAS CO., OREGON	
PLOT DATE: 3/16/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG – TAB_SHEET # LAKEO-S7-CP00.DWG – SP01_MCP.1	SHEET MCP.1

Plot Date: 16 Mar 2017, 3:43pm By User: Tom
Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 7\LAKEO-S7-CP00.DWG Layout (If Any): SP01_MCP.1

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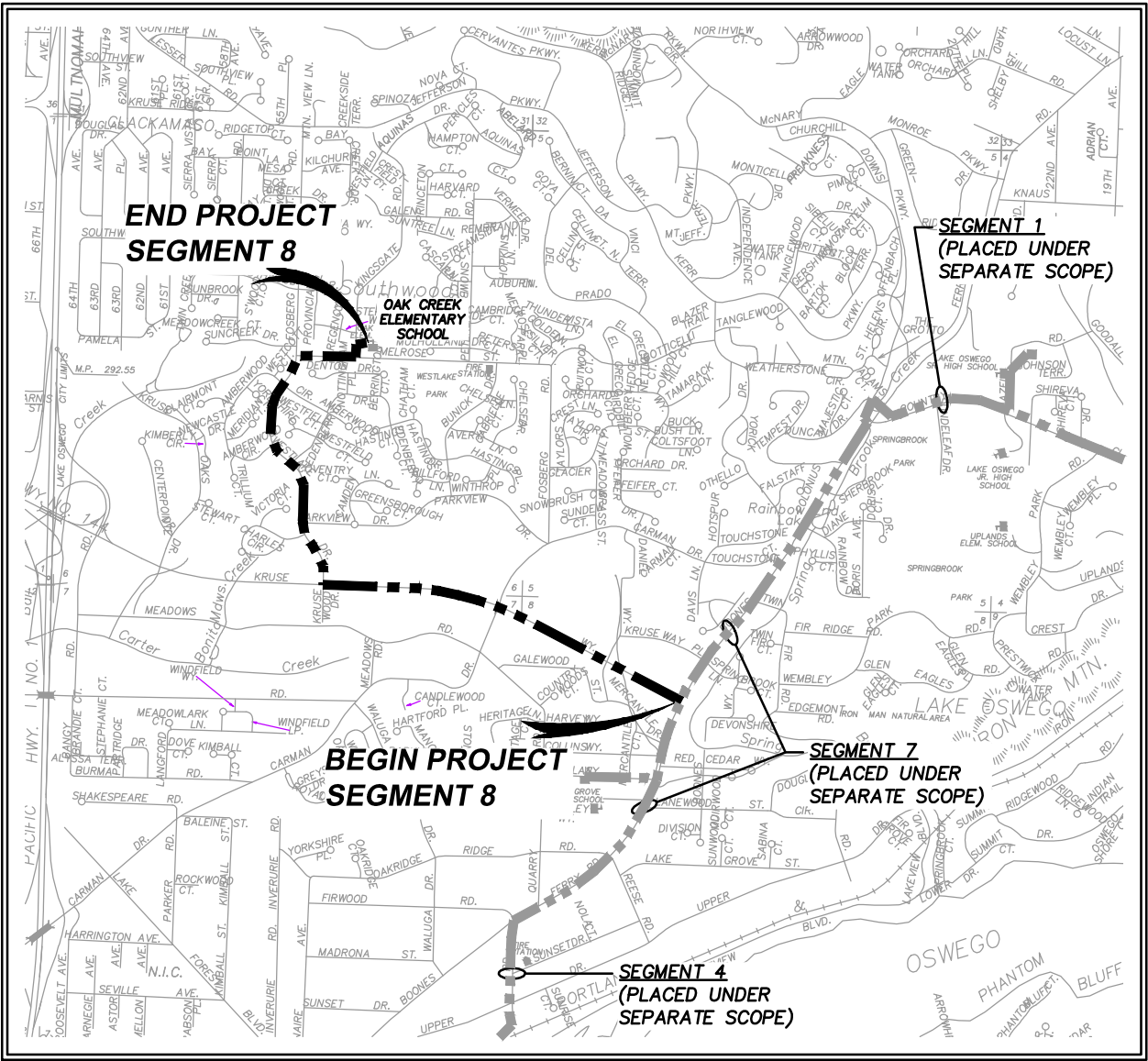
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Main Office:
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CLACKAMAS BROADBAND EXCHANGE

LAKE OSWEGO SCHOOL DISTRICT EXPANSION // SEGMENT 8 - OAK CREEK ELEMENTARY SCHOOL

CITY OF LAKE OSWEGO, CLACKAMAS COUNTY, OREGON
TOWNSHIP 02 SOUTH , RANGE 01 EAST, SECTIONS 6,7,8
March 2017



VICINITY MAP
SCALE: NTS

1
1.0

SHEET INDEX

SHEET NAME	DESCRIPTION
1.0	COVER SHEET – VICINITY MAP
1.1	JOB SCOPE – MATERIAL RAKE-OFF
1.2	LEGEND
1.3	GENERAL NOTES
1.4	GENERAL NOTES
1.5	GENERAL NOTES
1.6	VAULT DETAILS
1.7	RISER DETAILS / LOCATE WIRE AND BONDING DETAILS
2.0	CONDUIT PLAN:
3.0	CONDUIT PLAN:
4.0	CONDUIT PLAN:
5.0	CONDUIT PLAN:
6.0	CONDUIT PLAN:
7.0	CONDUIT PLAN:
8.0	CONDUIT PLAN:
9.0	CONDUIT PLAN:
10.0	CONDUIT PLAN:
11.0	CONDUIT PLAN:
12.0	CONDUIT PLAN:
13.0	CONDUIT PLAN:
14.0	CONDUIT PLAN:
15.0	CONDUIT PLAN:
16.0	CONDUIT PLAN:
17.0	CONDUIT PLAN:
18.0	CONDUIT PLAN:
19.0	CONDUIT PLAN:
20.0	CONDUIT PLAN:
S.1	SITE PLAN:
S.2	BUILDING ENTRANCE PLAN:
MCP.1	MASTER CABLE PLAN:
MCP.2	MASTER CABLE PLAN:

OWNER / APPLICANT

CLACKAMAS BROADBAND EXCHANGE
121 LIBRARY COURT
OREGON CITY, OR 97045
OFFICE: 503.655.8322

CONTACT: DUKE DEXTER; BROADBAND PROJECT COORDINATOR
OFFICE: 503.722.6663 CELL: 971.219.3339
E-MAIL: DDEXTER@CO.CLACKAMAS.OR.US

DESIGN CONSULTANTS

COMMSTRUCTURE CONSULTING LLC
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CONTACT: JAMES GREENWOOD EIT, OSP PROJECT MANAGER
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E-MAIL: JAMES@COMMSTRUCTURECONSULTING.COM

CONTACT: TERENCE WALKER, PROJECT DESIGNER
DIRECT: 971.266.4429
E-MAIL: TERENCE@COMMSTRUCTURECONSULTING.COM



Know what's below.
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OREGON ADMINISTRATIVE RULES 952-001-0020

PROJECT PLANS TO NOTIFY EXCAVATOR OF REQUIREMENTS OF LAW
ALL PROJECT PLANS SHALL CONTAIN THE FOLLOWING STATEMENT:

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 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).

STAT. AUTH.: SEC. 1 – 5 & 7, CH. 691, OL 1995
STATS. IMPLEMENTED:
HIST.: OUNC 1-1997, F. & CERT. EF. 4-17-97

Clackamas Broadband eXchange

information at the speed of light

LAKE OSWEGO SCHOOL DISTRICT EXPANSION SEGMENT 8 - OAK CREEK ELEMENTARY SCHOOL COVER SHEET - VICINITY MAP

CITY: LAKE OSWEGO – TOWNSHIP 02 SOUTH RANGE 01 EAST SECTION: 6,7,8 COUNTY: CLACKAMAS CO., OREGON
PLOT DATE: 3/17/2017 SCALE: AS SHOWN PROJECT NAME-FILENAME.DWG – TAB_SHEET # SHEET 1.0
LAKEO-S8-CS00.DWG – CS01_1.0

CONSTRUCTION SET

JOB SCOPE

LAKE OSWEGO, OREGON
CLACKAMAS COUNTY

TOWNSHIP 2S – RANGE 1E – SECTIONS 6, 7 & 8

PROJECT SUMMARY

THIS PROJECT WILL PROVIDE BACKBONE INFRASTRUCTURE EXPANSION OF THE CLACKAMAS BROADBAND EXCHANGE (CBX) NETWORK IN LAKE OSWEGO, OREGON. SPECIFICALLY, THIS PROJECT WILL FACILITATE EXPANDED BROADBAND CONNECTIVITY FOR THE LAKE OSWEGO SCHOOL DISTRICT SITES AND FACILITIES IN THE AREA. THIS PROJECT IS DIVIDED INTO 10 SEPARATE BUT CONTINUOUS BACKBONE SEGMENTS WITH THE COMBINED ROUTE TOTALING APPROXIMATELY 70,000 FEET OF NEW AERIAL AND UNDERGROUND INFRASTRUCTURE. THE FOLLOWING IS THE SCOPE OF WORK AND SUMMARY FOR THIS SPECIFIC SEGMENT DESIGN PACKAGE.

LATERAL – SEGMENT 8

SEGMENT 8 WILL CREATE A NEW FIBER OPTIC BACKBONE NETWORK CONNECTION WITH THE LAKE OSWEGO SCHOOL DISTRICT EXPANSION BACKBONE AND CONNECT TO THE SEGMENT 7 BACKBONE.

BEGINNING AT PROPOSED SEGMENT 7 MID–SHEATH SPLICE LOCATION IN AN EXISTING CITY OF LAKE OSWEGO TRAFFIC SIGNAL VAULT LOCATED ON THE SOUTHWEST CORNER OF KRUSE WAY AND BOONES FERRY RD. EXISTING CITY OF LAKE OSWEGO TRAFFIC SIGNAL CONDUIT EXTENDS WEST ALONG THE SOUTH SIDE OF KRUSE WAY BEHIND THE CURB CONTINUING APPROXIMATELY 4,200’ TO THE SOUTH EAST CORNER OF THE INTERSECTION OF KRUSE WAY AND KRUSE WOODS DR. PERIODIC EXISTING TRAFFIC SIGNAL JUNCTION BOXES ALONG THE ROUTE MAY NEED TO BE REMOVED AND REPLACED WITH LARGER VAULTS TO FACILITATE CABLE PLACEMENT. CONTRACTOR TO ROD AND PROOF ALL DUCTS AND VERIFY ALL VAULTS ARE SUITABLE FOR CABLE PLACEMENT PRIOR TO CONSTRUCTION. A NEW TWO–WAY 18/14MM MICRO CONDUIT WILL BE PLACED THROUGH THE EXISTING TRAFFIC SIGNAL CONDUIT AND A NEW 144F MICRO CABLE WILL BE PLACED THROUGH ONE VACANT MICRO DUCT.

AT THE SOUTH EAST CORNER OF THE INTERSECTION OF KRUSE WAY AND KRUSE WOODS DR. THE MICRO CONDUIT PATHWAY WILL TERMINATE IN THE EXISTING TRAFFIC SIGNAL VAULT. FROM HERE A NEW 2”CONDUIT PATHWAY WILL BE CONSTRUCTED NORTH ALONG THE EAST SIDE OF WESTLAKE DR. CONTINUING APPROXIMATELY 3,000’ TO THE SE CORNER OF THE INTERSECTION OF WESTLAKE DR. AND MELROSE ST. HERE THE NEW CONDUIT PATHWAY WILL TRANSITION EAST ALONG THE SOUTH SIDE OF MELROSE ST. APPROXIMATELY 600’ THEN CONTINUE NORTH ALONG THE WEST SIDE OF KINGSGATE RD APPROXIMATELY 500’ AND THEN TRANSITION WEST CROSSING THE ROAD AND ENTERING THE OAK CREEK SCHOOL PROPERTY. A NEW 24F CABLE WILL BE PLACED THROUGH THE NEW CONDUIT PATHWAY AS DESCRIBED ABOVE.

ONCE ON THE OAK CREEK SCHOOL PROPERTY A NEW UTILITY VAULT WILL BE PLACED TO INTERCEPT THE EXISTING BUILDING ENTRANCE CONDUIT. FROM THIS NEW VAULT THE EXISTING CONDUIT PATHWAY TRANSITIONS EAST IN FRONT OF OAK CREEK ELEMENTARY SCHOOL TO THE EXISTING BUILDING ENTRANCE LOCATION THEN INTO THE OAK CREEK ELEMENTARY SCHOOL COMM ROOM. FROM THE COMM ROOM ENTRANCE LOCATION NEW RISER FLEX CONDUIT WILL BE PLACED TO THE EXISTING RACK AND PROPOSED CBX EQUIPMENT LOCATION. THE NEW 24F CABLE WILL TRANSITION THROUGH THE NEW AND EXISTING BUILDING ENTRANCE CONDUIT, THE NEW RISER FLEX CONDUIT AND COIL AT THE PROPOSED CBX EQUIPMENT LOCATION FOR TERMINATION.

CONTRACTOR WILL BE RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE CITY, COUNTY, STATE AND PRIVATE AGENCY RIGHT OF WAY AND POLE ATTACHMENT PERMIT REQUIREMENTS INCLUDING TRAFFIC CONTROL, WORK HOUR RESTRICTIONS, NOTIFICATIONS AND RESTORATION. CABLE REEL LOCATIONS ALONG WITH SLACK STORAGE IN THE FIBER CABLE WILL BE PLACED AT AERIAL STORAGE AND VAULT LOCATIONS AS DESIGNATED IN THE CONSTRUCTION DRAWINGS AND FIBER OWNERSHIP TAGS WILL BE PLACED ON THE CABLE AT EVERY POLE AND EVERY VAULT LOCATION. THE CONTRACTOR WILL PLUG ALL VACATED HOLES FROM ABANDON OR RELOCATED ATTACHMENTS PER POLE OWNER SPECIFICATIONS. CONTRACTOR WILL TEST AND VERIFY THE EXISTING CONDUIT PRIOR TO INSTALLATION OF THE NEW FIBER OPTIC CABLE AND LOCATE WIRE. CONTRACTOR WILL CLEAN AND TAG FIBER COILS; PREP FOR SPLICE; PLACE LOCATE WIRE; TEST STATIONS; GROUND RODS; AND GROUND WIRE AS REQUIRED AND DETAILED IN THE CONSTRUCTION DRAWINGS WITH REPLACING ANY MISSING LOCATE WIRE WITHIN THE EXISTING CONDUIT PATHWAYS.

PERMITS

CITY OF LAKE OSWEGO: 1

MATERIAL & INSTALLATION SUMMARY

DESCRIPTION UOM TOTALS

MATERIAL RAKE OFF:

AERIAL QUANTITY:

UNDERGROUND QUANTITY:

2” SCH40 PVC OR SDR11 HDPE CONDUIT:	FT	4030
TWO–WAY 18/14MM MICRO CONDUIT W/ RIPCORD AND #14 LOCATE WIRE:	FT	4264
24X36X36 OPEN BOTTOM HAND HOLE:	EA	23
#12 AWG LOCATE WIRE:	FT	4385
LOCATE WIRE TEST STATION:	EA	9
5/8’ X 5’ GROUND ROD:	EA	9

INTERIOR QUANTITY:

1–1/4” RISER FLEX CONDUIT:	FT	12
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FIBER QUANTITY:

144 CT MICRO FIBER OPTIC CABLE:	FT	4264
144 CT MICRO FIBER OPTIC CABLE SLACK:	FT	600
24 CT DIELECTRIC FIBER OPTIC CABLE:	FT	4422
24 CT DIELECTRIC FIBER OPTIC CABLE SLACK:	FT	730

INSTALLATION RAKE OFF:

AERIAL QUANTITY:

UNDERGROUND QUANTITY:


PLACE ONE(1) NEW 2” SCH40 PVC OR SDR11 HDPE CONDUIT:	FT	4030
PLACE ONE(1) NEW TWO–WAY 18/14MM MICRO CONDUIT IN EXISTING CONDUIT:	FT	4264
PLACE NEW 24X36X36 OPEN BOTTOM HAND HOLE:	EA	24
PLACE NEW #12 AWG LOCATE WIRE (AS–REQUIRED):	FT	4410
PLACE NEW LOCATE WIRE TEST STATION (AS–REQUIRED):	EA	10
PLACE NEW 5/8’ X 5’ GROUND ROD (AS–REQUIRED):	EA	10

INTERIOR QUANTITY:

FIBER QUANTITY:

PLACE NEW CABLE THROUGH VACANT MICRO CONDUIT:	FT	4264
PULL NEW CABLE THROUGH EXISTING CONDUIT:	FT	380
PULL NEW CABLE THROUGH NEW CONDUIT:	FT	4042

*** NOTE:
FOOTAGES SHOWN ARE MEASURED IN LINEAR FEET.
TO ACOMMODATE FOR SAG DISTANCE FROM POLE TO POLE,
ADD 2% TO TOTAL CABLE & STRAND.



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CHECKED BY: J. GREENWOOD DRAWN BY: T. BRADLEY

REVISIONS				
REV	DESCRIPTION	DATE	BY	APP

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LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 8 - OAK CREEK ELEMENTARY SCHOOL
JOB SCOPE - MATERIAL RAKE-OFF

CITY: LAKE OSWEGO – TOWNSHIP 02 SOUTH RANGE 01 EAST SECTION: 6,7,8			COUNTY: CLACKAMAS CO., OREGON	
PLOT DATE: 3/17/2017	SCALE: AS SHOWN	PROJECT NAME–FILENAME.DWG – TAB_SHEET # LAKE0–S8–CS00.DWG – CS02_1.1	SHEET	1.1

SPECIFICATION SET

SURFACE FEATURES / AERIAL UTILITIES - LINETYPES & SYMBOLS

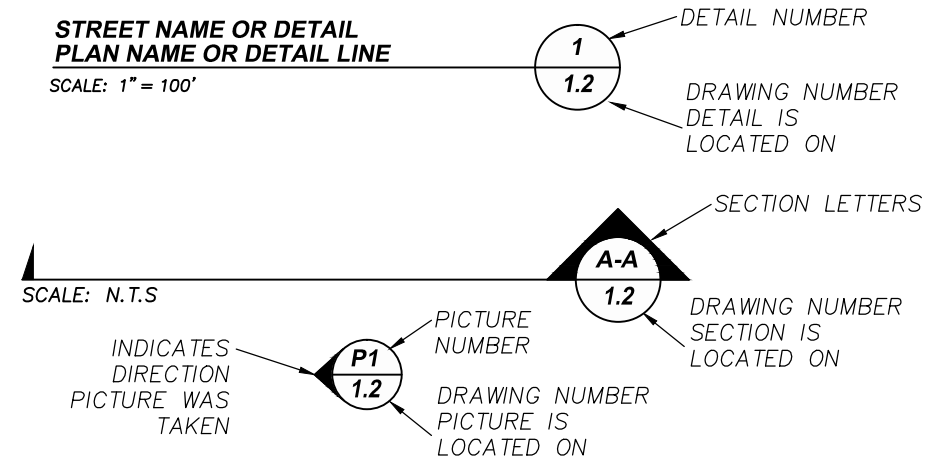
EXISTING	PROPOSED
<div>DESIGN</div> <div><div>CABLE</div><div>STRAND</div><div>CONDUIT</div><div>PLENUM / RISER RATED FLEX CONDUIT (AS SPECIFIED)</div></div>	<div>DESIGN</div> <div><div>CABLE</div><div>STRAND</div><div>CONDUIT</div><div>PLENUM / RISER RATED FLEX CONDUIT (AS SPECIFIED)</div></div>
<div>COMMUNICATIONS</div> <div>(OWNERS SPECIFIED ON PLANS)</div> <div>CATV CATV</div> <div>T TELEPHONE</div> <div>FO FIBER OPTIC</div>	
<div>POWER/ELECTRICAL</div> <div>(OWNERS SPECIFIED ON PLANS)</div> <div>P PRIMARY</div> <div>SL STREET LIGHT</div> <div>TS TRAFFIC SIGNAL</div>	
<div>OTHER UTILITIES</div> <div>G GAS</div> <div>SS SANITARY</div> <div>ST STORM</div> <div>W WATER</div>	
<div>TOPO FEATURES</div> <div>BOW BACK OF WALK/SIDEWALK</div> <div><div>BUILDING FOOTPRINT</div></div> <div>CULVERT</div> <div>CURB CURB</div> <div>EOC EDGE OF CONCRETE</div> <div>EOG EDGE OF GRAVEL</div> <div>EOP EDGE OF PAVEMENT</div> <div>DWY DRIVEWAY</div> <div>TOB TOP OF BANK</div> <div>FENCE STRIPING</div> <div>R/R TRACKS</div> <div>C/L RIGHT-OF-WAY CENTERLINE</div> <div>R/W RIGHT-OF-WAY</div> <div>P/L PROPERTY LINE</div> <div>EASEMENT</div> <div>WALL</div> <div>VEGETATION LINE</div>	<div>POLE TO POLE GUY</div> <div>CENTERLINE</div>

ABBREVIATIONS

E/W EQUIPPED WITH	N NORTH	AB ABANDONED	FS FIELD SIDE	RPL REPLACE
D/W DRIVEWAY	S SOUTH	BOC BACK OF CURB	FOC FACE OF CURB	SCA SIDE CABLE ARM
O/S OFFSET	E EAST	BOW BACK OF SIDEWALK	GRC GALVANIZED RIGID CONDUIT	SLP STREET LIGHT PROTECTED
R/W RIGHT OF WAY	W WEST	BP BORE PIT	HT HEIGHT	SLU STREET LIGHT UNPROTECTED
S/W SIDEWALK		DG DOWNGUY	HDG HOT DIPPED GALVANIZED	SL STREET LIGHT
N/O NORTH OF		FC FIBERGLASS CONDUIT	ID INNERDUCT	CATV CABLE TELEVISION
S/O SOUTH OF		FGA FIBERGLASS ARM	MGN MULTI-GROUNDED NEUTRAL	TEL TELEPHONE
E/O EAST OF		DOC DEPTH OF COVER	MIN MINIMUM	VGR VERTICAL GROUND ROD
W/O WEST OF		FDC FIBER DUCT IN CONCRETE	OD OUTSIDE DIAMETER	WT WEIGHT
		FO FIBER OPTIC	PL PLACE	W-W WALL TO WALL FOOTAGE
		NT NO TAG	PWR POWER	P-W POLE TO WALL FOOTAGE
		NV NOT VISIBLE	PUE PUBLIC UTILITY EASEMENT	BE BUILDING ENTRY
		BT BLANK TAG		

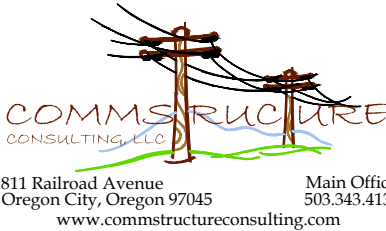
EXISTING	PROPOSED
<div>UTILITY POLE</div>	<div>UTILITY POLE</div>
<div>SPLICE</div>	<div>SPLICE</div>
<div>MID-SHEATH SPLICE</div>	<div>MID-SHEATH SPLICE</div>
<div>VAULT/BUILDING STORAGE</div>	<div>VAULT/BUILDING STORAGE</div>
<div>FIBER SYMBOL</div>	<div>FIBER SYMBOL</div>
<div>FT AERIAL STORAGE</div>	<div>FT AERIAL STORAGE</div>
<div>POWER ANCHOR & GUY</div>	<div>ANCHOR & GUY</div>
<div>POWER S/W ANCHOR & GUY</div>	<div>DOWNGUY TO EXISTING ANCHOR</div>
<div>COMM ANCHOR & GUY</div>	<div>S/W ANCHOR & GUY</div>
<div>COMM S/W ANCHOR & GUY</div>	<div>DOWNGUY TO EXISTING S/W ANCHOR</div>
<div>VGR GROUND</div>	<div>VGR GROUND</div>
<div>INTERIOR BOND</div>	<div>INTERIOR BOND</div>

DETAILS AND SECTIONS CALLOUT SYMBOLOGY



EXISTING	PROPOSED
<div>TELECOMM</div> <div>CABLE MARKER</div> <div>CABLE MARKER E/W GROUND LUGS</div> <div>LOCATE TERMINAL ACCESS POINT</div> <div>GROUND ROD</div> <div>CATV RISER</div> <div>TELECOMM MANHOLE</div>	<div>CABLE MARKER</div> <div>CABLE MARKER E/W GROUND LUGS</div> <div>LOCATE TERMINAL ACCESS POINT</div> <div>GROUND ROD</div> <div>SIGNAL CONTROLLER</div>
<div>POWER</div> <div>POWER TRANSFORMER</div> <div>POWER METER</div>	
<div>TRAFFIC</div> <div>CROSS WALK SIGNAL</div> <div>R/R CROSSING SIGNAL</div> <div>JUNCTION BOX</div> <div>TRAFFIC SIGNAL POLE</div> <div>SIGNAL CONTROLLER</div> <div>RAILROAD ARM</div> <div>SIGN</div>	
<div>STORM</div> <div>AREA DRAIN</div> <div>CATCH BASIN</div> <div>STORM SEWER</div>	
<div>WATER</div> <div>BLOW OFF</div> <div>FIRE CONNECTION</div> <div>FIRE HYDRANT</div> <div>IRRIGATION METER</div> <div>IRRIGATION VALVE</div> <div>WATER METER</div> <div>WATER VALVE</div> <div>WATER VAULT</div>	
<div>TOPO</div> <div>BOLLARD</div> <div>GAS VALVE</div> <div>GAS METER</div> <div>LUMINAIRE</div> <div>MAILBOX</div> <div>PROPERTY CORNER</div> <div>MONUMENT SURVEY</div> <div>PARKING METER</div> <div>SANITARY SEWER</div> <div>STEEL PILING</div> <div>TREE</div>	

45'/4/D(T)=POLE HT/CLASS/DISTRIBUTION(TRANSMISSION)
P.O.A.=_____ <-PROPOSED POINT OF ATTACHMENT



DESIGNED BY: CCLLC
CHECKED BY: CCLLC DRAWN BY: CCLLC

REVISIONS				
REV	DESCRIPTION	DATE	BY	APP

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CLACKAMAS BROADBAND EXPRESS
STANDARD PLANS FOR CONSTRUCTION
LEGEND

CITY: CITY – TOWNSHIP RANGE SECTION:				COUNTY: COUNTY CO., STATE	
PLOT DATE: 12/06/2016	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG – TAB_SHEET # CBX-DT00.DWG – LG01_1.2		SHEET	1.2

SPECIFICATION SET

SITE CONDITIONS:

THE LOCATIONS OF EXISTING UTILITIES SHOWN IN THIS PLAN ARE APPROXIMATE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES. UTILITIES MAY EXIST IN THE AREA IN ADDITION TO THOSE SHOWN ON THE PLAN. THE CONTRACTOR SHALL CONTACT PROPERTY OWNERS WHEN WORKING WITHIN PRIVATE EASEMENTS FOR LOCATION OF UNDERGROUND TANKS, PIPELINES, DRAIN TILES, OR OTHER BURIED IMPROVEMENTS. THE CONTRACTOR SHALL ALSO NOTIFY THE UTILITY NOTIFICATION CENTER PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITIES.

THE CONTRACTOR MUST ASSUME ALL BURIED UTILITIES ENCOUNTERED ARE LIVE AND ACTIVE UNLESS SPECIFICALLY INSTRUCTED OTHERWISE BY THE OWNERS OR OPERATORS OF SAID UTILITIES. REPAIR OF ANY DAMAGED CONDUIT CONTAINING CABLE SHALL BE MADE BY USE OF PVC SPLIT DUCT OR MATCH EXISTING. DAMAGE TO SUB-SURFACE STRUCTURES IS THE SOLE RESPONSIBILITY OF THE PLACING CONTRACTOR.

THE CONTRACTOR SHALL PROTECT THE EXISTING TRAFFIC CONTROL LOOPS. IF EXISTING TRAFFIC CONTROL LOOPS ARE DAMAGED DURING CONSTRUCTION, THE ENTIRE LOOP WIRE FROM TERMINAL TO TERMINAL SHALL BE REPLACED IN ACCORDANCE WITH GOVERNING AGENCY STANDARDS AND REGULATIONS AT CONTRACTOR'S EXPENSE.

REMOVAL OF EXISTING ASPHALT PAVEMENT, CONCRETE CURBS, AND CONCRETE SIDEWALKS WILL BE "NEAT LINE" WITH SAW OR PAVEMENT CUTTER, PER REQUIREMENTS AND SPECIFICATIONS OF THE AGENCY OR DEPARTMENT RESPONSIBLE FOR EACH LOCATION. IF CONCRETE PAVEMENT IS ENCOUNTERED WHILE EXCAVATING CONDUIT TRENCHES, THE CONCRETE REMOVAL WILL BE "NEAT LINE" WITH A PAVEMENT SAW.

IF CONCRETE CURB RETURNS AND/OR SIDEWALKS ARE REPLACED DUE TO CONDUIT OR MANHOLE INSTALLATION, THE CONTRACTOR SHALL PLACE APPROVED HANDICAPPED SIDEWALK AND CURB ACCESS RAMPS IN CONFORMANCE WITH STATE STATUTES.

ALL MATERIALS NECESSARY FOR THE REPAIR OF STREETS, CURBS, SIDEWALKS, SANITARY SEWERS, STORM SEWERS, AND PUBLIC SERVICE UTILITIES, AND THE INSTALLATION OF SUCH MATERIALS SHALL BE IN CONFORMANCE WITH THE REQUIREMENTS AND SPECIFICATIONS OF THE AGENCY OR DEPARTMENT RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE REPAIRED FACILITY.

ALL OPEN TRENCH WILL BE CLEARLY MARKED WITH BARRICADES OR CONES. STEEL PLATES OR OTHER TYPES OF BRIDGING SHALL BE PROVIDED TO COVER OPEN TRENCH IN THE TRAVEL PORTION OF THE STREETS. THESE PLATES OR BRIDGING SHALL BE ADEQUATE TO SUPPORT THE NORMAL VEHICLE LOADS ANTICIPATED IN THIS AREA AND SHALL BE IN PLACE DURING ALL NON-WORKING AREAS.

ALL SURFACES TO BE RESTORED TO ORIGINAL CONDITION, AND BACKFILL TO BE COMPACTED AS SPECIFIED. TRENCH EXCAVATION IN SURFACES WHICH INCLUDE CONCRETE TREATED BASE SHALL FOLLOW LOCAL AREA SPECIFICATIONS.

ALL WORK SHALL CONFORM TO THE SPECIFICATIONS OF THE JURISDICTIONAL PERMIT AGENCY.

TEMPORARY BACKFILL:

THE CONTRACTOR SHALL BE REQUIRED TO MAINTAIN NORMAL TRAFFIC MOVEMENT DURING NON-WORK PERIODS FOR ALL CONSTRUCTION ACTIVITY WITHIN THE LIMITS OF CITY STREETS BY THE USE OF STEEL PLATES (DESIGNED FOR H-20 LOADING) OR BACKFILLING THE TRENCH. IF THE CONTRACTOR ELECTS TO BACKFILL THE TRENCH HE SHALL "CAP" THE TRENCH WITH A 2"(COMPACTED MINIMUM) DEPTH OF CLASS "C" ASPHALTIC CONCRETE COLD MIX. IF THE CONTRACTOR ELECTS TO PLATE THE TRENCH THE PLATES SHALL BE PINNED AT EACH CORNER AND THE EDGES SHALL BE "RAMPED" WITH CLASS "C" ASPHALTIC CONCRETE COLD MIX TO PREVENT "WHEEL SHOCK" ON IMPACT. COLD MIX SHALL BE COMPACTED AND SMOOTH IN EITHER TYPE OF INSTALLATION. TO PREVENT SKIDDING, TRAFFIC PLATES SHALL BE TREATED WITH WELD BEADS TO PROVIDE TRACTION. WELD BEADS SHALL BE LOCATED 4" ON CENTER AND EXTEND THROUGH THE TRAVEL PORTIONS OF THE PLATES. USE OF STEEL PLATES IN THE ROW TO BE APPROVED BY THE GOVERNING PERMIT AGENCY.

BACKFILL:

BACKFILL OF CONDUIT TRENCH OR MANHOLE EXCAVATION SHALL BE 3/4" – 0 CRUSHED ROCK PLACED IN 6" LIFTS AND COMPACTED WITH MECHANICAL VIBRATING TYPE COMPACTION EQUIPMENT TO 95% OF MAXIMUM DRY DENSITY (ASTM D-1550 OR AASHTO T-180) UNDER ALL PAVED SURFACES UNLESS OTHERWISE SPECIFIED.

BACKFILL OF CONDUIT TRENCH OR MANHOLE EXCAVATION IN NON-PAVED AREAS SHALL BE CLEAN SAND OR SILTY LOAM SOILS PLACED IN 1'-0" LIFTS COMPACTED BY MECHANICAL VIBRATING TYPE COMPACTION EQUIPMENT TO 95% OF MAXIMUM DRY DENSITY (ASTM D698 OR AASHTO T-99) UNLESS OTHERWISE SPECIFIED.

BACKFILL AROUND ALL VAULTS SHOULD CONSIST OF COMPACTED SELECT BACKFILL MATERIAL OR IN ACCORDANCE WITH AGENCY SPECIFIED BACKFILL. IN NO CASE SHALL THE MATERIAL BE SATURATED OR CONTAIN LARGE ROCKS OR CHUNKS. NO VOIDS SHALL REMAIN BETWEEN THE VAULT WALLS AND THE NATIVE SOIL. BACKFILL AROUND VAULTS SHALL NOT BE PLACED UNTIL THE ENTIRE VAULT STRUCTURE IS IN PLACE INCLUDING ALL LIDS AND RISERS, BEING SURE TO COMPACT FILL MATERIAL FROM BOTTOM TO TOP SURFACE.

SAND MAY BE WATER SETTLED IF THAT TYPE OF COMPACTION IS ALLOWED BY THE PERMITTING AGENCY IN EITHER PAVED OR NON-PAVED SITUATIONS. THE CONTRACTOR SHALL VERIFY THE TYPE OF COMPACTION ALLOWED PRIOR TO BEGINNING ANY BACKFILL ACTIVITY.

BACKFILL SHALL BE PLACED IN ACCORDANCE WITH THE SPECIFICATIONS AND REGULATIONS OF THE JURISDICTIONAL PERMIT AGENCY.

HAZARDOUS MATERIALS:

THE CONTRACTOR SHALL NOTIFY THE JURISDICTIONAL PERMIT AGENCY IMMEDIATELY IF ANY MATERIALS ARE ENCOUNTERED THAT MAY BE CONSIDERED HAZARDOUS BY THE EPA, DEQ, OR OSHA. IF POTENTIALLY HAZARDOUS MATERIALS ARE ENCOUNTERED THE CONTRACTOR SHALL SECURE THE SITE AND PREVENT ACCIDENTAL EXPOSURE TO THE PUBLIC OR THE CONTRACTOR'S PERSONNEL.

THE CONTRACTOR MAY EXCAVATE UP TO, BUT SHALL NOT DISTURB KNOWN HAZARDOUS MATERIALS SUCH AS ASBESTOS, OILS, ACID, ETC. THE REMOVAL OF ALL HAZARDOUS MATERIALS MUST BE DONE BY A LICENSED HAZARDOUS MATERIALS CONTRACTOR AND IN ACCORDANCE WITH JURISDICTIONAL AGENCY REQUIREMENTS.

LANDSCAPING:

TREE AND PLANT PROTECTION TO CONFORM WITH THE AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) SECTION A300 PART 1 –10 AS APPLICABLE. ANY DEVIATION FROM INDUSTRY APPROVED TREE AND PLANT CARE TO BE CLEARED WITH THE GOVERNING PERMIT AGENCY REPRESENTATIVE AND OR ADJOINING PROPERTY OWNER PRIOR TO ANY PRUNING OR EXCAVATION.

AT NO POINT IN TIME SHALL THE CONTRACTOR REMOVE ANY TREES OR SHRUBS WITH OUT PREVIOUS AUTHORITY FROM THE GOVERNING PERMIT AGENCY.

EXCAVATION IN LAWN AREAS SHALL BE "NEAT LINED" WITH A SOD CUTTER TO ENSURE A SMOOTH MATCH LINE FOR REPAIR WITH APPROVED SOD.

ALL LAWN RESTORATION SHALL BE DONE BY USING SOD PLACED TO THE GROWER/SUPPLIERS SPECIFICATIONS AND ADJACENT PROPERTY OWNER'S SPECIFICATIONS.

SOD USED TO REPAIR EXISTING LAWN AREA SHALL BE OF A BLEND THAT WILL MATCH THE ADJACENT UNDISTURBED LAWN AREA FOR BOTH COLOR AND TEXTURE.

PRIVATE IRRIGATION SYSTEMS ARE OCCASIONALLY LOCATED WITHIN THE PUBLIC RIGHT-OF-WAY OF ADJACENT STREET AREAS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR OPERATION AND REPAIR IF DAMAGE OCCURS DURING HIS CONSTRUCTION ACTIVITY. PRIVATE IRRIGATION SYSTEMS LOCATED ON PRIVATE PROPERTY DAMAGED BY CONSTRUCTION ACTIVITY SHALL BE REPAIRED IMMEDIATELY TO THE OWNER'S SATISFACTION AT NO COST TO THE OWNER.

IN DEVELOPED (PROFESSIONALLY) LANDSCAPED AREAS, NO WORK SHALL BE DONE WITHOUT THE OWNER'S WRITTEN PERMISSION OR AUTHORIZATION.

STRUCTURE PROTECTION:

VAULTS AND CONDUIT TO BE PLACED ADJACENT TO EXISTING STRUCTURES SUCH AS BRIDGE FOOTINGS, PIERS, BUILDING FOUNDATIONS, WALLS, POWER AND TELEPHONE POLES, AND OTHER UTILITIES SHALL MAINTAIN A MINIMUM CLEARANCE AS SHOWN. THE CONTRACTOR SHALL NOT UNDERMINE ANY ADJACENT STRUCTURE WITHOUT SPECIFIC WRITTEN PERMISSION FROM THE OWNER/OPERATOR OF SUCH STRUCTURE.

EXISTING UTILITIES EXPOSED DURING EXCAVATION SHALL BE 100% SUPPORTED BY BOTH TRENCH BRIDGING AND SUSPENSION OR BY THE USE OF LONGITUDINAL TRAYS OR PLATFORMS VERTICALLY SUPPORTED BY ADJUSTABLE BUILDING JACKS.

EXISTING SPLICE CASES AND CABLES SHALL BE SUPPORTED AT A MAXIMUM SPACING OF 4.0 FEET AND SHALL CONSIST OF A CANVAS SLING WITH NYLON BELTING OR ROPE. ALL CABLE SUPPORTS SHALL BE PLACED IN A MANNER THAT PREVENTS KINKS OR OTHER DAMAGE TO THE CABLE SHEATH.

AN ACCEPTABLE ALTERNATIVE TO CABLE SLINGS WOULD BE THE UTILIZATION OF A WIDE FLANGE "I" BEAM OR CHANNEL AS A "CABLE TRAY" WITH THE CABLES/CASES BANDED IN PLACE.

SHORING:

THE CONTRACTOR SHALL PROVIDE SHORING FOR CONDUIT TRENCH EXCAVATION 42" OR MORE IN DEPTH AS MEASURED FROM THE HIGH SIDE OF THE TRENCH AND FOR ALL MANHOLE EXCAVATION.

MANHOLE SHORING SHALL BE TIGHT-SHEETED.

ALL SHORING SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE JURISDICTIONAL PERMIT AGENCY AND THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).

SHORING SHALL BE DESIGNED TO MEET H-20 HIGHWAY LOADING CRITERIA.

THE CONTRACTOR SHALL PROVIDE ALL SHORING AND DESIGN CALCULATIONS TO THE PERMIT ISSUING AGENCY PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITY.

EXISTING UTILITY SERVICES:

ANY UTILITY DAMAGED BY CONSTRUCTION ACTIVITY SHALL BE RETURNED TO FULL SERVICE IMMEDIATELY AND ANY COST OR EXPENSE CONSIDERED TO BE LOST BY THE UTILITY USER SHALL BE THE CONTRACTOR'S RESPONSIBILITY. IN THE EVENT OF ANY DAMAGE TO AN EXISTING UTILITY THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY OWNER AND THE PROJECT MANAGER.

LANDSCAPE AREAS SERVED BY IRRIGATION SYSTEMS SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION BY THE UTILIZATION OF TEMPORARY SOURCES OF IRRIGATION WATER OR BY MAKING TEMPORARY REPAIRS TO THE DAMAGED SYSTEM TO ALLOW ITS SATISFACTORY OPERATION.

SPECIAL UTILITY CLEARANCES:

ALL WORK CONDUCTED ADJACENT TO WATER MAINS, STORM SEWERS, OR SANITARY SEWERS SHALL CONFORM TO THE FOLLOWING CONDITIONS, UNLESS OTHERWISE SPECIFIED BY THE GOVERNING PERMIT AGENCY:

- A. PARALLEL CONDUIT SHALL MAINTAIN A HORIZONTAL SEPARATION OF 5.0 FEET, MEASURED SURFACE TO SURFACE. (OUTSIDE EDGE TO OUTSIDE EDGE)
- B. PERPENDICULAR CONDUIT PASSING UNDER OR OVER UTILITIES MUST MAINTAIN 12" VERTICAL CLEAR SEPARATION.
- C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING THIS REQUIRED VERTICAL SEPARATION BY EITHER EXPOSING THE UTILITY EVERY 100 FEET IN THOSE AREAS WHERE HORIZONTAL SEPARATION IS LESS THAN 5.0 FEET OR BY UTILIZING KNOWN DEPTHS OF ADJACENT FACILITIES. IF THE CONTRACTOR UTILIZES THE ADJACENT FACILITIES TO DETERMINE DEPTH, HE SHALL CONTACT THE GOVERNING AGENCY AT EACH SUCH LOCATION AND THE AGENCY WILL DETERMINE THE NECESSARY DEPTH OF THE TOP OF THE CONDUIT AT THAT POINT.
- D. THE VERTICAL AND HORIZONTAL SEPARATION SHALL BE MAINTAINED AT ALL TIMES UNLESS SPECIFICALLY STATED OTHERWISE BY THE JURISDICTIONAL PERMIT AGENCY. ANY SPECIFIC DEVIATION IN VERTICAL AND HORIZONTAL SEPARATION FROM THOSE DESCRIBED SHALL BE REPORTED TO THE OWNER BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING VERTICAL AND HORIZONTAL SEPARATION AT ALL TIMES AND SHALL BE RESPONSIBLE FOR ANY AND ALL ENCROACHMENTS.

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CLACKAMAS BROADBAND EXPRESS
STANDARD PLANS FOR CONSTRUCTION
GENERAL NOTES

CITY: CITY – TOWNSHIP RANGE SECTION:			COUNTY: COUNTY CO., STATE
PLOT DATE: 12/06/2016	SCALE: AS SHOWN	PROJECT NAME--FILENAME.DWG – TAB_SHEET # CBX-DT00.DWG – GN01_1.3	SHEET 1.3

SPECIFICATION SET

PROTECTION OF EXISTING SURVEY MONUMENTS:

THE CONTRACTOR SHALL REPLACE ALL MONUMENTS THAT DEFINE PROPERTY OWNERSHIP SUCH AS IRON RODS, IRON PIPES, BRASS SCREWS, AND REFERENCE POINTS AS REQUIRED BY THE GOVERNING STATE STATUTES. ANY CORNER OR REFERENCE TO A CORNER OF A RECORD OF SURVEY SHALL BE REPLACED BY A LICENSED SURVEYOR WITHIN 90 DAYS OF ITS REMOVAL.

REPLACEMENT MONUMENTS SHALL CONFORM TO STATE STATUTES AS TO TYPE AND STYLE OF IDENTIFICATION WITH THE NECESSARY RECORD OF SURVEY IDENTIFYING WHAT WAS FOUND ORIGINALLY AND WHAT WAS SET AND THE DATE THE REPLACEMENT WAS SET. THE RECORD OF SURVEY SHALL BE COMPLETED IN CONFORMANCE WITH THE REGULATIONS OF THE RELEVANT STATE AND THE JURISDICTIONAL PERMIT AGENCY SURVEYOR.

IT IS THE CONTRACTORS RESPONSIBILITY TO UNDERSTAND AND COMPLY WITH THE JURISDICTIONAL STATUTES SET FORTH BY THE RELEVANT GOVERNING AGENCY.

CONSTRUCTION STAKING:

IN AREAS WHERE THE CONDUIT ALIGNMENT IS NOT CLEARLY DEFINED BY CURB LINES, FENCE LINES, OR OTHER EVIDENCE OF THE RIGHT-OF-WAY, IT IS RECOMMENDED THAT THE CONTRACTOR COORDINATE WITH A PROFESSIONAL SURVEYOR TO PROVIDE STAKING OR PAINT MARKS TO CLEARLY IDENTIFY THE PROPOSED ALIGNMENT.

IF ADDITIONAL FIELD STAKING OF PROPOSED CONDUIT ALIGNMENTS AND VAULT LOCATIONS IS REQUIRED, THE CONTRACTOR IS TO CONTACT THE INSPECTOR AND THE PROJECT DESIGNER TO SCHEDULE A FIELD MEET PRIOR TO CONSTRUCTION.

IF DISCREPANCIES BETWEEN PROFESSIONALLY SURVEYED RIGHT-OF-WAY AND THE PROPOSED ALIGNMENT ARE IDENTIFIED CONTRACTOR IS TO NOTIFY THE REGULATORY PERMIT AGENCY INSPECTOR AND THE PROJECT DESIGNER PRIOR TO CONSTRUCTION.

TRAFFIC CONTROL:

WORK ON ANY PUBLIC OR PRIVATE ROW WITH OR WITHOUT PERMIT THROUGH THE GOVERNING AGENCY MAY REQUIRE ADEQUATE TRAFFIC CONTROL TO PERFORM CONSTRUCTION ACTIVITIES.

TRAFFIC WARNING DEVICES AND SIGNS SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS (U.S. GOVERNMENT PRINTING OFFICE) AND TO THE GOVERNING AGENCY STANDARD SPECIFICATIONS. HIGH LEVEL WARNING TYPE DEVICES ARE TO BE USED AT ALL TIMES AND SPECIAL WARNING DEVICES MAY BE STIPULATED BY THE JURISDICTIONAL PERMIT AGENCY AT ANY TIME THE USE WILL ADD TO THE SAFETY AND PROTECTION OF TRAFFIC OR PEDESTRIANS IN THE CONSTRUCTION AREA.

A TRAFFIC CONTROL PLAN SHALL BE PREPARED BY THE CONTRACTOR AS REQUIRED AND SUBMITTED TO EACH PERMITTING AGENCY REQUESTING SUCH PLAN FOR REVIEW AND APPROVAL OR REVISION PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITY FOR THIS PROJECT. THE APPROVED PLAN SHALL BE SUBMITTED TO THE AGENCY AND A COPY OF THE PLAN SHALL BE KEPT AT THE CONSTRUCTION SITE AND MUST BE READILY AVAILABLE FOR REVIEW BY AGENCY REPRESENTATIVES.

PERMITS – FRANCHISES – EASEMENTS:

PHYSICAL WORK SHALL NOT BE STARTED UNTIL THE GOVERNING AGENCY INSPECTOR AND THE CONTRACTOR ARE IN POSSESSION OF AND HAVE CAREFULLY REVIEWED AND FULLY UNDERSTAND ALL CONDITIONS AND SPECIFICATIONS SET FORTH IN THE REQUIRED PERMITS, FRANCHISES, AND/OR EASEMENTS.

THE PLACING FOREMAN SHALL HAVE A COPY OF THE PERMITS/EASEMENTS ON SITE AT ALL TIMES.

ANY CONFLICT BETWEEN WORK PRINT SPECIFICATIONS AND SPECIFICATIONS SET FORTH UNDER RELATED PERMITS, FRANCHISES, AND/OR EASEMENTS MUST BE CLEARED BY PROPER COMPANY AUTHORITY BEFORE PROGRESSING WITH WORK INVOLVED.

AERIAL NOTES:

ALL AERIAL CONSTRUCTION IS TO BE PERFORMED TO INDUSTRY ACCEPTABLE STANDARDS.

ALL NEW OR EXISTING CABLE HEIGHTS OF ATTACHMENT TO BE DOCUMENTED AT TIME OF CONSTRUCTION.

6.6M STRAND TO BE USED WITH STANDARD 5/8"POLE LINE HARDWARE UNLESS OTHERWISE SPECIFIED. BOND STRAND TO POWER MGN WHERE APPLICABLE.

ALL EXTENSION ARMS TO BE PLACED WILL BE EPOXY ARMS UNLESS OTHERWISE NOTED OR APPROVED BY THE INSPECTOR.

PUPI ARMS TO BE TYPE TB2000 UNLESS OTHERWISE SPECIFIED AND ARE TO BE INSTALLED ACCORDING TO THE POLE OWNER SPECIFICATIONS OR MANUFACTURER SPECIFICATIONS. POLE OWNER SPECIFICATIONS MAY SUPERSEDE MANUFACTURER SPECIFICATION FOR INSTALLATION AS REQUIRED. TYPICAL INSTALLATION INCLUDES UTILIZING TWO (2) THROUGH BOLTS AND NO LAG BOLTS.

ALL ANCHORS TO BE USED WILL BE 3/4 SCREW IN TYPE.

ALL STRAPS WILL BE PLACED 4" BEFORE AND AFTER EVERY SUPPORTING CLAMP AT A MINIMUM OF 21" APART. REPAIR / REPLACE EXISTING LASHING WIRE IF DAMAGED, AND ADD ANY MISSING GROUNDS.

CONTRACTOR TO PLUG ALL VACATED HOLES FROM ABANDONED OR RELOCATED ATTACHMENTS PER POLE OWNER SPECIFICATIONS.

IT IS THE CONTRACTORS RESPONSIBILITY TO MAINTAIN AND FOLLOW NATIONAL ELECTRIC SAFETY CODE ALONG WITH APPLICABLE LOCAL AND REGIONAL GOVERNING AUTHORITIES. ANY DISCREPANCIES BETWEEN THESE AUTHORITIES AND OR THE CONSTRUCTION PRINTS IS TO BE VALIDATED WITH THE DESIGNER OR OWNER PRIOR TO CONSTRUCTION.

CONDUITS:

ALL DIRECT BURIED CONDUIT SHALL BE PVC HEAVY WALL (SCH 40) OR HDPE SDR11 DIRECT BURIAL UNLESS OTHERWISE SPECIFIED.

CONTRACTOR SUPPLIED MATERIALS SHALL CONFORM TO THE JURISDICTIONAL PERMIT AGENCY AND OWNER SPECIFICATIONS.

ALL CONTRACTOR SUPPLIED MATERIALS SHALL INCLUDE A CERTIFIED TEST REPORT CLEARLY STATING THAT THOSE SUPPLIED MATERIALS COMPLY WITH ANY SUCH SPECIFICATION.

ALL CONDUIT IS TO BE PLACED IN THE LOCATION SHOWN ON THE DESIGN PRINTS WITH MINIMUM COVER OF 36 INCHES OR AS NOTED ON THE DRAWINGS OR SPECIFIED BY THE REGULATORY PERMIT AGENCY.

THE TOTAL LENGTH OF TRENCH OPEN AT ANY ONE TIME IS TO BE KEPT TO A MINIMUM.

ALL HDPE CONDUITS ENTERING VAULTS SHALL HAVE A MINIMUM 5.0 FOOT STRAIGHT SECTION OF SCH 40 PVC CONDUIT SLEEVE. THIS STRAIGHT SECTION SHALL BE PERPENDICULAR TO THE WALL OF SAID MANHOLE AND SHALL BE SMOOTH AND FREE OF ALL BURRS AND OTHER FEATURES THAT MAY DAMAGE CABLES. PLUGS SHALL BE UTILIZED TO ORGANIZE, SECURE AND SEAL THE HDPE CONDUITS WITHIN THE SLEEVE AS THEY ENTER THE VAULT.

ALL PVC OR HDPE CONDUITS ARE TO BE PLUGGED WITH COMPRESSION STYLE PLUGS. ANY CONDUITS CONTAINING FIBER CABLES WILL REQUIRE SIMPLEX COMPRESSION PLUGS SEALING THE CONDUIT AROUND THE CABLE.

CASINGS:

ANY REQUIRED STEEL CASING PIPE SHALL BE 100% FILET WELD (3/16") OR THREADED COUPLING. IF WELDED THE CONTRACTOR SHALL PROVE THE INTERIOR DIMENSION BY PULLING A MANDREL COMPLETELY THROUGH THE WELDED JOINT IN BOTH DIRECTIONS. PIPE JOINTS SHALL BE STEEL BRUSHED AND PAINTED WITH A ZINC RICH FLAT BLACK METAL PRIMER PAINT.

VAULTS / HANDHOLES:

ALL VAULTS TO BE UTILITY VAULT PRECAST TYPE 444--LA UNLESS OTHERWISE SPECIFIED. 444--LA VAULTS ARE TO BE FULLY EQUIPPED WITH LADDERS, CABLE RACKS, SUPPORTS, AND PULLING IRONS AS SHOWN BELOW:

(4) "L" BRACKETS
(4) 8 HOLE – 113/4" CUT RACKS
(4) SPRING NUT & SCREWS – (1/2" NUT, 1/2" X 1 1/4" PLATED CAP SCREW)

MOUNT BRACKETS ON 2' GALVANIZED "C" CHANNELS, 2 EA. SIDE, 18" APART

ALL VAULTS SHALL HAVE A SUMP CAST IN PLACE FOR DE--WATERING

GROUND COVER OVER ALL VAULTS SHOULD BE 36" MINIMUM DEPTH BELOW FINISHED STREET OR SIDEWALK ELEVATION UNLESS OTHERWISE SPECIFIED IN THE VAULT DETAILS OR ON ANY RIGHT-OF-WAY PERMIT ISSUED. IN ADDITION, DEPTH OF COVER OVER MANHOLES SHALL NOT EXCEED 60" OF COVER TO THE TOP OF THE VAULT OR PER VAULT MANUFACTURER'S SPECIFICATIONS.

EXCAVATION OVER VAULTS IS CONSIDERED PART OF THE TOTAL VAULT INSTALLATION.

IF ANY FIELD SLOTTING OF PRECAST CONCRETE VAULTS IS REQUIRED TO PROVIDE ACCESS FOR CABLES AND CONDUIT NOT PROVIDED WITH A BLOCKOUT FOR THAT PURPOSE; THE FIELD SLOT SHALL BE REPAIRED BY SPLICING ANY REINFORCING REBAR THAT HAS BEEN CUT TO ALLOW CABLE ENTRY AND SHALL BE SEALED WITH NON--SHRINK CONCRETE GROUT. THE CONTRACTOR SHALL NOTIFY OWNER IMMEDIATELY IF IT BECOMES EVIDENT FIELD SLOTTING WILL BE NECESSARY. FIELD SLOTS SHALL BE SAWCUT (SCORED INSIDE AND OUT) AND BRUSH HAMMER TO PROVIDE A ROUGHENED SURFACE FOR GROUT BONDING AND TO MINIMIZE REINFORCING SPLICES.

EXCAVATION FOR ALL PRECAST VAULTS AND HANDHOLES MUST ALLOW FOR OVERALL ASSEMBLED HEIGHT OF THE VAULT PLUS ADDED HEIGHT OF RISERS AND BEDDING MATERIAL CONSISTING OF 6" OF COMPACTED SAND OR GRAVEL, GRADED LEVEL. A MINIMUM EXCAVATION CLEARANCE OF 4" AROUND THE SIDEWALLS OF THE VAULT IS REQUIRED FOR EASE OF INSTALLATION.


BACKFILL AROUND ALL VAULTS SHOULD CONSIST OF COMPACTED SELECT BACKFILL MATERIAL OR IN ACCORDANCE WITH AGENCY SPECIFIED BACKFILL. IN NO CASE SHALL THE MATERIAL BE SATURATED SOIL, OR CONTAIN LARGE ROCKS OR CHUNKS. NO VOIDS SHOULD REMAIN BETWEEN THE VAULT WALLS AND NATIVE SOIL OF EXCAVATION. BACKFILLING SHOULD NOT BE DONE UNTIL THE VAULT IS COMPLETELY ASSEMBLED MAKING CERTAIN TO COMPACT THE BACKFILL PROGRESSIVELY IN 12" LIFTS FROM THE BOTTOM TO THE TOP SURFACE. WHEN USING MECHANICAL VIBRATORY EQUIPMENT TO OBTAIN 95% COMPACTION NEAR COMPOSITE VAULTS AND HANDHOLES, CONTRACTOR IS TO PLACE INTERNAL CROSS--BRACING PER MANUFACTURER SPECIFICATIONS.

ALL BACKFILLING IS THE RESPONSIBILITY OF THE CONTRACTOR.

ALL GROUTING OF RISERS, COVERS, CONDUIT, OR SPECIFIC SECTIONS OF VAULTS IS THE RESPONSIBILITY OF THE CONTRACTOR. NON--SHRINK CONCRETE GROUT WILL BE USED TO SEAL ALL JOINTS AND APPLIED IN A MANNER TO ENSURE COMPLETE FILLING OF VOIDS IN THE JOINT BEING SEALED.

ACCESS DOORS SHALL BE CONSTRUCTED OF STEEL, ALUMINUM, OR CONCRETE WITH AN APPROVED NON--SLIP SURFACE HAVING A STATIC COEFFICIENT OF FRICTION BETWEEN 0.60 AND 1.00 AS DETERMINED BY ASTM DESIGNATION C 1028--89. ACCESS DOORS ON INCLINED SURFACES GREATER THAN 4 % SHALL HAVE A COEFFICIENT OF FRICTION BETWEEN 0.80 AND 1.00.

OWNERS ARE RESPONSIBLE TO MAINTAIN THE NON--SLIP CHARACTERISTICS OF THE ACCESS DOOR OVER ITS LIFE IN THE SIDEWALK AREA.



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information at the speed of light

CLACKAMAS BROADBAND EXPRESS
STANDARD PLANS FOR CONSTRUCTION
GENERAL NOTES

CITY: CITY – TOWNSHIP RANGE SECTION: COUNTY: COUNTY CO., STATE

PLOT DATE: 12/06/2016	SCALE: AS SHOWN	PROJECT NAME--FILENAME.DWG – TAB_SHEET # CBX--DT00.DWG – GN02_1.4	SHEET 1.4
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SPECIFICATION SET

EXISTING MANHOLE ACCESS:

THE CONTRACTOR SHALL CORE DRILL EXISTING CONCRETE WALLS TO PROVIDE ACCESS FOR CONDUIT AS SHOWN IN THE PLANS. CORE DRILLING SHALL PROVIDE A MINIMUM 1 INCH LARGER DIAMETER HOLE THAN THE SIZE OF CONDUIT BEING PLACED. THE CONTRACTOR SHALL SEAL THE VOID BETWEEN THE CONDUIT AND THE CONCRETE WITH NON-SHRINK EPOXY GROUT.

THE CONTRACTOR SHALL REPAIR ANY STRUCTURAL REINFORCING DAMAGED BY CORE DRILLING. REINFORCING REPAIR SHALL BE IN CONFORMANCE WITH THE REQUIREMENTS AND SPECIFICATIONS OF CRSI (CONCRETE REINFORCED STEEL INSTITUTE).

IF THE CONTRACTOR ELECTS TO ADJUST AN ACCESS HOLE IN WHICH REINFORCING WAS FOUND TO AVOID DAMAGE TO THE REINFORCING STEEL HE SHALL FULLY EXPOSE THE SURFACE OF THE REBAR AND FIELD COAT THE BAR WITH A ZINC RICH PAINT BEFORE PLACING NON-SHRINK EPOXY GROUT TO REPAIR DAMAGE.

LOCATORS AND MARKERS:

THE CONTRACTOR IS RESPONSIBLE FOR PLACING APPROPRIATE MARKERS TO INSURE THAT OTHER UTILITIES WORKING IN THE AREA OF OWNER FACILITIES ARE AWARE OF THEIR PRESENCE BEFORE DAMAGE CAN OCCUR. MARKING WILL BE MADE BY USE OF "WARNING TAPE" AND "POST MARKERS" FOR CONDUIT, AND 3M ELECTRONIC MARKER SYSTEM (EMS) LOCATORS FOR VAULTS AND HANDHOLES.

"WARNING TAPE" SHOULD BE PLACED A MINIMUM OF 12" ABOVE ANY CONDUIT ALONG THE ENTIRE TRENCH ROUTE, WHILE ADDITIONALLY "POST MARKERS" SHOULD BE PLACED EVERY 500' IN SUBURBAN AREAS AND 1000' IN RURAL AREAS.

BOTH VAULTS AND HANDHOLES ARE TO BE EQUIPPED WITH EMS LOCATORS. VAULTS AND HANDHOLES SHALL HAVE EMS MARKERS INSTALLED SECURED ON THE WALL AT THE TOP TO EASE LOCATING.

LOCATE WIRE AND BONDING:

ALL UNDERGROUND TELECOMMUNICATIONS INFRASTRUCTURE CONDUIT SHALL HAVE A #12 AWG HDPE 30 MIL COPPER STRANDED LOCATE WIRE PLACED INSIDE OR ALONG THE CONDUIT ALIGNMENT UNLESS SPECIFIED OTHERWISE BY THE GOVERNING PERMIT AGENCY.

ALL LOCATE WIRE SHALL BE EFFECTIVELY GROUNDED PER INDUSTRY ACCEPTABLE STANDARDS. T-3 LOCATE WIRE ACCESS TERMINALS OR APPROVED EQUIVALENT SHALL BE INSTALLED AT VAULT/HANDHOLE LOCATIONS FOR TERMINATION OF LOCATE WIRE AND HAVE SUFFICIENT ACCESS FOR THE EASE OF LOCATING FACILITIES. LOCATE WIRE TERMINALS ARE TO BE MOUNTED ON AN ACCESSORY ANGLE BRACKET ON THE INTERIOR RISER / WALL OF A CONCRETE VAULT OR INTERIOR WALL OF A FIBERGLASS / COMPOSITE VAULT.

ALL NEW UTILITY VAULT OR HANDHOLE INSTALLATIONS SHALL REQUIRE THE INSTALLATION OF A 5/8" COPPER CLAD GROUND ROD IN OR THROUGH THE BOTTOM OF THE VAULT USING CAUTION NOT TO DAMAGE EXISTING SUBSTRUCTURE. GROUND ROD SHALL BE OF PROPER LENGTH AND PLACEMENT TO ACHIEVE AN EFFECTIVE ELECTRICAL GROUND PER NEC / NESC AND THE GOVERNING PERMIT AGENCY. #6 AWG COPPER WIRE IS TO BE PLACED FROM THE GROUND ROD TO THE GROUND LUG ON THE T-3 LOCATE WIRE TERMINAL. ALL #12 AWG LOCATE WIRE ENTERING VAULTS OR HANDHOLES SHALL BE TERMINATED TO THE T-3 LOCATE WIRE ACCESS TERMINAL USING MANUFACTURER SUPPLIED BINDING POSTS. BONDING STRAPS ARE TO BE INSTALLED BETWEEN ALL #12 BINDING POSTS AND THE #6 GROUND LUG EFFECTIVELY GROUNDING ALL LOCATE WIRE WITHIN THE STRUCTURE.

LOCATE WIRE PLACED THROUGH CONDUIT RISERS WHEN TRANSITIONING FROM UNDERGROUND TO AERIAL ON UTILITY POLES SHALL BE BONDED TO THE MGN ON THE POLE NEAR THE TOP OF THE RISER. IF NO MGN IS PRESENT A NEW #6 AWG VERTICAL GROUND AND 5/8" COPPER CLAD GROUND ROD SHALL BE PLACED PER NESC / NEC GUIDELINES TO ACCOMMODATE EFFECTIVE GROUNDING.

PRIOR TO TOUCHING, WORKING OR CONNECTING LOCATING EQUIPMENT TO LOCATE WIRE, THE SYSTEM MUST BE TESTED FOR INDUCED VOLTAGE. INSTALL FILTER PROTECTOR / ARRESTOR AS REQUIRED ON ONE OR BOTH LOCATE WIRES IF INDUCED VOLTAGE EXCEEDS 50VAC.

*ALL LOCATE WIRE TERMINATION AND BONDING OF CONDUCTIVE MATERIALS TO BE IN ACCORDANCE WITH THE LATEST VERSION OF THE NATIONAL ELECTRIC SAFETY CODE AND THE NATIONAL ELECTRIC CODE.

BUILDING CONSTRUCTION:

ALL WORK SHALL BE DONE IN A "NEAT AND WORKMAN" LIKE MANNER, IN CONFORMITY WITH LOCAL, STATE AND FEDERAL BUILDING CODES. ALL WORK MUST COMPLY WITH APPLICABLE DATA SYSTEM STANDARDS AND NATIONAL ELECTRIC CODE STANDARD SPECIFICATIONS. STANDARDS INCLUDE, BUT ARE NOT LIMITED TO, EIA/TIA 568-B COMMERCIAL BUILDING WIRING STANDARDS AND EIA/TIA 569-A COMMERCIAL BUILDING STANDARD FOR TELECOMMUNICATIONS PATHWAYS AND SPACES.

AS-BUILT DATA – METHOD OF PROCEDURE:

UPON NOTIFICATION OF COMPLETION OF THE WORK AND ACCEPTANCE BY THE OWNER, THE CONTRACTOR SHALL PROVIDE THE PROJECT MANAGER WITH A SET OF NEAT AND ACCURATE "AS-BUILT" DRAWINGS WITHIN 10 BUSINESS DAYS OF COMPLETION OF THE PROJECT.

AS-BUILT DATA SHALL BE UPDATED AND MAINTAINED DAILY ON FIELD COPY DRAWINGS FOR THE DURATION OF CONSTRUCTION. UPON COMPLETION OF THE PROJECT, THE AS-BUILT DATA SHALL BE TRANSFERRED TO A CLEAN SET OF CONSTRUCTION DRAWINGS FOR SUBMITTAL TO THE PROJECT MANAGER.

THE AS-BUILT DATA SHALL BE DETAILED ON THE DRAWINGS IN EITHER COLORED INK OR COLORED PENCIL ACCORDING TO THE FOLLOWING COLOR CODES:

RED: WORK PLACED ACCORDING TO DESIGN AND CHANGES TO THE DESIGN
GREEN: WORK NOT PLACED ACCORDING TO THE DESIGN; OMIT FROM DESIGN
BLUE: EXISTING UTILITIES, FACILITIES, COMMENTS AND NOTES

- 1) WORK PERFORMED ACCORDING TO THE DESIGN SHALL BE HIGHLIGHTED OR LOCATED IN RED.
- 2) WORK PERFORMED ACCORDING TO APPROVED CHANGES OR VARIATIONS TO THE DESIGN SHALL BE NEATLY DRAWN AND DETAILED ON THE DRAWINGS SHOWING HOW THE CHANGES WERE CONSTRUCTED IN THE FIELD.
- 3) WORK THAT WAS DESIGNED BUT NOT PERFORMED AS SHOWN ON THE DRAWINGS SHALL BE HIGHLIGHTED OR LOCATED IN GREEN TO SHOW THAT THE WORK FUNCTION WAS NOT CONSTRUCTED AS DESIGNED.
- 4) EXISTING FACILITIES OR UTILITIES ENCOUNTERED; CONSTRUCTION NOTES; ADDITIONAL CONSTRUCTION RELATED INFORMATION IDENTIFIED IN THE FIELD SHALL BE NEATLY DRAWN AND DETAILED IN BLUE.

COLORED HIGHLIGHTER PENS ACCORDING TO THE COLOR CODES AS DETAILED ABOVE ARE ACCEPTABLE. FLUORESCENT YELLOW HIGHLIGHTER PENS ARE NOT AN ACCEPTABLE FORM OF AS-BUILT COLORING.

AS-BUILT DRAWINGS SHALL CONTAIN THE FOLLOWING DATA AT A MINIMUM FOR EACH OF THE FOLLOWING WORK FUNCTIONS:

AERIAL SEGMENTS:

- 1) POINT OF ATTACHMENT HEIGHT FROM THE GROUND TO THE CABLE AND/OR STRAND ON ALL POLES.
- 2) CABLE FOOTAGE (SEQUENTIAL) MARKINGS AT ALL CABLE ENDS; START AND END OF SLACK STORAGE AND CONDUIT ENTRANCE / EXIT POINTS.
- 3) LOCATION OF ALL SLACK STORAGE AND CABLE SPLICE POINTS.
- 4) ANCHOR AND DOWN GUY SIZE PLACED AND LEAD LENGTH BETWEEN THE ANCHOR AND THE POLE.

UNDERGROUND SEGMENTS:

- 1) DEPTH OF CONDUIT MEASURED EVERY 25 FEET AND AT EVERY CHANGE IN DIRECTION ALONG THE CONDUIT ALIGNMENT.
- 2) OFFSET DISTANCE MEASURED EVERY 25 FEET AND AT EVERY CHANGE IN DIRECTION FROM THE ALIGNMENT TO A CURB, EDGE OF PAVEMENT OR OTHER PHYSICAL REFERENCE OBJECT.
- 3) LOCATION AND DEPTH OF VAULTS, HAND HOLES AND JUNCTION BOXES PLACED.
- 4) DEPTH, TYPE AND DIRECTION OF ANY EXISTING UTILITY ENCOUNTERED CROSSING THE CONDUIT ROUTE.
- 5) LOCATION OF MAGNETIC LOCATING TARGETS PLACED.
- 6) CABLE FOOTAGE (SEQUENTIAL) MARKINGS AT ALL CABLE ENDS, START AND END OF SLACK STORAGE, CONDUIT ENTRANCE / EXIT POINTS.
- 7) ACTUAL QUANTITY OF CABLE SLACK STORAGE LEFT IN VAULT LOCATIONS.
- 8) ACTUAL WALL TO WALL MEASUREMENTS OF CONDUIT SEGMENTS BETWEEN VAULTS.
- 9) PROVIDE DETAILED VAULT BUTTERFLY DRAWINGS INCLUDING CONDUIT ENTRY AND EXIT LOCATIONS; CONDUIT SIZE & TYPE; CABLE ROUTING; CABLE COILS; SPLICE CASES; RACKING; LOCATE WIRES; LOCATE TERMINALS; GROUND RODS; GROUNDING; AND GENERAL ORIENTATION.

AS-BUILT DATA – METHOD OF PROCEDURE:

DIRECTIONAL BORING:

- 1) DEPTH OF CONDUIT MEASURED EVERY 10 FEET WITH A RUNNING LINE OFFSET DISTANCE FROM A CURB, EDGE OF PAVEMENT OR OTHER PHYSICAL REFERENCE OBJECT.
- 2) BORE PLAN AND PROFILE DRAWING REFLECTING THE DEPTH AND RUNNING LINE OFFSET MEASUREMENT EVERY 10 FEET THROUGHOUT THE ENTIRE LENGTH OF THE BORE; DETAIL BORE PROFILES WITH DEPTH AND LOCATION OF ALL VISUALLY VERIFIED UTILITIES (I.E. ALL POT-HOLED UTILITIES EXPOSED ALONG THE BORE ALIGNMENT)

- 3) AS-BUILT DRAWINGS SHALL HAVE THE WORDS "AS-BUILT" WITH THE NAME OF THE CONTRACTOR AND THE DATE STAMPED ON EVERY SHEET IN THE DRAWING PACKAGE.

ANY CHANGES OR DEVIATIONS FROM THE CONSTRUCTION DRAWINGS MUST BE APPROVED BY THE PROJECT MANAGER OR THE OWNER PRIOR TO MAKING ANY OF THE SAID CHANGES OR DEVIATIONS.

PHOTO DOCUMENTATION:


ALL UNDERGROUND VAULTS; JUNCTION BOXES, CONDUIT INFRASTRUCTURE; TRENCHES; EXCAVATIONS; AND RESTORATION TO BE CLEARLY PHOTOGRAPHED BEFORE, DURING AND AFTER CONSTRUCTION TO VERIFY THAT CONSTRUCTION PROCEDURES ARE MET. FACILITY ENTRANCES, PULL BOXES, CABLE RACEWAYS, SPLICE CASES, SPLICE TRAYS, TERMINATION RACKS AND OTHER EQUIPMENT OR ELECTRONICS INSTALLED BY CONTRACTOR TO BE PHOTOGRAPHED AT THE TIME OF INSTALLATION TO ENSURE PROPER PROCEDURES ARE MET AND TO PROVIDE ADEQUATE DOCUMENTATION TO SERVE AS ASBUILT RECORD.

GENERAL SPECIFICATIONS DISCLAIMER

THE INFORMATION CONTAINED IN THESE SPECIFICATIONS PROVIDES GENERAL GUIDELINES NECESSARY TO FACILITATE THE INSTALLATION OF COMMUNICATIONS INFRASTRUCTURE. ANY DISCREPANCIES BETWEEN THESE SPECIFICATIONS AND THE LOCAL GOVERNING AUTHORITY OR PERMIT AGENCY IS TO BE VALIDATED WITH THE DESIGNER OR OWNER PRIOR TO CONSTRUCTION. WHERE DETAILS ARE SHOWN, THEY ARE PROVIDED AS A REFERENCE FOR PLACEMENT OF COMMUNICATIONS INFRASTRUCTURE AND ACCEPTABLE INDUSTRY STANDARDS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE INSTALLATION OF ALL INFRASTRUCTURE MEETS THE APPLICABLE LOCAL, REGIONAL AND NATIONAL BUILDING CODES AND SAFETY STANDARDS. COMMSTRUCTURE CONSULTING, LLC. DOES NOT ASSUME LIABILITY FOR THE NEGLIGENCE OF THE INSTALLATION CONTRACTOR AND THEIR ABILITY TO PERFORM ANY ASPECT OF THE WORK HEREIN ACCORDING TO THESE STANDARDS.

REFERENCES:

- EIA/TIA COMMERCIAL BUILDING WIRING STANDARD, 606 AND ALL RECOGNIZED TSBS.
- NATIONAL ELECTRIC SAFETY CODE
- UNDERWRITER’S LABORATORIES (UL): APPLICABLE LISTINGS AND RATINGS
- 1) ALL CONDUIT PLACED ON PRIVATE PROPERTY IS TO BE SCH 40 PVC IF PLACED OUTSIDE THE BUILDING AND EMT IF PLACED WITHIN THE BUILDING. RISER CONDUIT ON THE EXTERIOR OF BUILDING IS TO BE GRC UNLESS OTHERWISE SPECIFIED.
- 2) ALL CONDUIT IS TO BE EQUIPPED WITH INNERDUCT AS SPECIFIED.
- 3) 90 BENDS ARE TO BE "SWEEP" BENDS, 3' RADIUS, UNLESS OTHERWISE SPECIFIED.
- 4) CONDUIT PATHWAYS WITHIN BUILDING INTERIORS SHALL BE SUPPORTED WITH APPROPRIATE HARDWARE SPECIFIC TO THE EXISTING MATERIAL OR STRUCTURE.
- 5) ALL EXTERIOR WALL PENETRATIONS ARE TO BE RESEALED PER BUILDING AND FIRE CODE.
- 6) ALL INTERIOR WALL PENETRATIONS ARE TO COMPLY WITH PERTINENT BUILDING AND FIRE CODES AND ARE TO BE CONSTRUCTED IN SUCH A MANNER AS TO INSURE THE INTEGRITY OF THE PENETRATED WALL.
- 7) ALL PULL BOXES ARE TO BE NEMA TYPE 3R OR EQUIVALENT.
- 8) NOTIFY THE "BUILDING CONTACT" PERSON A MINIMUM OF 48 HOURS PRIOR TO COMMENCING ANY WORK ON THE PREMISES.



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information at the speed of light

CLACKAMAS BROADBAND EXPRESS
STANDARD PLANS FOR CONSTRUCTION
GENERAL NOTES

CITY: CITY – TOWNSHIP RANGE SECTION:

COUNTY: COUNTY CO., STATE

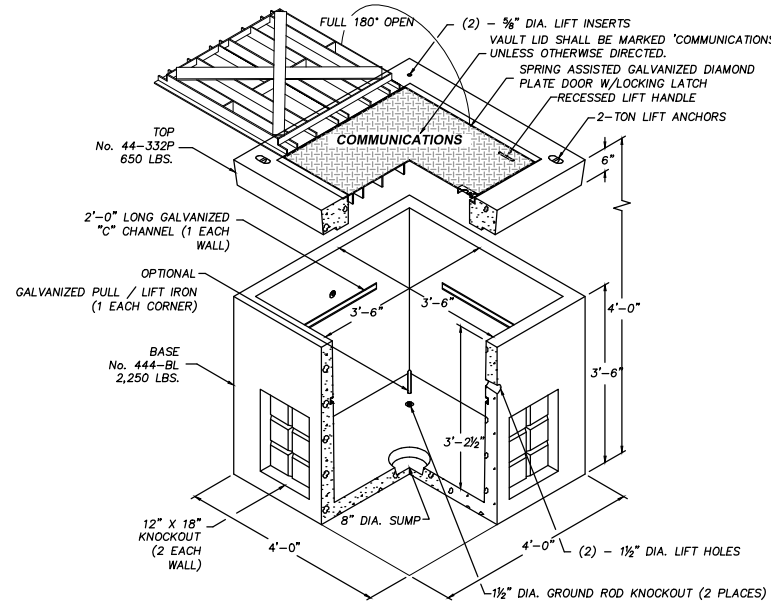
PLOT DATE:
12/06/2016

SCALE:
AS SHOWN

PROJECT NAME-FILENAME.DWG – TAB_SHEET #
CBX-DT00.DWG – GN03_1.5

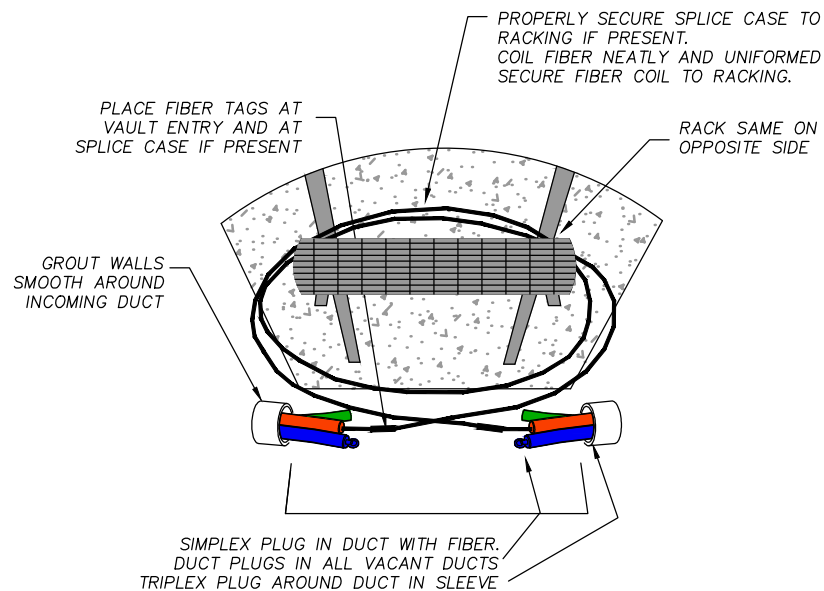
SHEET
1.5

SPECIFICATION SET



(SIDEWALK / INCIDENTAL TRAFFIC LOC.)
UTILITY VAULT PRE-CAST 444-LA

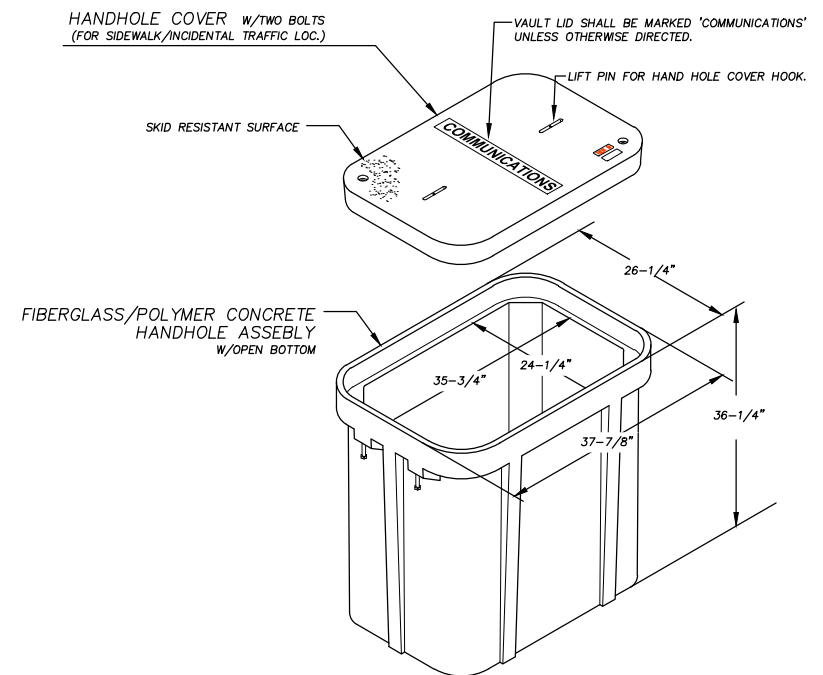
SCALE: (ADDITIONAL DETAILS SEE 1.1/1.6 & 4/1.6)



VAULT SHALL BE FREE OF DIRT AND DEBRIS.

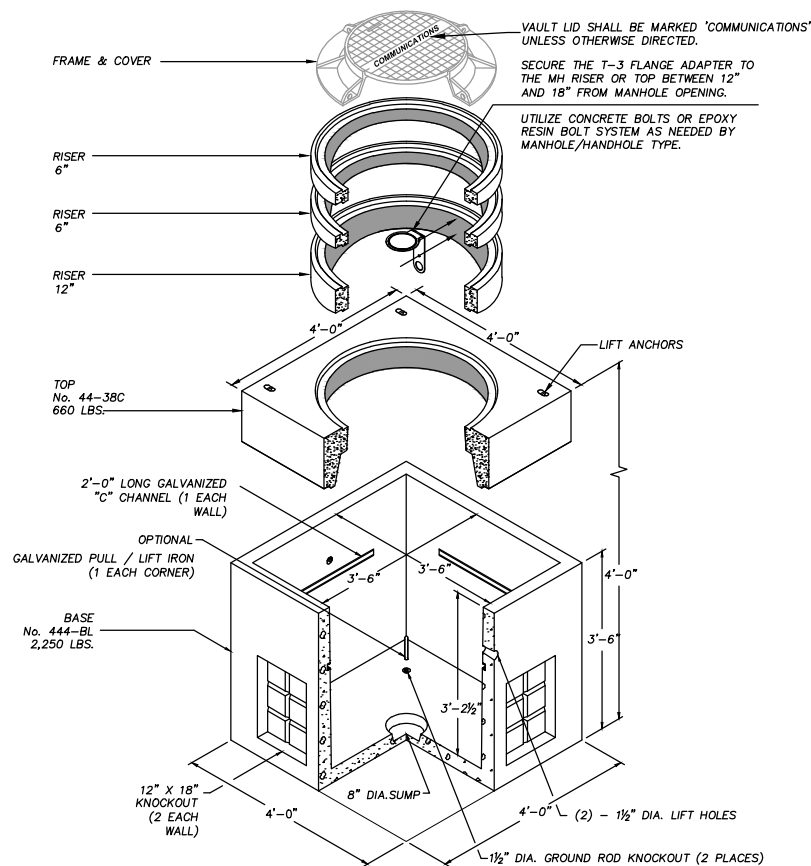
TYPICAL VAULT INTERIOR DETAIL

SCALE: 1" = N.T.S.



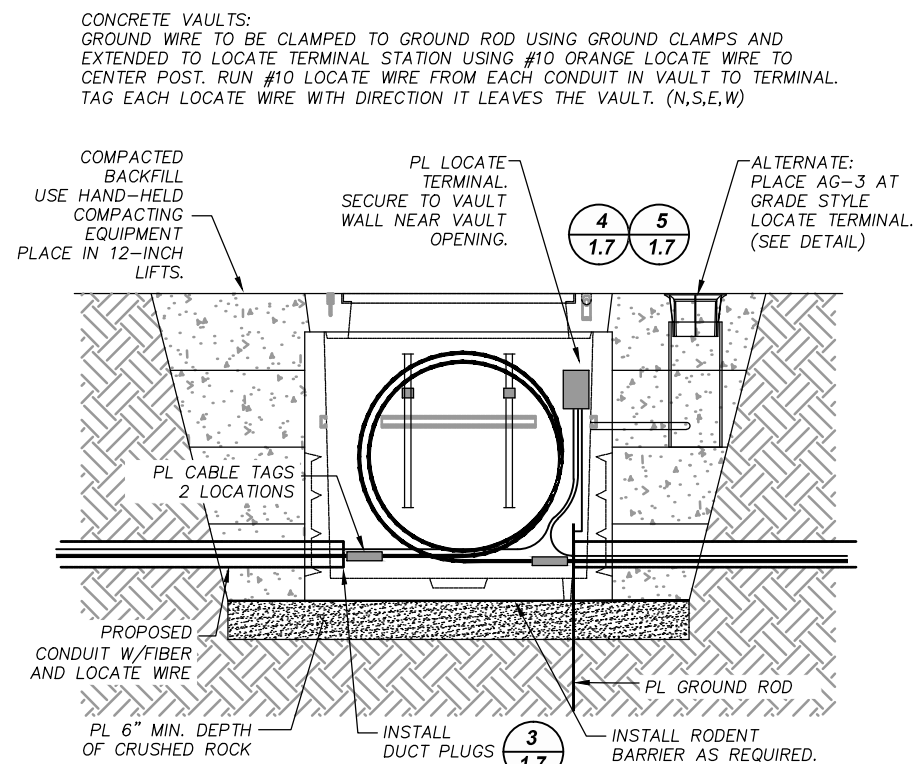
OPEN BOTTOM HANDHOLE

SCALE: (ADDITIONAL DETAILS SEE 3.1/1.6)



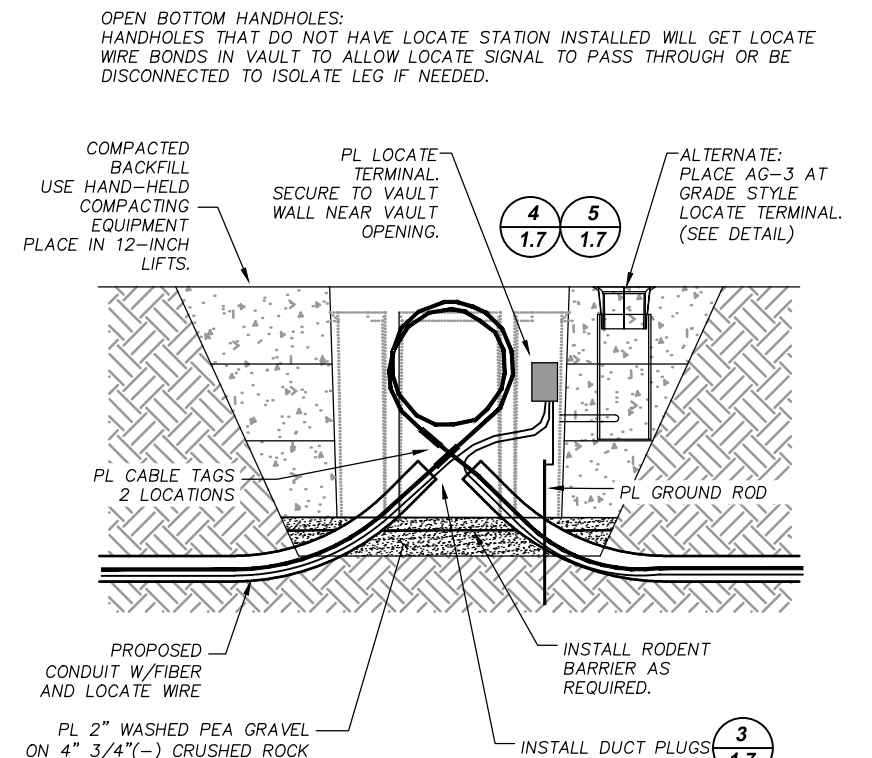
(ROADWAY / SUSTAINED TRAFFIC LOC.)
UTILITY VAULT PRE-CAST 444-LA

SCALE: (ADDITIONAL DETAILS SEE 1.1/1.6 & 4/1.6)



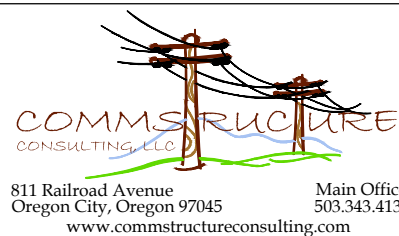
**VAULT SECTION INTERIOR DETAIL
UTILITY VAULT PRE-CAST MANHOLE**

SCALE: (ADDITIONAL DETAILS SEE 4/1.7 & 5/1.7)



**VAULT SECTION INTERIOR DETAIL
OPEN BOTTOM HANDHOLE**

SCALE: (ADDITIONAL DETAILS SEE 4/1.7 & 5/1.7)



DESIGNED BY: CCLLC

CHECKED BY: CCLLC

DRAWN BY: CCLLC

REVISIONS				
REV	DESCRIPTION	DATE	BY	APP

Clackamas Broadband eXchange

information at the speed of light

CLACKAMAS BROADBAND EXPRESS STANDARD PLANS FOR CONSTRUCTION VAULT DETAILS

CITY: CITY - TOWNSHIP RANGE SECTION:

PLOT DATE:
12/06/2016

SCALE:

AS SHOWN

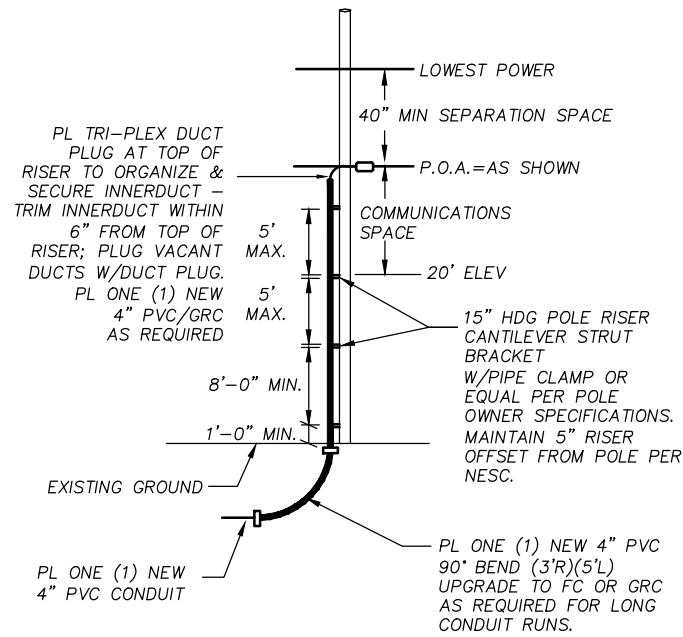
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CBX-DT00.DWG - DT01 1.6

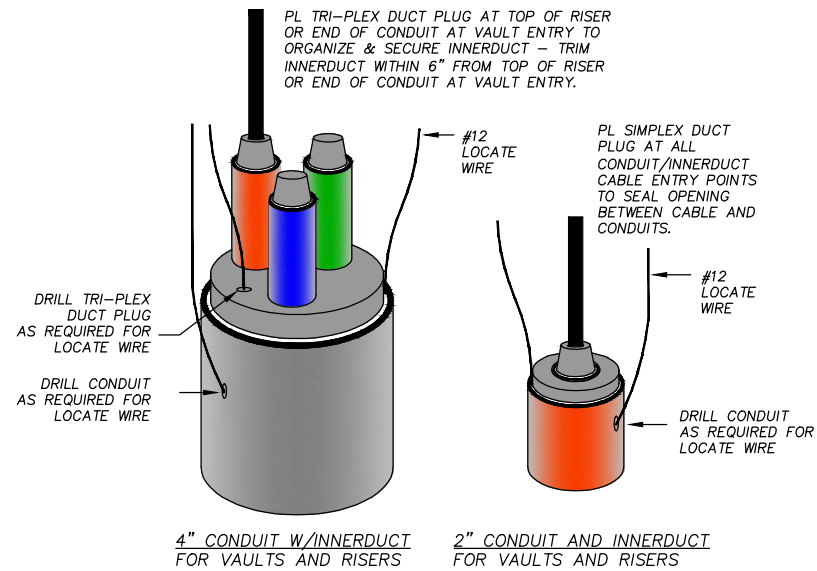
COUNTY: COUNTY CO., STATE

1.6

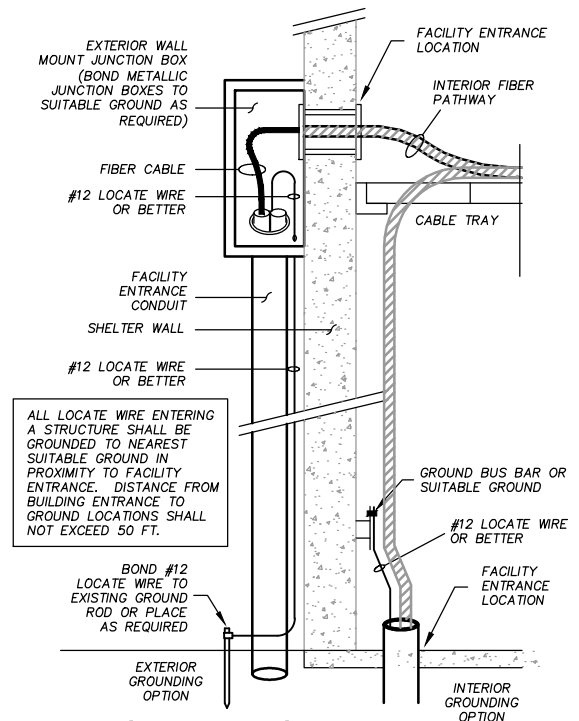
SPECIFICATION SET



SCALE: (ADDITIONAL DETAILS SEE 3/1.7 & 5/1.7)

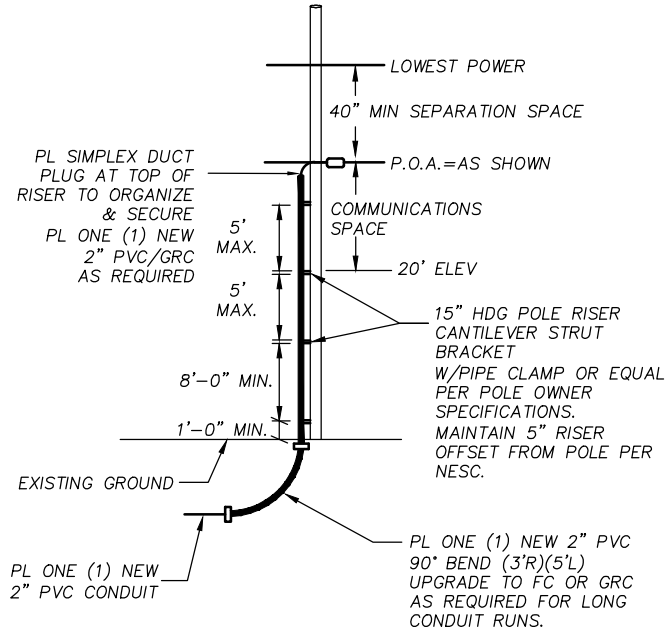
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SCALE: 1" = N.T.S.

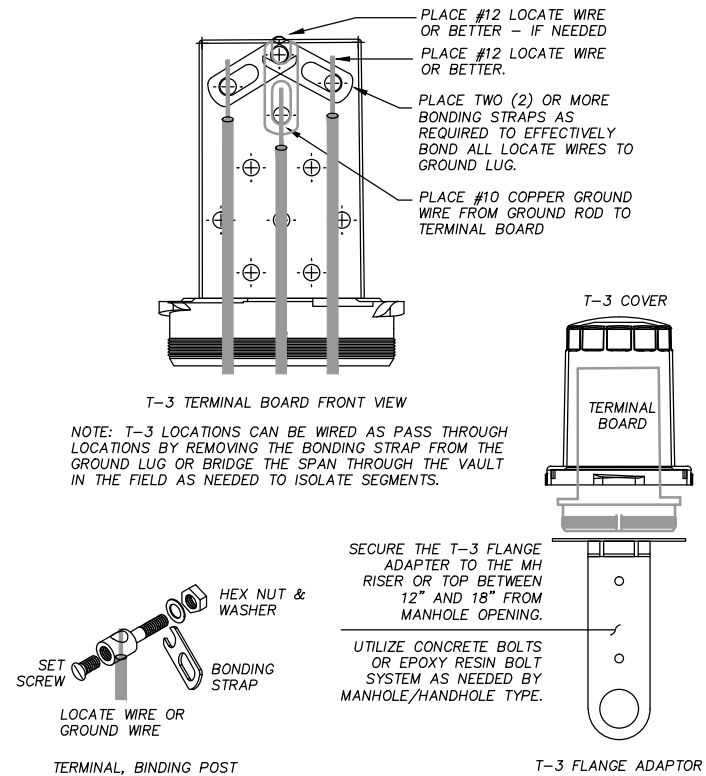
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SCALE: 1" = N.T.S.

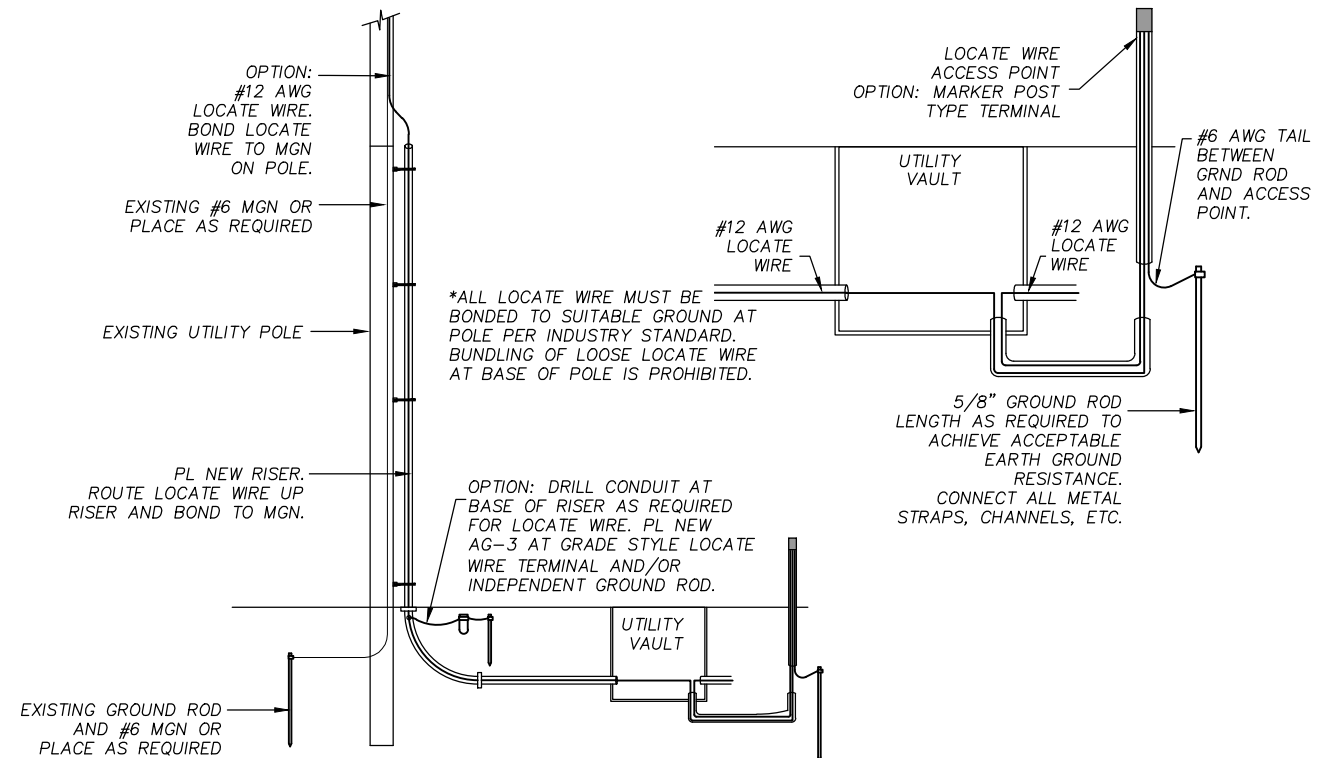
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SCALE: (ADDITIONAL DETAILS SEE 3/1.7 & 5/1.7)

$$\frac{2}{1.7}$$


SCALE: 1" = N.T.S.

$$\frac{4}{1.7}$$


SCALE: 1" = N.T.S.

$$\frac{3}{1.7}$$


DESIGNED BY: CCLLC

CHECKED BY: CCLLC

DRAWN BY: CCLLC

REVISIONS				
REV	DESCRIPTION	DATE	BY	APP

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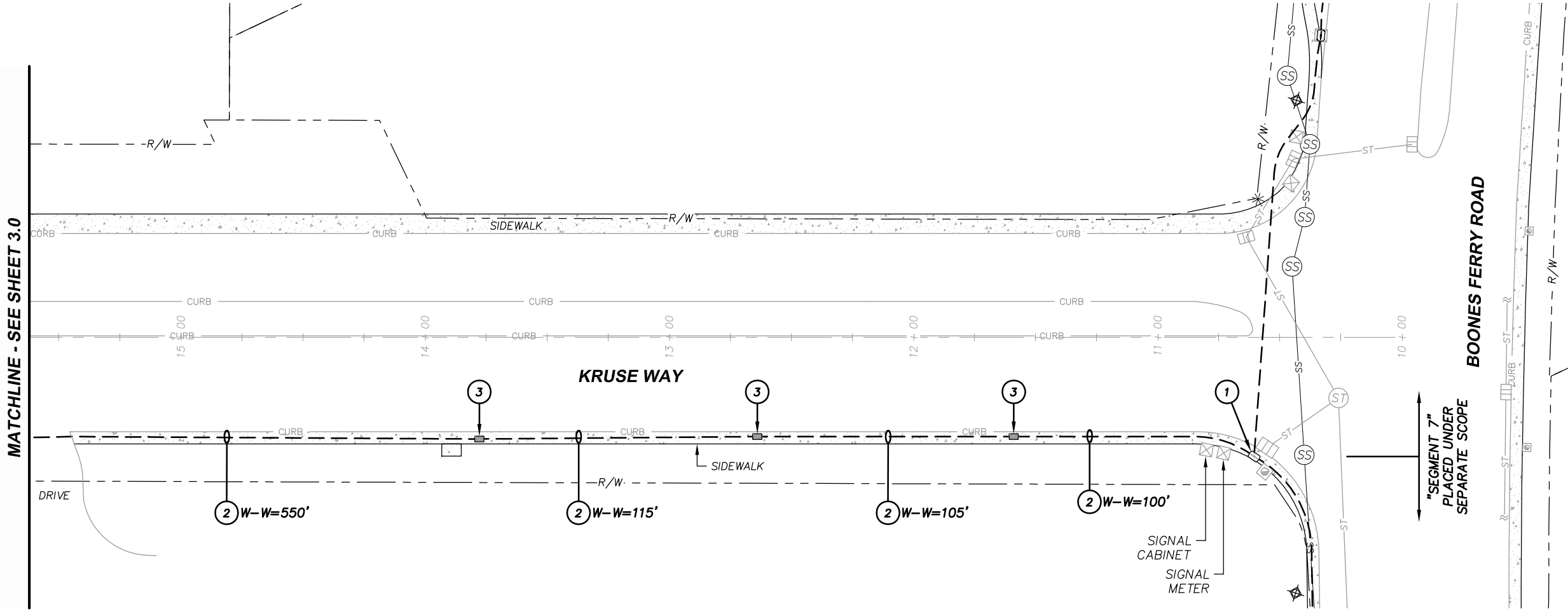
information at the speed of light

CLACKAMAS BROADBAND EXPRESS STANDARD PLANS FOR CONSTRUCTION

RISER DETAILS AND LOCATE WIRE / BONDING DETAILS

CITY: CITY - TOWNSHIP		RANGE	SECTION:	COUNTY: COUNTY CO., STATE
PLOT DATE: 12/06/2016	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG - TAB_SHEET # CBX-DT00.DWG - DT02_1.7		SHEET 1.7

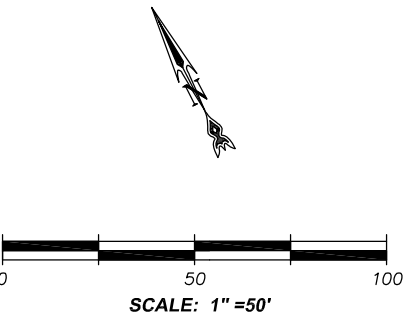
CONSTRUCTION SET



CONDUIT PLAN
SCALE: 1" = 50'

CONSTRUCTION NOTES

- 1 EXISTING CITY OF LAKE OSWEGO TRAFFIC SIGNAL JUNCTION BOX – PROPOSED MID-SHEATH SPLICE LOCATION.
EXISTING 100’ SLACK STORAGE IN 144F MICRO CABLE COILED IN VAULT. (SEGMENT 7)
LEAVE 100’ SLACK STORAGE IN NEW 144F MICRO CABLE COILED IN VAULT. (SEGMENT 8)
- 2 EXISTING CITY OF LAKE OSWEGO TRAFFIC SIGNAL CONDUIT.
PL ONE (1) NEW 2-WAY 18/14MM MICRODUCT W/ RIPCORD AND LOCATE WIRE THROUGH EXISTING CONDUIT.
PL ONE NEW 144F MICRO CABLE THROUGH ONE VACANT MICRO DUCT.
CONTRACTOR TO ROD AND PROOF CONDUIT PRIOR TO INSTALLATION
- 3 EXISTING CITY OF LAKE OSWEGO TRAFFIC SIGNAL JUNCTION BOX.
COUPLE MICRO DUCT AND #14 LOCATE WIRE THROUGH VAULT.
REMOVE AND REPLACE WITH 24X36X36 OPEN BOTTOM HANDHOLE AS REQUIRED.
PASS THROUGH ONLY NO SLACK STORAGE.



Plot Date: 17 Mar 2017, 2:23pm By User: Tom
Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 8\LAKEO-S8-CP00.DWG Layout (If Any): CP01_2.0

811 Railroad Avenue
Oregon City, Oregon 97045
www.commstructureconsulting.com

Main Office:
503.343.4134

DESIGNED BY: <u>T. WALKER</u>		DRAWN BY: <u>T. BRADLEY</u>	
CHECKED BY: <u>J. GREENWOOD</u>			
REVISIONS			
REV	DESCRIPTION	DATE	BY APP

Clackamas Broadband eXchange

information at the speed of light

LAKE OSWEGO SCHOOL DISTRICT EXPANSION

SEGMENT 8 - OAK CREEK ELEMENTARY SCHOOL

CONDUIT PLAN

CITY: LAKE OSWEGO – TOWNSHIP 02 SOUTH RANGE 01 EAST SECTION: 6,7,8

COUNTY: CLACKAMAS CO., OREGON

PLOT DATE: 3/17/2017

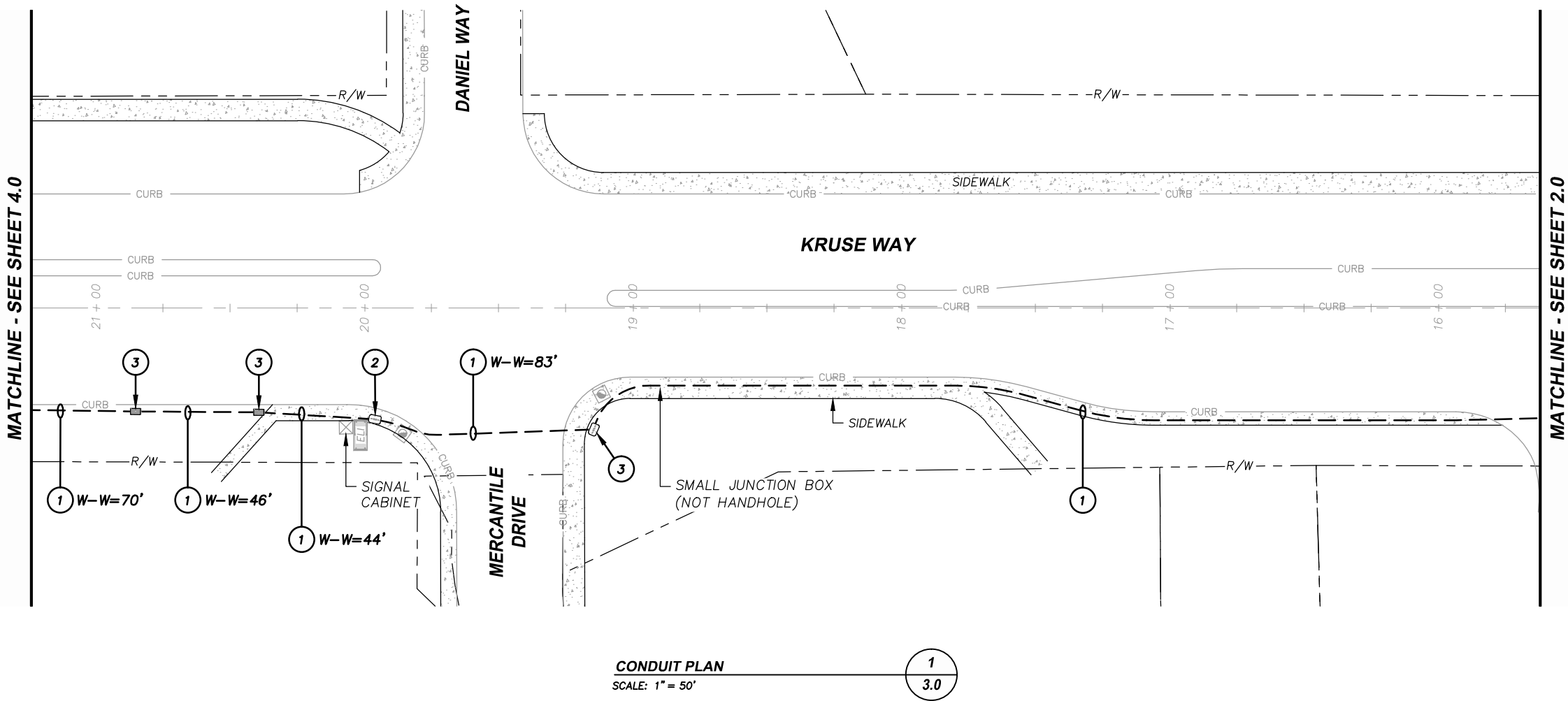
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PROJECT NAME-FILENAME.DWG – TAB_SHEET #

LAKEO-S8-CP00.DWG – CP01_2.0

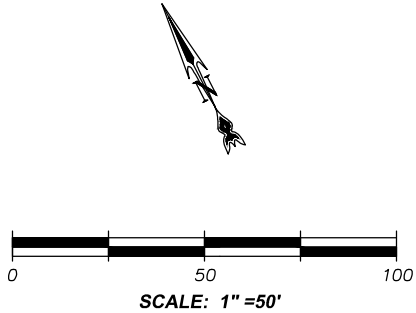
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CONSTRUCTION SET



CONSTRUCTION NOTES

- 1 EXISTING CITY OF LAKE OSWEGO TRAFFIC SIGNAL CONDUIT.
PL ONE (1) NEW 2-WAY 18/14MM MICRODUCT W/ RIPCORDER AND LOCATE WIRE THROUGH EXISTING CONDUIT.
PL ONE NEW 144F MICRO CABLE THROUGH ONE VACANT MICRO DUCT.
CONTRACTOR TO ROD AND PROOF CONDUIT PRIOR TO INSTALLATION
- 2 EXISTING CITY OF LAKE OSWEGO TRAFFIC SIGNAL JUNCTION BOX.
REMOVE AND REPLACE WITH NEW 24X36X36 OPEN BOTTOM HANDHOLE AS REQUIRED.
PL NEW GROUND ROD, LOCATE WIRE ACCESS POINT AND GROUND WIRE IN VAULT.
PL NEW #6 AWG TAIL BETWEEN GROUND ROD AND TEST STATION GROUND LUG.
BOND #14 AWG LOCATE WIRE TO ACCESS POINT.
LEAVE 100' SLACK STORAGE IN NEW 144F MICRO CABLE COILED IN VAULT.
- 3 EXISTING CITY OF LAKE OSWEGO TRAFFIC SIGNAL JUNCTION BOX.
COUPLE MICRO DUCT AND LOCATE WIRE THROUGH VAULT.
REMOVE AND REPLACE WITH 24X36X36 OPEN BOTTOM HANDHOLE AS REQUIRED.
PASS THROUGH ONLY NO SLACK STORAGE.



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DESIGNED BY: T. WALKER

CHECKED BY: J. GREENWOOD DRAWN BY: T. BRADLEY

REVISIONS				
✓	DESCRIPTION	DATE	BY	APP

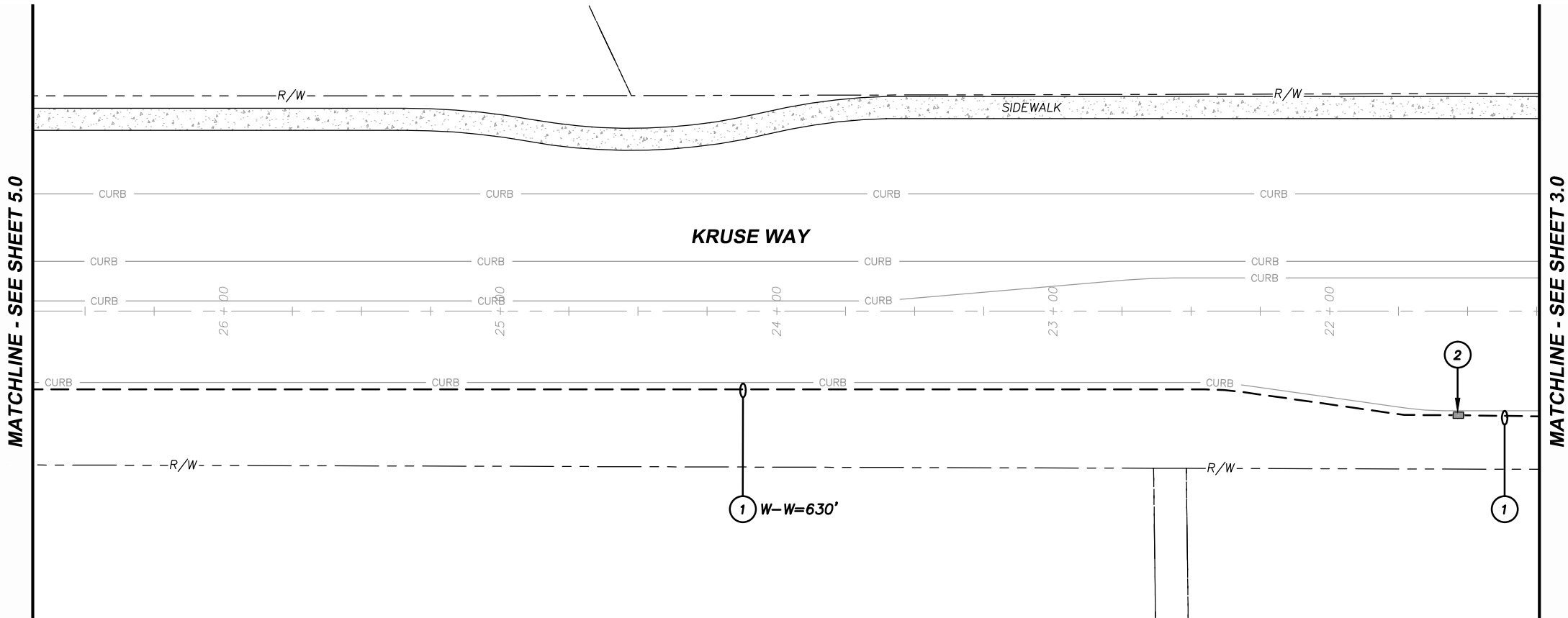
Clackamas Broadband eXchange

information at the speed of light

LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 8 - OAK CREEK ELEMENTARY SCHOOL
CONDUIT PLAN

CITY: LAKE OSWEGO – TOWNSHIP 02 SOUTH RANGE 01 EAST SECTION: 6,7,8		COUNTY: CLACKAMAS CO., OREGON	
PLOT DATE: 3/17/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG – TAB_SHEET # LAKE0-S8-CP00.DWG – CP01_3.0	SHEET 3.0

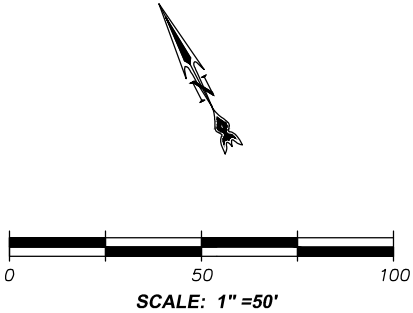
CONSTRUCTION SET




CONDUIT PLAN
SCALE: 1" = 50'

CONSTRUCTION NOTES

- 1 EXISTING CITY OF LAKE OSWEGO TRAFFIC SIGNAL CONDUIT.
PL ONE (1) NEW 2-WAY 18/14MM MICRODUCT W/ RIPCORD AND LOCATE WIRE THROUGH EXISTING CONDUIT.
PL ONE NEW 144F MICRO CABLE THROUGH ONE VACANT MICRO DUCT.
CONTRACTOR TO ROD AND PROOF CONDUIT PRIOR TO INSTALLATION
- 2 EXISTING CITY OF LAKE OSWEGO TRAFFIC SIGNAL JUNCTION BOX.
COUPLE MICRO DUCT AND LOCATE WIRE THROUGH VAULT.
REMOVE AND REPLACE WITH 24X36X36 OPEN BOTTOM HANDHOLE AS REQUIRED.
PASS THROUGH ONLY NO SLACK STORAGE.



Plot Date: 17 Mar 2017, 9:20am By User: Tom
Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 8\LAKEO-S8-CP00.DWG Layout (If Any): CP01_4.0



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LAKE OSWEGO SCHOOL DISTRICT EXPANSION

SEGMENT 8 - OAK CREEK ELEMENTARY SCHOOL

CONDUIT PLAN

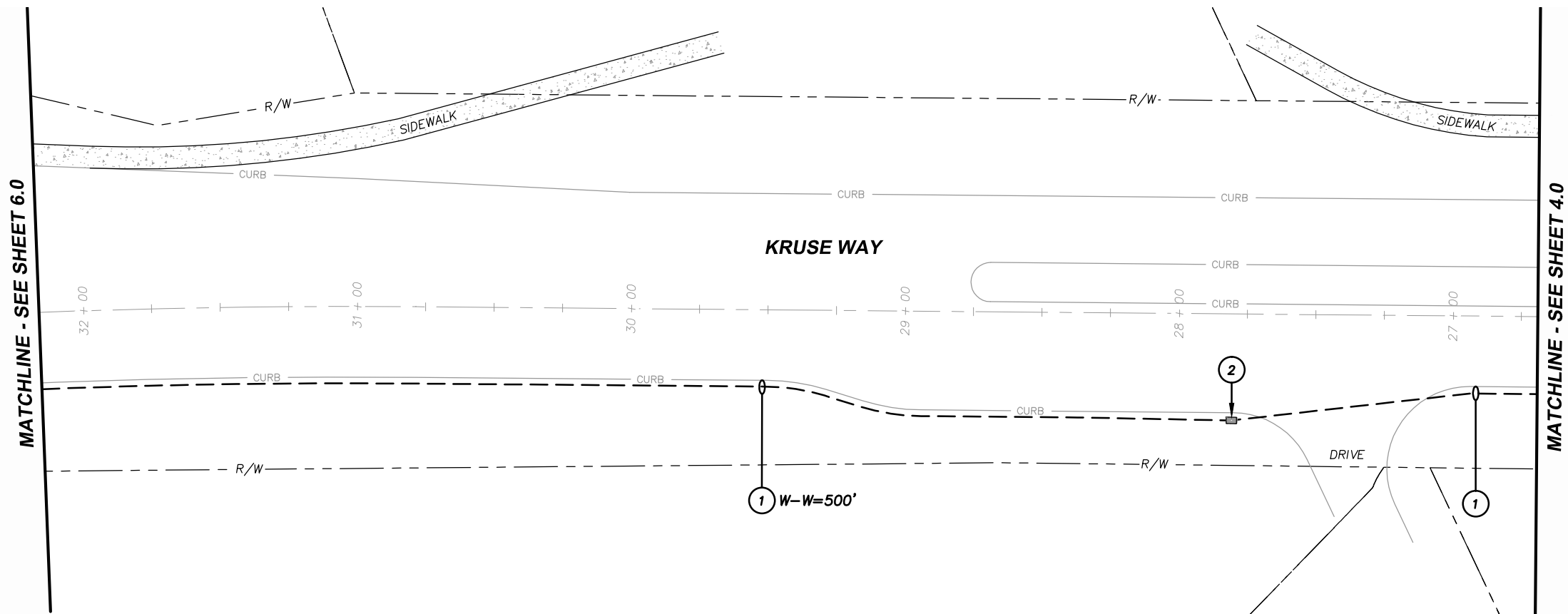
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COUNTY: CLACKAMAS CO., OREGON

PLOT DATE: 3/17/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG – TAB_SHEET # LAKEO-S8-CP00.DWG – CP01_4.0	SHEET 4.0
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CONSTRUCTION SET

Plot Date: 17 Mar 2017, 9:20am By User: Tom
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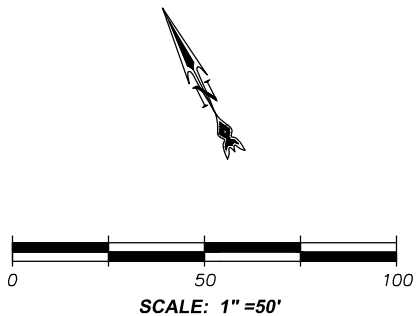


CONDUIT PLAN
SCALE: 1" = 50'

1
5.0

CONSTRUCTION NOTES

- 1 EXISTING CITY OF LAKE OSWEGO TRAFFIC SIGNAL CONDUIT.
PL ONE (1) NEW 2-WAY 18/14MM MICRODUCT W/ RIPCORD AND LOCATE WIRE THROUGH EXISTING CONDUIT.
PL ONE NEW 144F MICRO CABLE THROUGH ONE VACANT MICRO DUCT.
CONTRACTOR TO ROD AND PROOF CONDUIT PRIOR TO INSTALLATION
- 2 EXISTING CITY OF LAKE OSWEGO TRAFFIC SIGNAL JUNCTION BOX.
REMOVE AND REPLACE WITH NEW 24X36X36 OPEN BOTTOM HANDHOLE AS REQUIRED.
LEAVE 100' SLACK STORAGE IN NEW 144F MICRO CABLE COILED IN VAULT.
LOCATE WIRE TO BE CONTINUOUS - COUPLE / SPLICE THROUGH VAULT.



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CHECKED BY: J. GREENWOOD

DRAWN BY: T. BRADLEY

REVISIONS				
REV	DESCRIPTION	DATE	BY	APP

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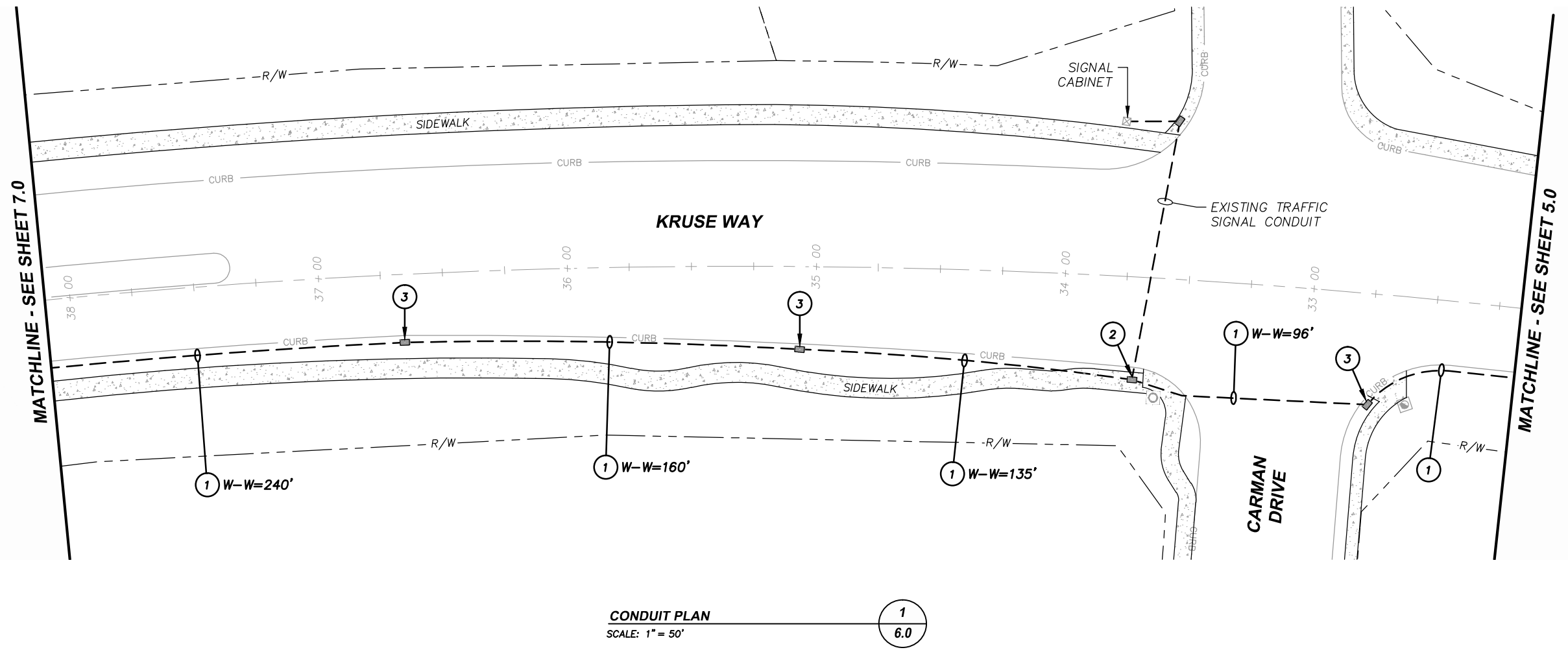
information at the speed of light

LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 8 - OAK CREEK ELEMENTARY SCHOOL

CONDUIT PLAN

CITY: LAKE OSWEGO - TOWNSHIP 02 SOUTH RANGE 01 EAST SECTION: 6,7,8		COUNTY: CLACKAMAS CO., OREGON	
PLOT DATE: 3/17/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG - TAB_SHEET # LAKEO-S8-CP00.DWG - CP01_5.0	SHEET 5.0

CONSTRUCTION SET



CONSTRUCTION NOTES

- 1 EXISTING CITY OF LAKE OSWEGO TRAFFIC SIGNAL CONDUIT.
PL ONE (1) NEW 2-WAY 18/14MM MICRODUCT W/ RIPCORDER AND LOCATE WIRE THROUGH EXISTING CONDUIT.
PL ONE NEW 144F MICRO CABLE THROUGH ONE VACANT MICRO DUCT.
CONTRACTOR TO ROD AND PROOF CONDUIT PRIOR TO INSTALLATION
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REMOVE AND REPLACE WITH NEW 24X36X36 OPEN BOTTOM HANDHOLE AS REQUIRED.
PL NEW GROUND ROD, LOCATE WIRE ACCESS POINT AND GROUND WIRE IN VAULT.
PL NEW #6 AWG TAIL BETWEEN GROUND ROD AND TEST STATION GROUND LUG.
BOND #14 AWG LOCATE WIRE TO ACCESS POINT.
LEAVE 100' SLACK STORAGE IN NEW 144F MICRO CABLE COILED IN VAULT.
- 3 EXISTING CITY OF LAKE OSWEGO TRAFFIC SIGNAL JUNCTION BOX.
COUPLE MICRO DUCT AND LOCATE WIRE THROUGH VAULT.
REMOVE AND REPLACE WITH 24X36X36 OPEN BOTTOM HANDHOLE AS REQUIRED.
PASS THROUGH ONLY NO SLACK STORAGE.

Plot Date: 17 Mar 2017, 9:20am By User: Tom
Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 8\LAKEO-SB-CP00.DWG Layout (If Any): CP01_6.0

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REV	DESCRIPTION	DATE	BY	APP

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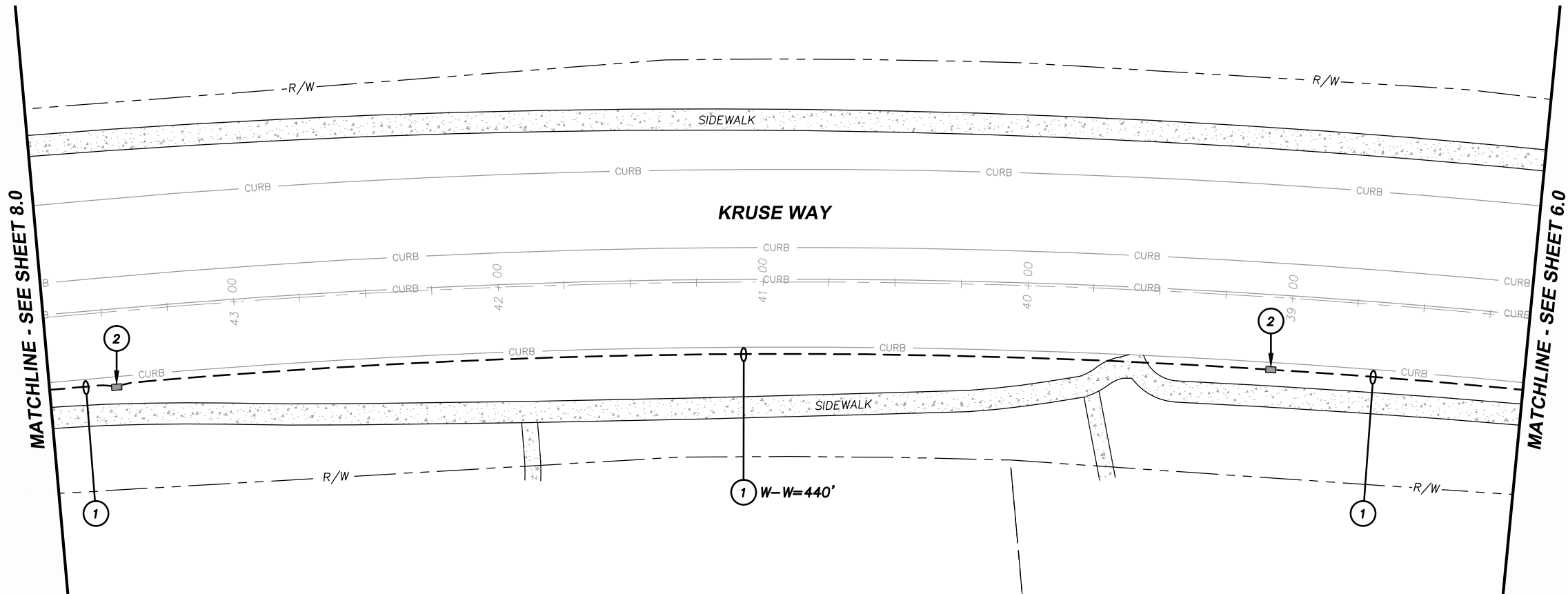
LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 8 - OAK CREEK ELEMENTARY SCHOOL

CONDUIT PLAN

CITY: LAKE OSWEGO - TOWNSHIP 02 SOUTH RANGE 01 EAST SECTION: 6,7,8		COUNTY: CLACKAMAS CO., OREGON	
PLOT DATE: 3/17/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG - TAB_SHEET # LAKEO-SB-CP00.DWG - CP01_6.0	SHEET 6.0

CONSTRUCTION SET

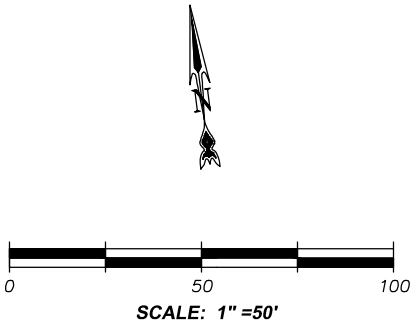
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Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 8\LAKEO-S8-CP00.DWG Layout (If Any): CP01_7.0



CONDUIT PLAN
SCALE: 1" = 50'

CONSTRUCTION NOTES

- 1 EXISTING CITY OF LAKE OSWEGO TRAFFIC SIGNAL CONDUIT.
PL ONE (1) NEW 2-WAY 18/14MM MICRODUCT W/ RIPCORD AND LOCATE WIRE THROUGH EXISTING CONDUIT.
PL ONE NEW 144F MICRO CABLE THROUGH ONE VACANT MICRO DUCT.
CONTRACTOR TO ROD AND PROOF CONDUIT PRIOR TO INSTALLATION
- 2 EXISTING CITY OF LAKE OSWEGO TRAFFIC SIGNAL JUNCTION BOX.
COUPLE MICRO DUCT AND LOCATE WIRE THROUGH VAULT.
REMOVE AND REPLACE WITH 24X36X36 OPEN BOTTOM HANDHOLE AS REQUIRED.
PASS THROUGH ONLY NO SLACK STORAGE.



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CHECKED BY: <u>J. GREENWOOD</u>			
REVISIONS			
REV	DESCRIPTION	DATE	BY APP

Clackamas Broadband eXchange

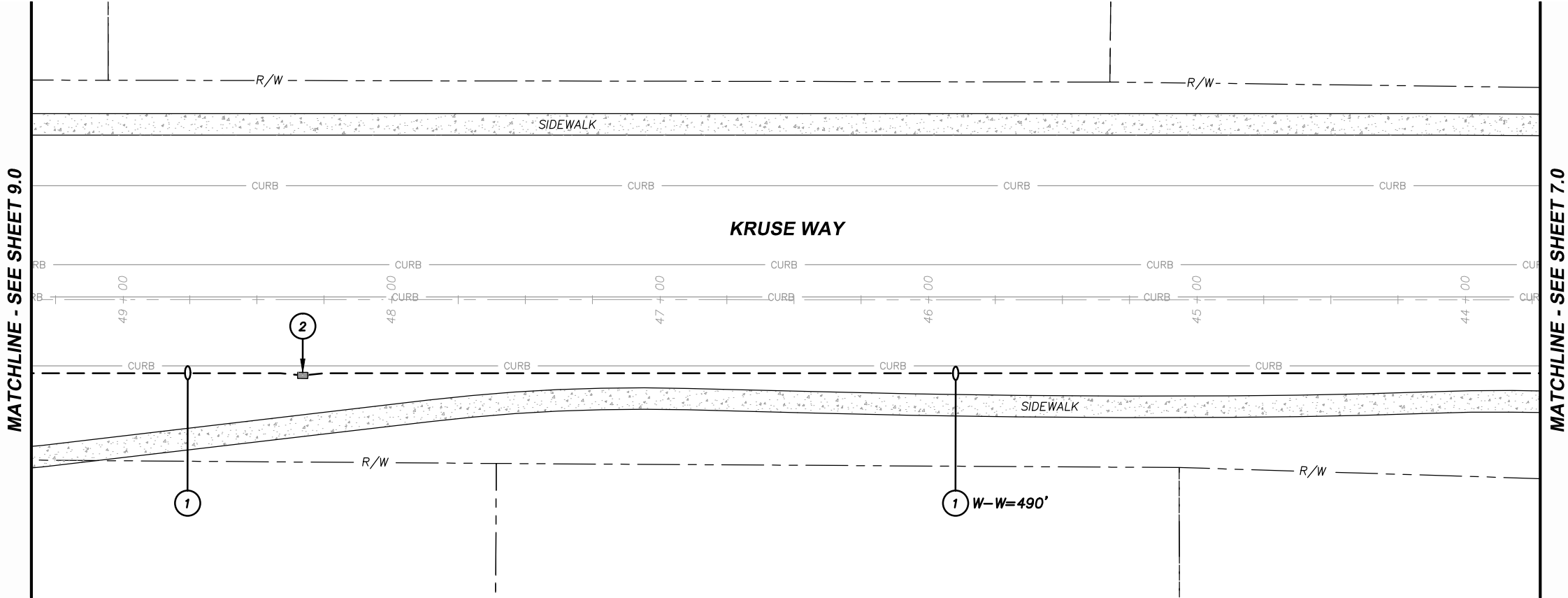
information at the speed of light

LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 8 - OAK CREEK ELEMENTARY SCHOOL

CONDUIT PLAN

CITY: LAKE OSWEGO – TOWNSHIP 02 SOUTH RANGE 01 EAST SECTION: 6,7,8		COUNTY: CLACKAMAS CO., OREGON	
PLOT DATE: 3/17/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG – TAB_SHEET # LAKEO-S8-CP00.DWG – CP01_7.0	SHEET 7.0

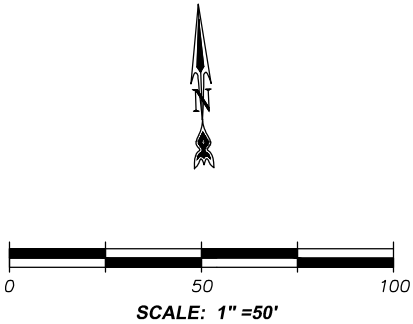
CONSTRUCTION SET



CONDUIT PLAN
SCALE: 1" = 50'

CONSTRUCTION NOTES

- 1 EXISTING CITY OF LAKE OSWEGO TRAFFIC SIGNAL CONDUIT.
PL ONE (1) NEW 2-WAY 18/14MM MICRODUCT W/ RIPCORD AND LOCATE WIRE THROUGH EXISTING CONDUIT.
PL ONE NEW 144F MICRO CABLE THROUGH ONE VACANT MICRO DUCT.
CONTRACTOR TO ROD AND PROOF CONDUIT PRIOR TO INSTALLATION
- 2 EXISTING CITY OF LAKE OSWEGO TRAFFIC SIGNAL JUNCTION BOX.
REMOVE AND REPLACE WITH NEW 24X36X36 OPEN BOTTOM HANDHOLE AS REQUIRED.
LEAVE 100' SLACK STORAGE IN NEW 144F MICRO CABLE COILED IN VAULT.
LOCATE WIRE TO BE CONTINUOUS – COUPLE / SPLICE THROUGH VAULT.



Plot Date: 17 Mar 2017, 9:21am By User: Tom
Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 8\LAKEO-SB-CP00.DWG Layout (If Any): CP01_8.0

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DESIGNED BY: <u>T. WALKER</u>		DRAWN BY: <u>T. BRADLEY</u>	
CHECKED BY: <u>J. GREENWOOD</u>			
REVISIONS			
REV	DESCRIPTION	DATE	BY APP

Clackamas Broadband eXchange

information at the speed of light

LAKE OSWEGO SCHOOL DISTRICT EXPANSION

SEGMENT 8 - OAK CREEK ELEMENTARY SCHOOL

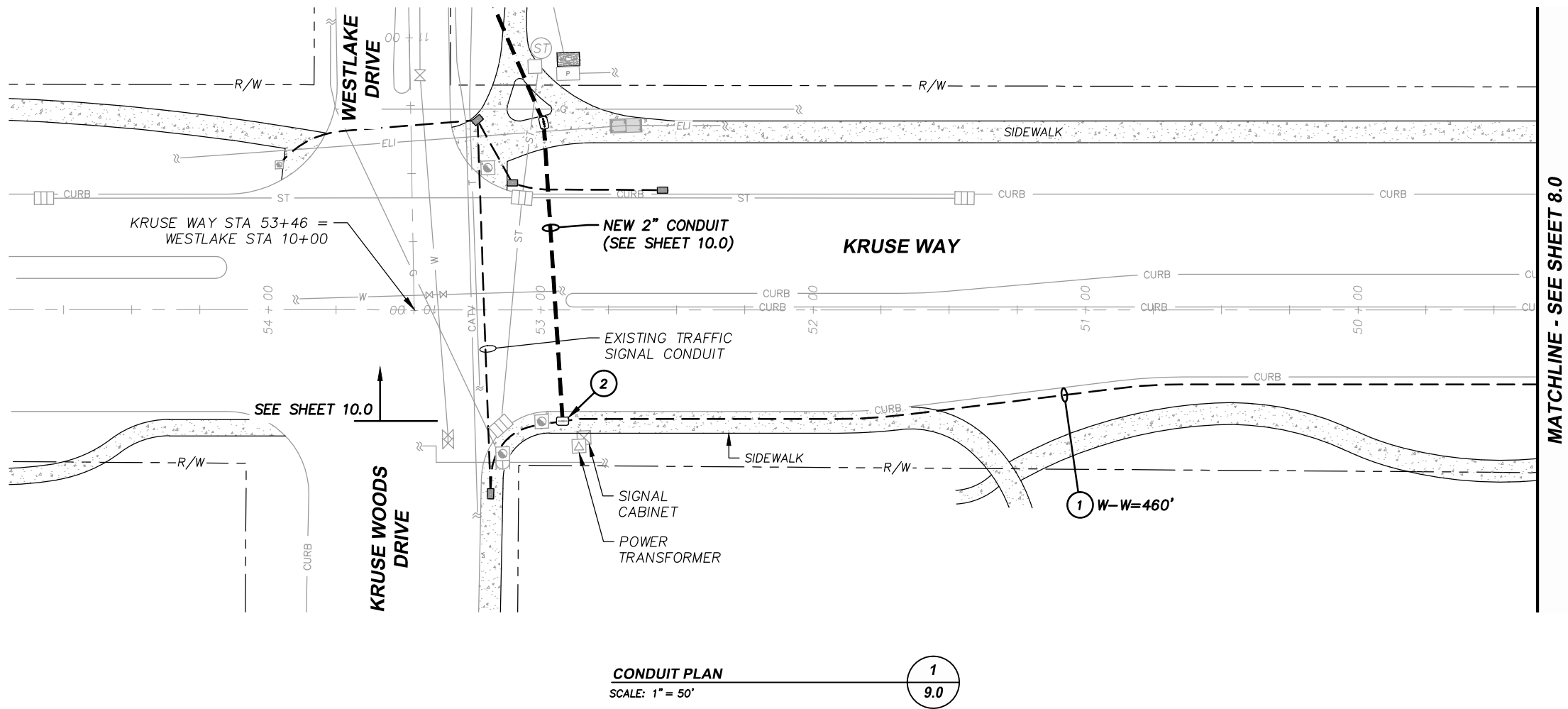
CONDUIT PLAN

CITY: LAKE OSWEGO – TOWNSHIP 02 SOUTH RANGE 01 EAST SECTION: 6,7,8

COUNTY: CLACKAMAS CO., OREGON

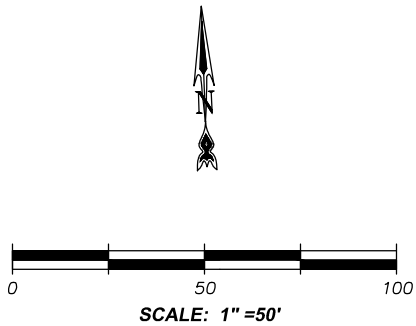
PLOT DATE: 3/17/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG – TAB_SHEET # LAKEO-SB-CP00.DWG – CP01_8.0	SHEET 8.0
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CONSTRUCTION SET



CONSTRUCTION NOTES

- 1 EXISTING CITY OF LAKE OSWEGO TRAFFIC SIGNAL CONDUIT.
PL ONE (1) NEW 2-WAY 18/14MM MICRODUCT W/ RIPCORD AND LOCATE WIRE THROUGH EXISTING CONDUIT.
PL ONE NEW 144F MICRO CABLE THROUGH ONE VACANT MICRO DUCT.
CONTRACTOR TO ROD AND PROOF CONDUIT PRIOR TO INSTALLATION
- 2 EXISTING CITY OF LAKE OSWEGO TRAFFIC SIGNAL JUNCTION BOX.
REMOVE AND REPLACE WITH NEW 24X36X36 OPEN BOTTOM HANDHOLE AS REQUIRED.
PL NEW GROUND ROD, LOCATE WIRE ACCESS POINT AND GROUND WIRE IN VAULT.
PL NEW #6 AWG TAIL BETWEEN GROUND ROD AND TEST STATION GROUND LUG.
BOND #12 AND #14 AWG LOCATE WIRE TO ACCESS POINT.
LEAVE 100' SLACK STORAGE IN NEW 144F MICRO CABLE COILED IN VAULT. (KRUSE WAY BACKBONE)
LEAVE 100' SLACK STORAGE IN NEW 24F CABLE COILED IN VAULT. (OAK CREEK LATERAL)



Plot Date: 17 Mar 2017, 9:21am By User: Tom
Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 8\LAKEO-S8-CP00.DWG Layout (If Any): CP01_9.0

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DESIGNED BY: <u>T. WALKER</u>		DRAWN BY: <u>T. BRADLEY</u>	
CHECKED BY: <u>J. GREENWOOD</u>			
REVISIONS			
REV	DESCRIPTION	DATE	BY APP

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information at the speed of light

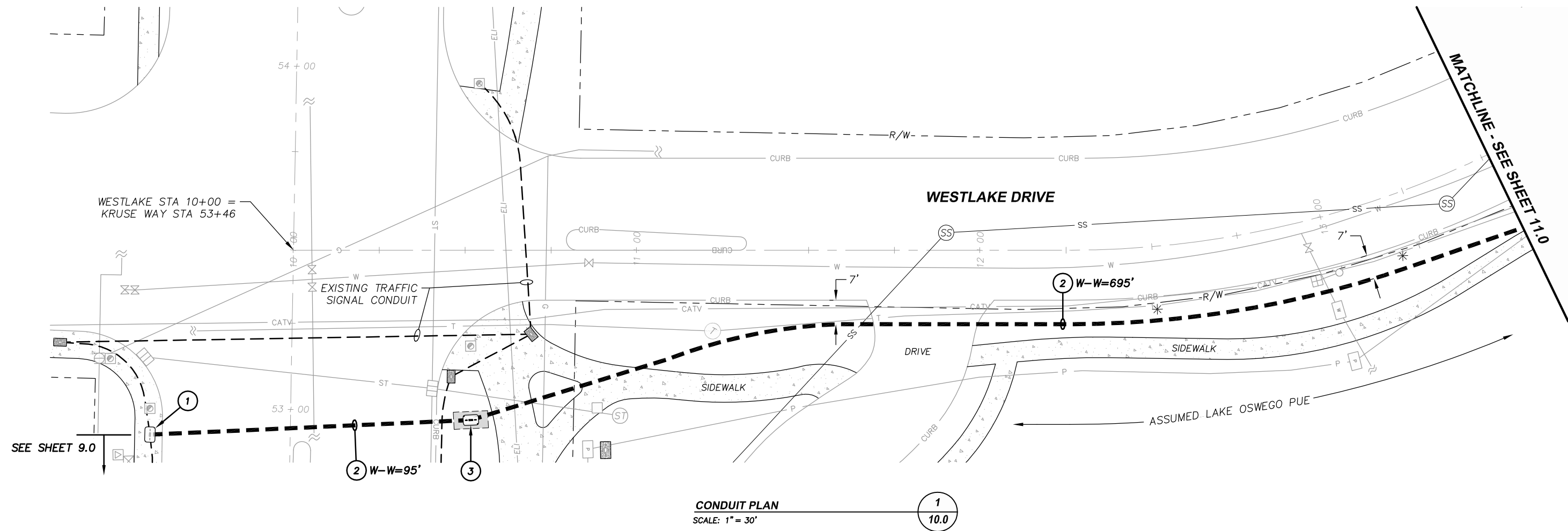
LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 8 - OAK CREEK ELEMENTARY SCHOOL

CONDUIT PLAN

CITY: LAKE OSWEGO – TOWNSHIP 02 SOUTH RANGE 01 EAST SECTION: 6,7,8COUNTY: CLACKAMAS CO., OREGON

PLOT DATE: 3/17/2017SCALE: AS SHOWNPROJECT NAME-FILENAME.DWG – TAB_SHEET #LAKEO-S8-CP00.DWG – CP01_9.0SHEET 9.0

CONSTRUCTION SET



CONSTRUCTION NOTES

- 1 EXISTING CITY OF LAKE OSWEGO TRAFFIC SIGNAL JUNCTION BOX. SEE SHEET 9.0 FOR DETAIL.
- 2 PL ONE (1) NEW 2" SCH 40 PVC OR SDR 11 HDPE CONDUIT. PL NEW 24F CABLE AND #12 AWG LOCATE WIRE THROUGH NEW CONDUIT.
- 3 PL NEW 24X36X36 OPEN BOTTOM UTILITY VAULT - PROPOSED BORE / RECEIVE PIT PL NEW GROUND ROD, LOCATE WIRE ACCESS POINT AND GROUND WIRE IN VAULT. PL NEW #6 AWG TAIL BETWEEN GROUND ROD AND TEST STATION GROUND LUG. BOND #12 AWG LOCATE WIRE TO ACCESS POINT. LEAVE 100' SLACK STORAGE IN NEW 24F CABLE COILED IN VAULT. RESTORE AREA AND LANDSCAPE TO "LIKE NEW" CONDITIONS.

DESIGNED BY: T. WALKER
CHECKED BY: J. GREENWOOD DRAWN BY: T. BRADLEY

REVISIONS				
REV	DESCRIPTION	DATE	BY	APP

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information at the speed of light

LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 8 - OAK CREEK ELEMENTARY SCHOOL

CONDUIT PLAN

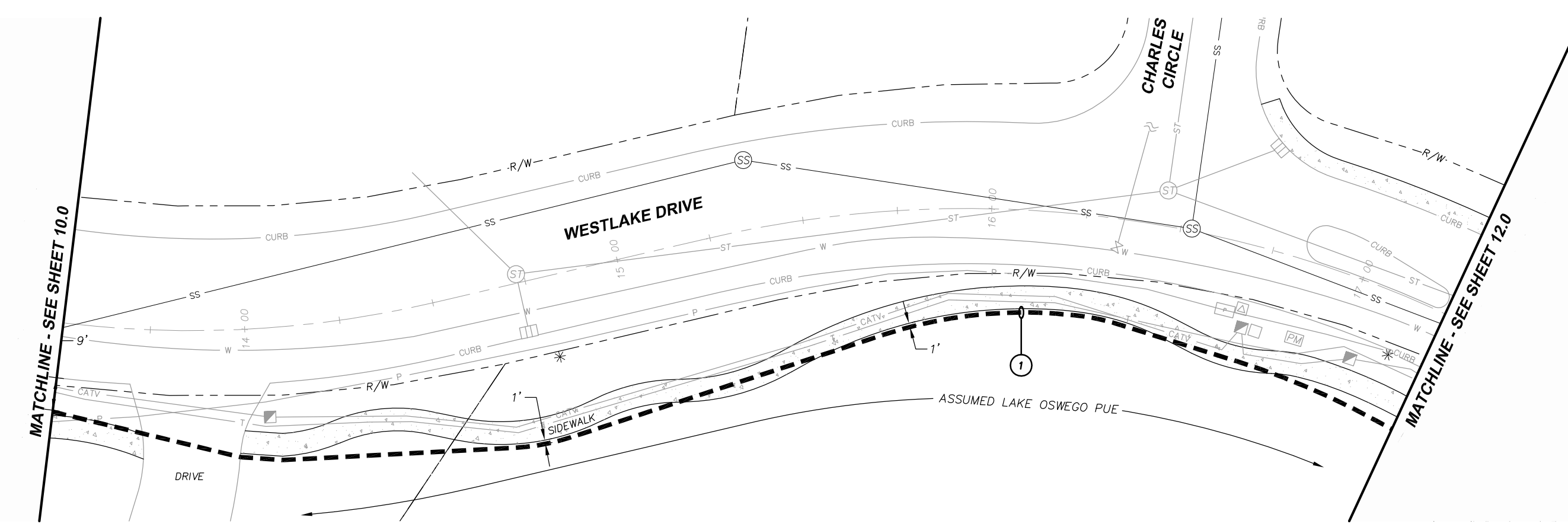
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PLOT DATE: 3/17/2017 SCALE: AS SHOWN PROJECT NAME-FILENAME.DWG - TAB_SHEET # SHEET 10.0
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Plot Date: 17 Mar 2017, 2:26pm By User: Tom
Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 8\LAKEO-S8-CP00.DWG Layout (If Any): CP01_10.0

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Main Office:
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CONSTRUCTION SET

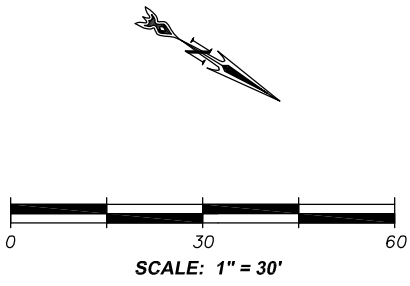


CONDUIT PLAN
SCALE: 1" = 30'

1
11.0

CONSTRUCTION NOTES

- 1 PL ONE (1) NEW 2" SCH 40 PVC OR SDR 11 HDPE CONDUIT.
PL NEW 24F CABLE AND #12 AWG LOCATE WIRE THROUGH NEW CONDUIT.



Plot Date: 17 Mar 2017, 2:28pm By User: Tom
Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 8\LAKEO-S8-CP00.DWG Layout (If Any): CP01_11.0

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Main Office:
503.343.4134

DESIGNED BY: T. WALKER
CHECKED BY: J. GREENWOOD
DRAWN BY: T. BRADLEY

REV	DESCRIPTION	DATE	BY	APP

Clackamas Broadband eXchange

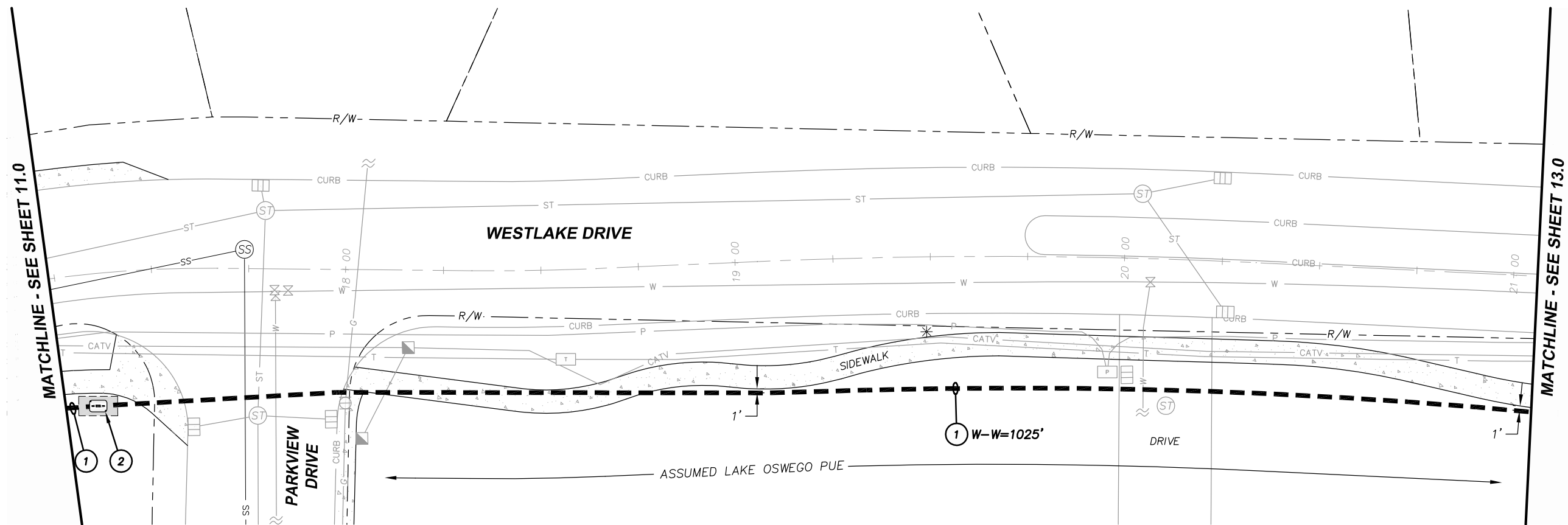
information at the speed of light

**LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 8 - OAK CREEK ELEMENTARY SCHOOL**

CONDUIT PLAN

CITY: LAKE OSWEGO - TOWNSHIP 02 SOUTH RANGE 01 EAST SECTION: 6,7,8	COUNTY: CLACKAMAS CO., OREGON
PLOT DATE: 3/17/2017	SCALE: AS SHOWN
PROJECT NAME-FILENAME.DWG - TAB_SHEET # LAKEO-S8-CP00.DWG - CP01_11.0	SHEET 11.0

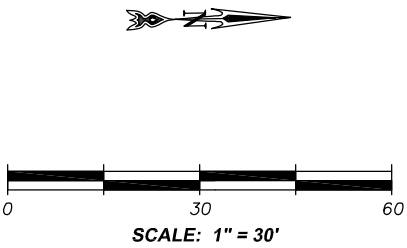
CONSTRUCTION SET



CONDUIT PLAN
SCALE: 1" = 30'

CONSTRUCTION NOTES

- 1 PL ONE (1) NEW 2" SCH 40 PVC OR SDR 11 HDPE CONDUIT.
PL NEW 24F CABLE AND #12 AWG LOCATE WIRE THROUGH NEW CONDUIT.
- 2 PL NEW 24X36X36 OPEN BOTTOM UTILITY VAULT – PROPOSED BORE / RECEIVE PIT
PL NEW GROUND ROD, LOCATE WIRE ACCESS POINT AND GROUND WIRE IN VAULT.
PL NEW #6 AWG TAIL BETWEEN GROUND ROD AND TEST STATION GROUND LUG.
BOND #12 AWG LOCATE WIRE TO ACCESS POINT.
LEAVE 100' SLACK STORAGE IN NEW 24F CABLE COILED IN VAULT.
RESTORE AREA AND LANDSCAPE TO "LIKE NEW" CONDITIONS



Plot Date: 17 Mar 2017, 2:29pm By User: Tom
Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 8\LAKEO-S8-CP00.DWG Layout (If Any): CP01_12.0

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DESIGNED BY:	T. WALKER	DRAWN BY:	T. BRADLEY
CHECKED BY:	J. GREENWOOD		
REVISIONS			
REV	DESCRIPTION	DATE	BY APP

Clackamas Broadband eXchange

information at the speed of light

LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 8 - OAK CREEK ELEMENTARY SCHOOL

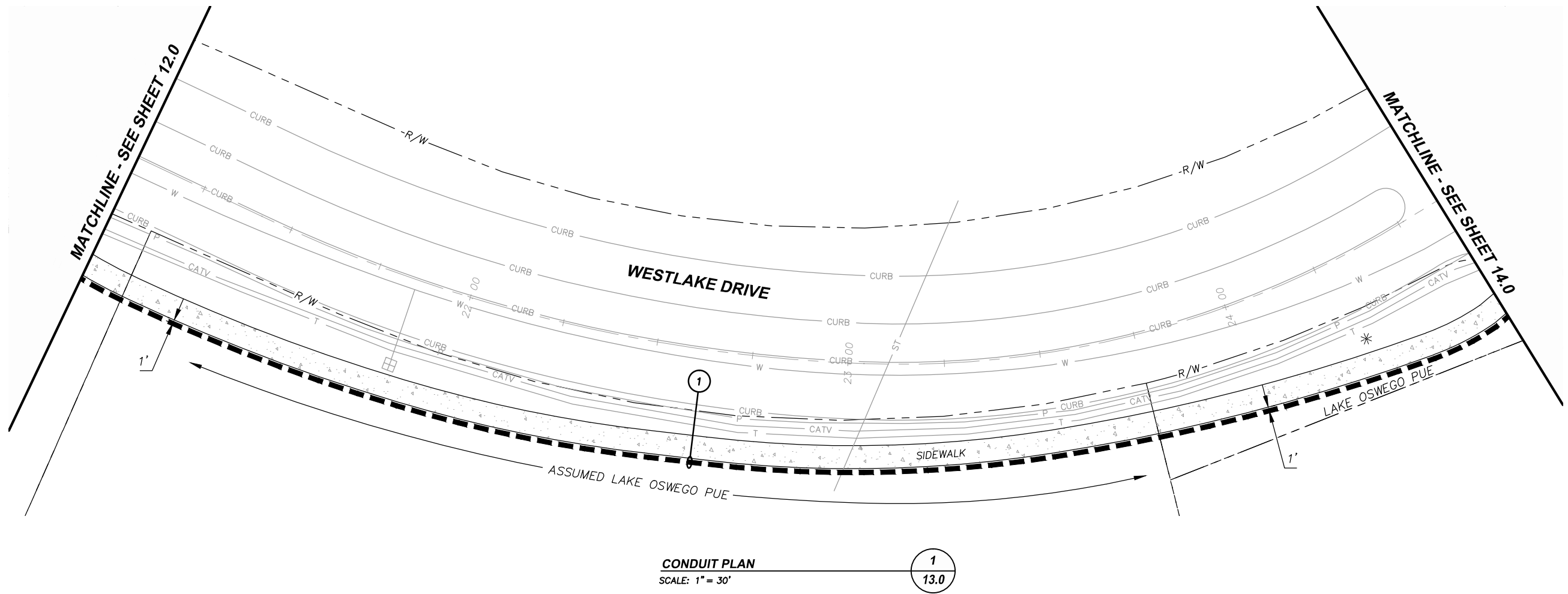
CONDUIT PLAN

CITY: LAKE OSWEGO – TOWNSHIP 02 SOUTH RANGE 01 EAST SECTION: 6,7,8 COUNTY: CLACKAMAS CO., OREGON

PLOT DATE: 3/17/2017 SCALE: AS SHOWN PROJECT NAME-FILENAME.DWG – TAB_SHEET # SHEET 12.0

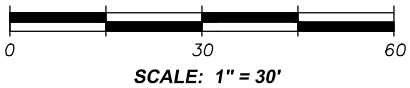
LAKEO-S8-CP00.DWG – CP01_12.0

CONSTRUCTION SET



CONSTRUCTION NOTES

- 1 PL ONE (1) NEW 2" SCH 40 PVC OR SDR 11 HDPE CONDUIT.
PL NEW 24F CABLE AND #12 AWG LOCATE WIRE THROUGH NEW CONDUIT.



Plot Date: 17 Mar 2017, 9:21am By User: Tom
Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 8\LAKEO-S8-CP00.DWG Layout (If Any): CP01_13.0

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DESIGNED BY: <u>T. WALKER</u>				
CHECKED BY: <u>J. GREENWOOD</u>		DRAWN BY: <u>T. BRADLEY</u>		
REVISIONS				
REV	DESCRIPTION	DATE	BY	APP

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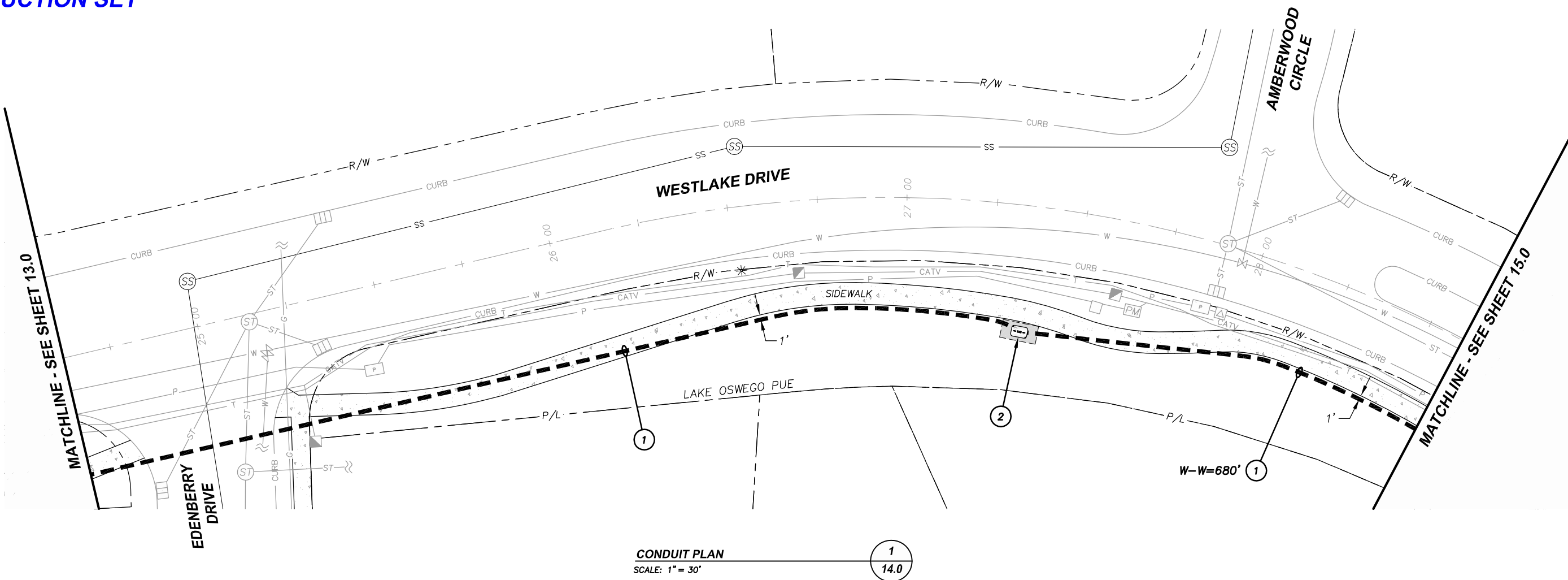
information at the speed of light

LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 8 - OAK CREEK ELEMENTARY SCHOOL

CONDUIT PLAN

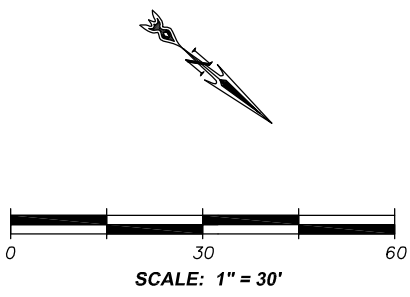
CITY: LAKE OSWEGO — TOWNSHIP 02 SOUTH RANGE 01 EAST SECTION: 6,7,8 COUNTY: CLACKAMAS CO., OREGON

PLOT DATE: 3/17/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG — TAB_SHEET # LAKEO-S8-CP00.DWG — CP01_13.0	SHEET 13.0
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CONSTRUCTION NOTES

- 1 PL ONE (1) NEW 2" SCH 40 PVC OR SDR 11 HDPE CONDUIT.
PL NEW 24F CABLE AND #12 AWG LOCATE WIRE THROUGH NEW CONDUIT.
- 2 PL NEW 24X36X36 OPEN BOTTOM UTILITY VAULT - PROPOSED BORE / RECEIVE PIT
PL NEW GROUND ROD, LOCATE WIRE ACCESS POINT AND GROUND WIRE IN VAULT.
PL NEW #6 AWG TAIL BETWEEN GROUND ROD AND TEST STATION GROUND LUG.
BOND #12 AWG LOCATE WIRE TO ACCESS POINT.
LEAVE 100' SLACK STORAGE IN NEW 24F CABLE COILED IN VAULT.
RESTORE AREA AND LANDSCAPE TO "LIKE NEW" CONDITIONS



Plot Date: 17 Mar 2017, 2:31pm By User: Tom
Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 8\LAKEO-S8-CP00.DWG Layout (If Any): CP01_14.0

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CHECKED BY: <u>J. GREENWOOD</u>		DRAWN BY: <u>T. BRADLEY</u>		
REVISIONS				
REV	DESCRIPTION	DATE	BY	APP

Clackamas Broadband eXchange

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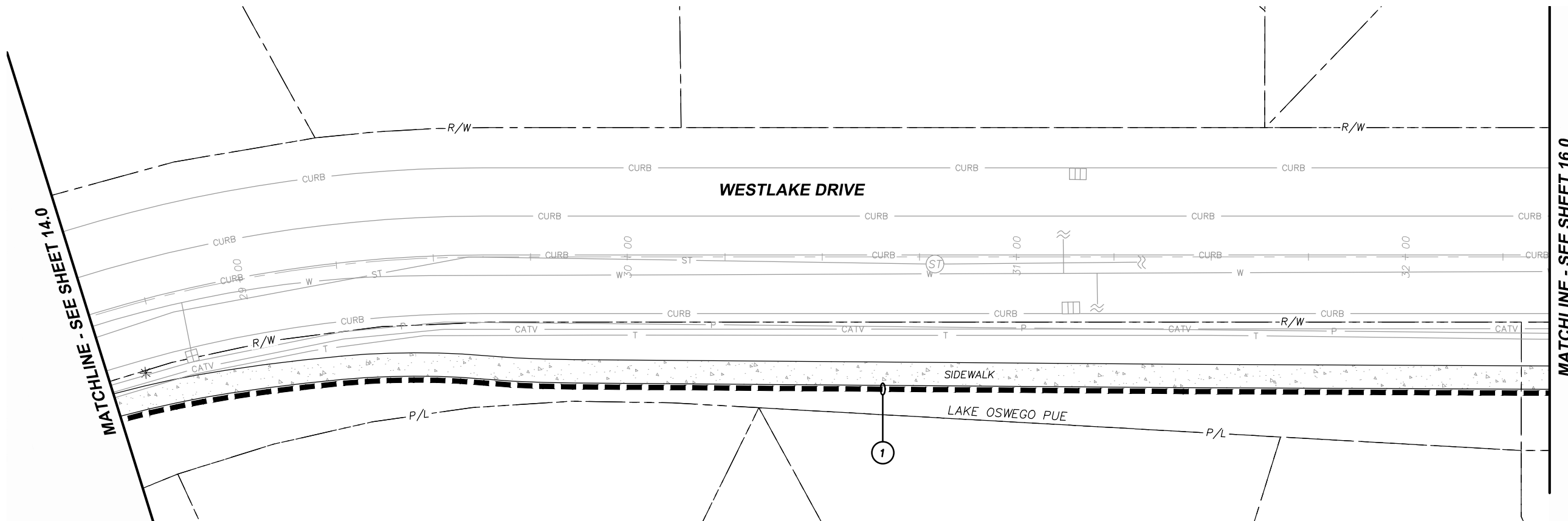
LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 8 - OAK CREEK ELEMENTARY SCHOOL

CONDUIT PLAN

CITY: LAKE OSWEGO - TOWNSHIP 02 SOUTH RANGE 01 EAST SECTION: 6,7,8 COUNTY: CLACKAMAS CO., OREGON

PLOT DATE: 3/17/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG - TAB_SHEET # LAKEO-S8-CP00.DWG - CP01_14.0	SHEET 14.0
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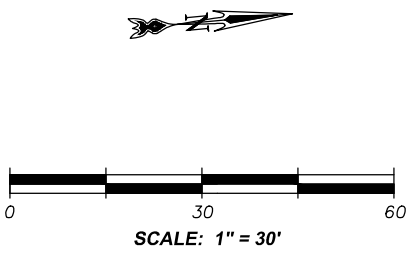
CONSTRUCTION SET



CONDUIT PLAN
SCALE: 1" = 30'

CONSTRUCTION NOTES

- 1 PL ONE (1) NEW 2" SCH 40 PVC OR SDR 11 HDPE CONDUIT.
PL NEW 24F CABLE AND #12 AWG LOCATE WIRE THROUGH NEW CONDUIT.



Plot Date: 17 Mar 2017, 9:22am By User: Tom
Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 8\LAKEO-S8-CP00.DWG Layout (If Any): CP01_15.0

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DESIGNED BY: <u>T. WALKER</u>				
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REVISIONS				
REV	DESCRIPTION	DATE	BY	APP

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information at the speed of light

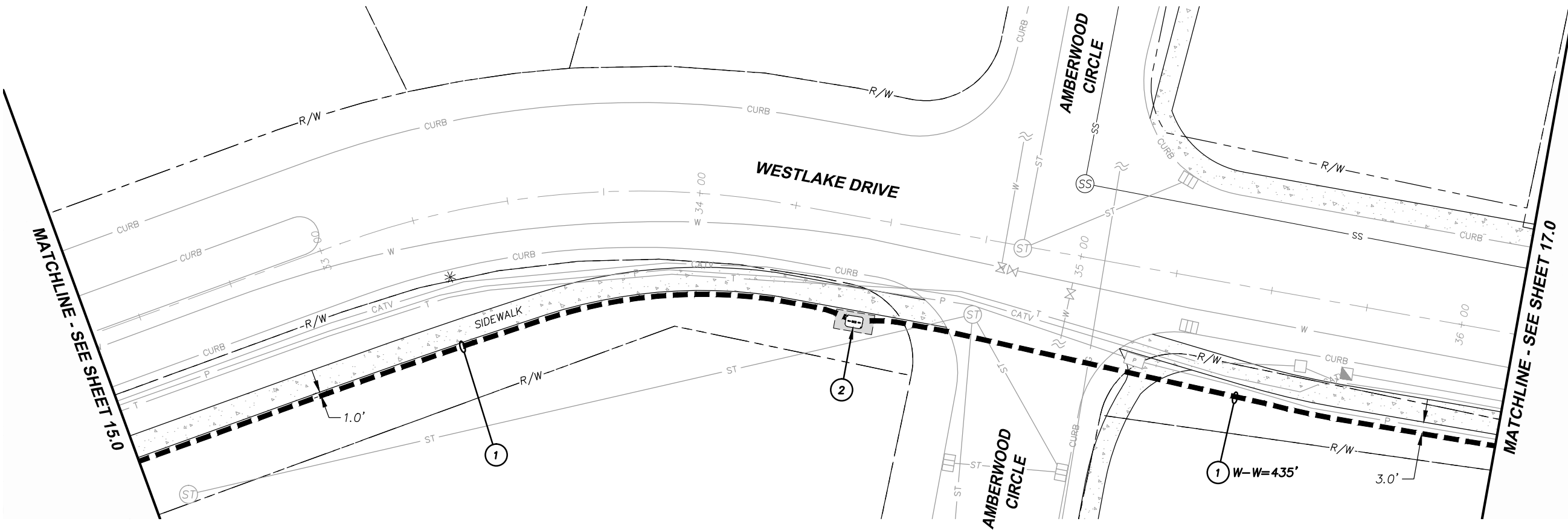
LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 8 - OAK CREEK ELEMENTARY SCHOOL

CONDUIT PLAN

CITY: LAKE OSWEGO – TOWNSHIP 02 SOUTH RANGE 01 EAST SECTION: 6,7,8 COUNTY: CLACKAMAS CO., OREGON

PLOT DATE: 3/17/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG – TAB_SHEET # LAKEO-S8-CP00.DWG – CP01_15.0	SHEET 15.0
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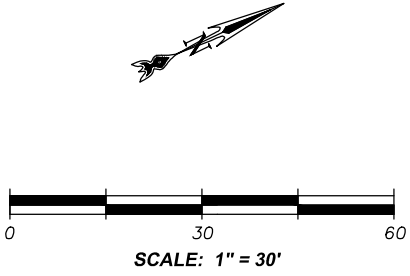
CONSTRUCTION SET



CONDUIT PLAN
SCALE: 1" = 30'

CONSTRUCTION NOTES

- 1 PL ONE (1) NEW 2" SCH 40 PVC OR SDR 11 HDPE CONDUIT.
PL NEW 24F CABLE AND #12 AWG LOCATE WIRE THROUGH NEW CONDUIT.
- 2 PL NEW 24X36X36 OPEN BOTTOM UTILITY VAULT – PROPOSED BORE / RECEIVE PIT
PL NEW GROUND ROD, LOCATE WIRE ACCESS POINT AND GROUND WIRE IN VAULT.
PL NEW #6 AWG TAIL BETWEEN GROUND ROD AND TEST STATION GROUND LUG.
BOND #12 AWG LOCATE WIRE TO ACCESS POINT.
LEAVE 100' SLACK STORAGE IN NEW 24F CABLE COILED IN VAULT.
RESTORE AREA AND LANDSCAPE TO "LIKE NEW" CONDITIONS



Plot Date: 17 Mar 2017, 9:22am By User: Tom
Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 8\LAKEO-S8-CP00.DWG Layout (If Any): CP01_16.0

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DESIGNED BY: <u>T. WALKER</u>		DRAWN BY: <u>T. BRADLEY</u>	
CHECKED BY: <u>J. GREENWOOD</u>			
REVISIONS			
REV	DESCRIPTION	DATE	BY APP

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information at the speed of light

LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 8 - OAK CREEK ELEMENTARY SCHOOL
CONDUIT PLAN

CITY: LAKE OSWEGO – TOWNSHIP 02 SOUTH RANGE 01 EAST SECTION: 6,7,8

COUNTY: CLACKAMAS CO., OREGON

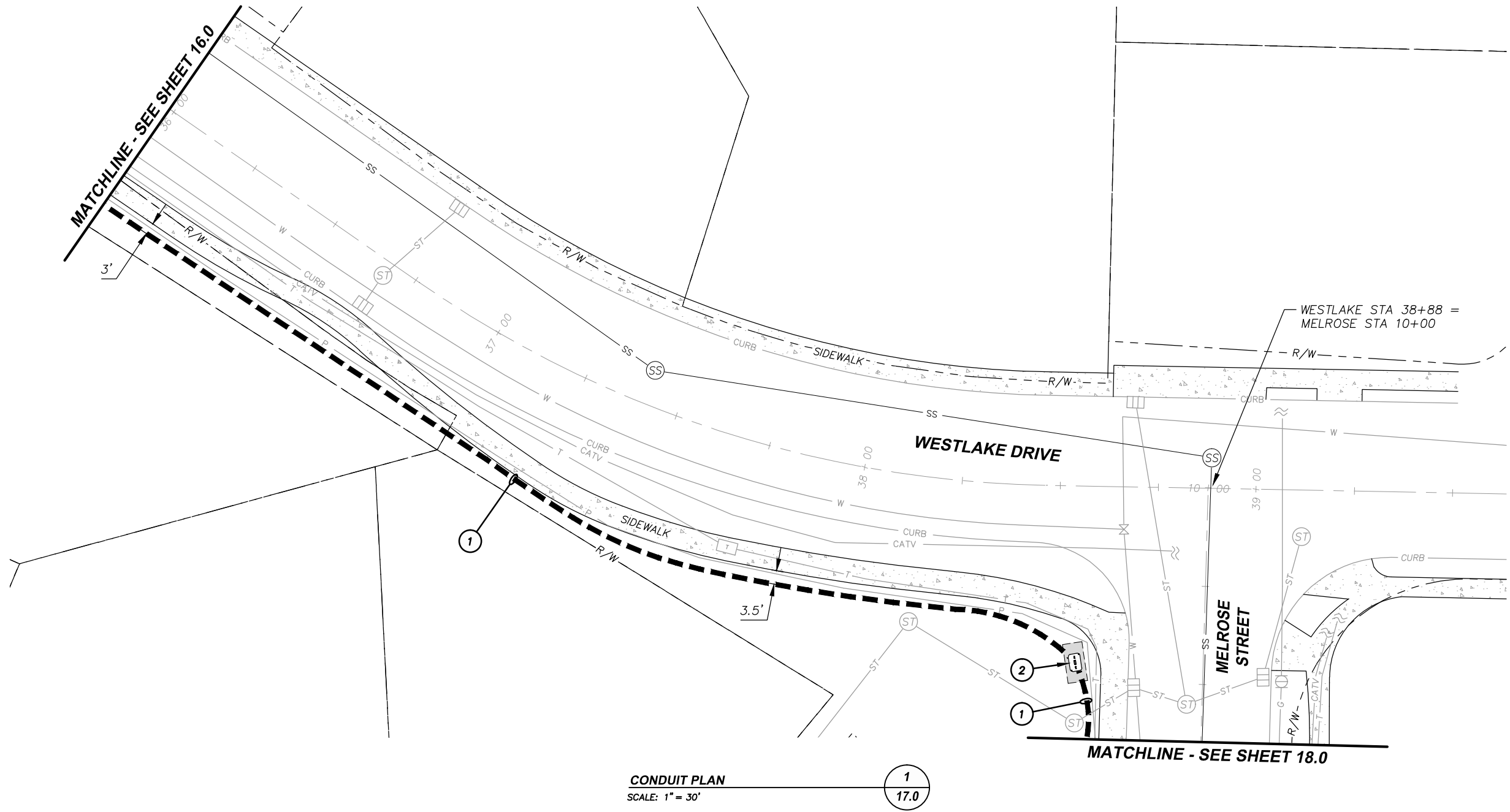
PLOT DATE: 3/17/2017

SCALE: AS SHOWN

PROJECT NAME-FILENAME.DWG – TAB_SHEET #
LAKEO-S8-CP00.DWG – CP01_16.0

SHEET
16.0

CONSTRUCTION SET



CONDUIT PLAN
SCALE: 1" = 30'

CONSTRUCTION NOTES

- 1 PL ONE (1) NEW 2" SCH 40 PVC OR SDR 11 HDPE CONDUIT.
PL NEW 24F CABLE AND #12 AWG LOCATE WIRE THROUGH NEW CONDUIT.
- 2 PL NEW 24X36X36 OPEN BOTTOM UTILITY VAULT – PROPOSED BORE / RECEIVE PIT
PL NEW GROUND ROD, LOCATE WIRE ACCESS POINT AND GROUND WIRE IN VAULT.
PL NEW #6 AWG TAIL BETWEEN GROUND ROD AND TEST STATION GROUND LUG.
BOND #12 AWG LOCATE WIRE TO ACCESS POINT.
LEAVE 100' SLACK STORAGE IN NEW 24F CABLE COILED IN VAULT.
RESTORE AREA AND LANDSCAPE TO "LIKE NEW" CONDITIONS

Plot Date: 17 Mar 2017, 9:22am By User: Tom
Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 8\LAKEO-SB-CP00.DWG Layout (If Any): CP01_17.0

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Main Office:
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DESIGNED BY: T. WALKER

CHECKED BY: J. GREENWOOD

DRAWN BY: T. BRADLEY

REVISIONS				
REV	DESCRIPTION	DATE	BY	APP

Clackamas Broadband eXchange

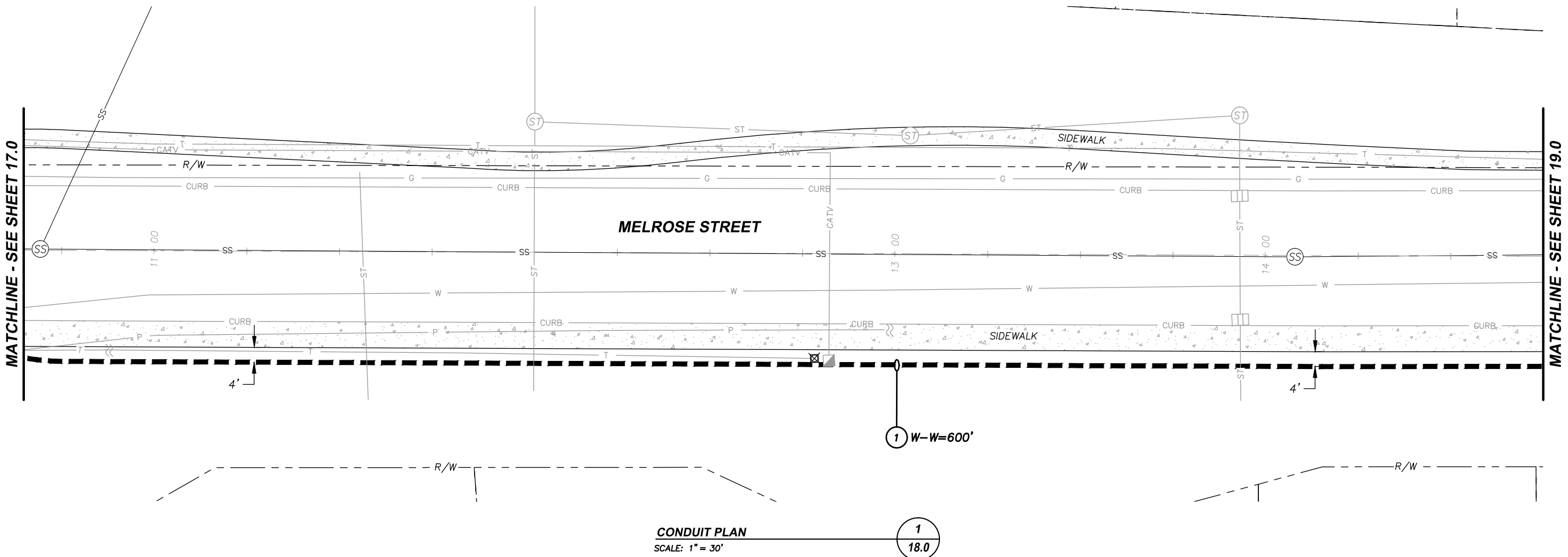
information at the speed of light

LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 8 - OAK CREEK ELEMENTARY SCHOOL

CONDUIT PLAN

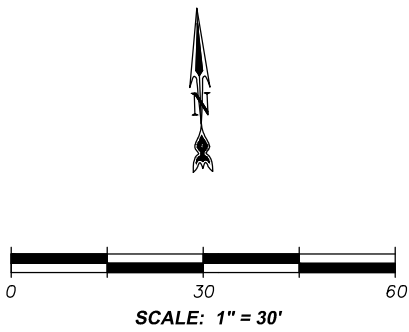
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PLOT DATE: 3/17/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG – TAB_SHEET # LAKEO-SB-CP00.DWG – CP01_17.0	SHEET 17.0

CONSTRUCTION SET



CONSTRUCTION NOTES

- 1 PL ONE (1) NEW 2" SCH 40 PVC OR SDR 11 HDPE CONDUIT.
PL NEW 24F CABLE AND #12 AWG LOCATE WIRE THROUGH NEW CONDUIT.



Plot Date: 17 Mar 2017, 9:22am By User: Tom
Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 8\LAKEO-S8-CP00.DWG Layout (If Any): CP01_18.0

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CHECKED BY: <u>J. GREENWOOD</u>			
REVISIONS			
REV	DESCRIPTION	DATE	BY APP

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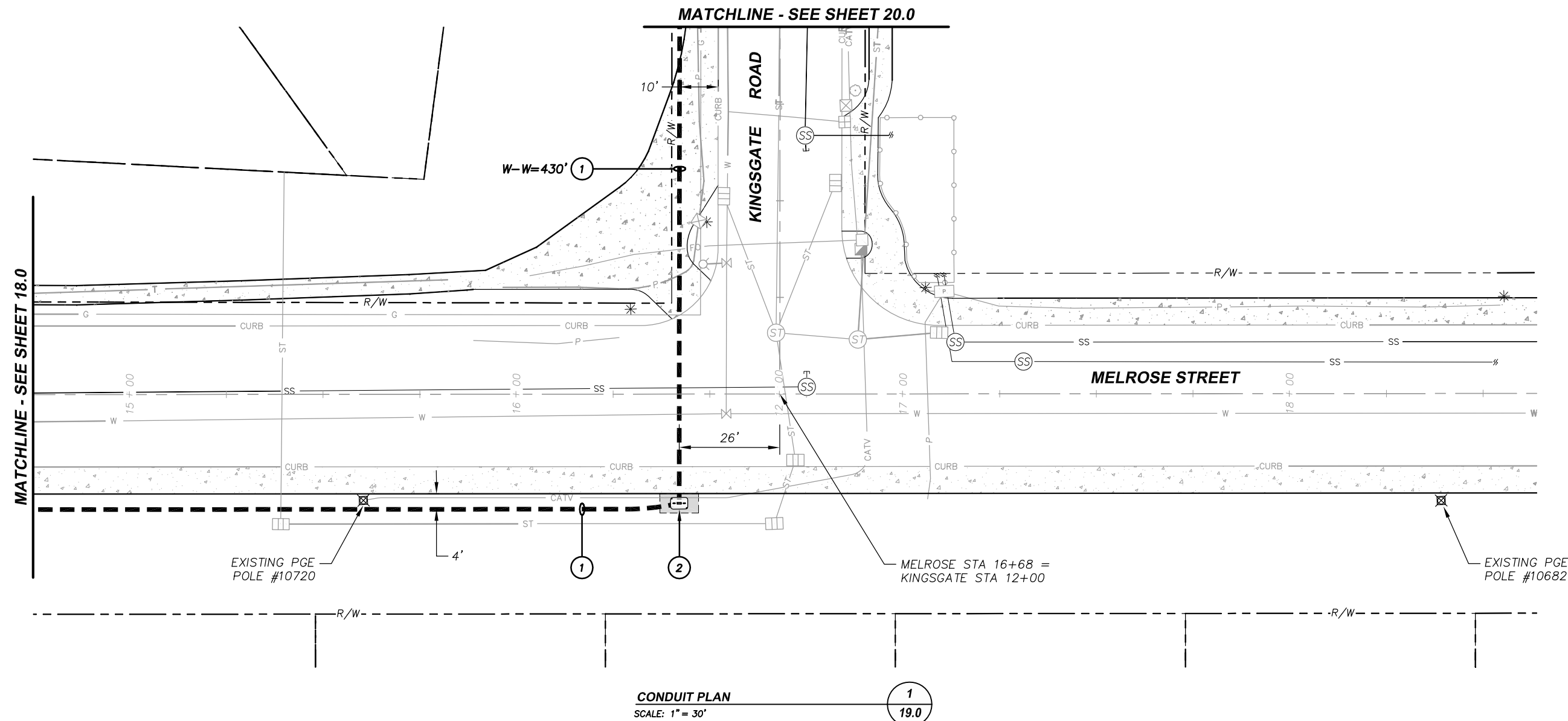
LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 8 - OAK CREEK ELEMENTARY SCHOOL

CONDUIT PLAN

CITY: LAKE OSWEGO – TOWNSHIP 02 SOUTH RANGE 01 EAST SECTION: 6,7,8 COUNTY: CLACKAMAS CO., OREGON

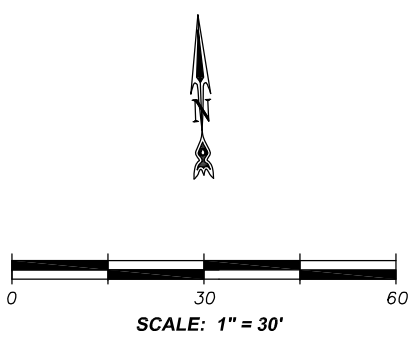
PLOT DATE: 3/17/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG – TAB_SHEET # LAKEO-S8-CP00.DWG – CP01_18.0	SHEET 18.0
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CONSTRUCTION SET



CONSTRUCTION NOTES

- 1 PL ONE (1) NEW 2" SCH 40 PVC OR SDR 11 HDPE CONDUIT.
PL NEW 24F CABLE AND #12 AWG LOCATE WIRE THROUGH NEW CONDUIT.
- 2 PL NEW 24X36X36 OPEN BOTTOM UTILITY VAULT - PROPOSED BORE / RECEIVE PIT
PL NEW GROUND ROD, LOCATE WIRE ACCESS POINT AND GROUND WIRE IN VAULT.
PL NEW #6 AWG TAIL BETWEEN GROUND ROD AND TEST STATION GROUND LUG.
BOND #12 AWG LOCATE WIRE TO ACCESS POINT.
LEAVE 100' SLACK STORAGE IN NEW 24F CABLE COILED IN VAULT.
RESTORE AREA AND LANDSCAPE TO "LIKE NEW" CONDITIONS



Plot Date: 17 Mar 2017, 9:33am By User: Tom
Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 8\LAKEO-S8-CP00.DWG Layout (If Any): CP01_19.0

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CHECKED BY:	J. GREENWOOD		
REVISIONS			
REV	DESCRIPTION	DATE	BY APP

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LAKE OSWEGO SCHOOL DISTRICT EXPANSION

SEGMENT 8 - OAK CREEK ELEMENTARY SCHOOL

CONDUIT PLAN

CITY: LAKE OSWEGO - TOWNSHIP 02 SOUTH RANGE 01 EAST SECTION: 6,7,8

COUNTY: CLACKAMAS CO., OREGON

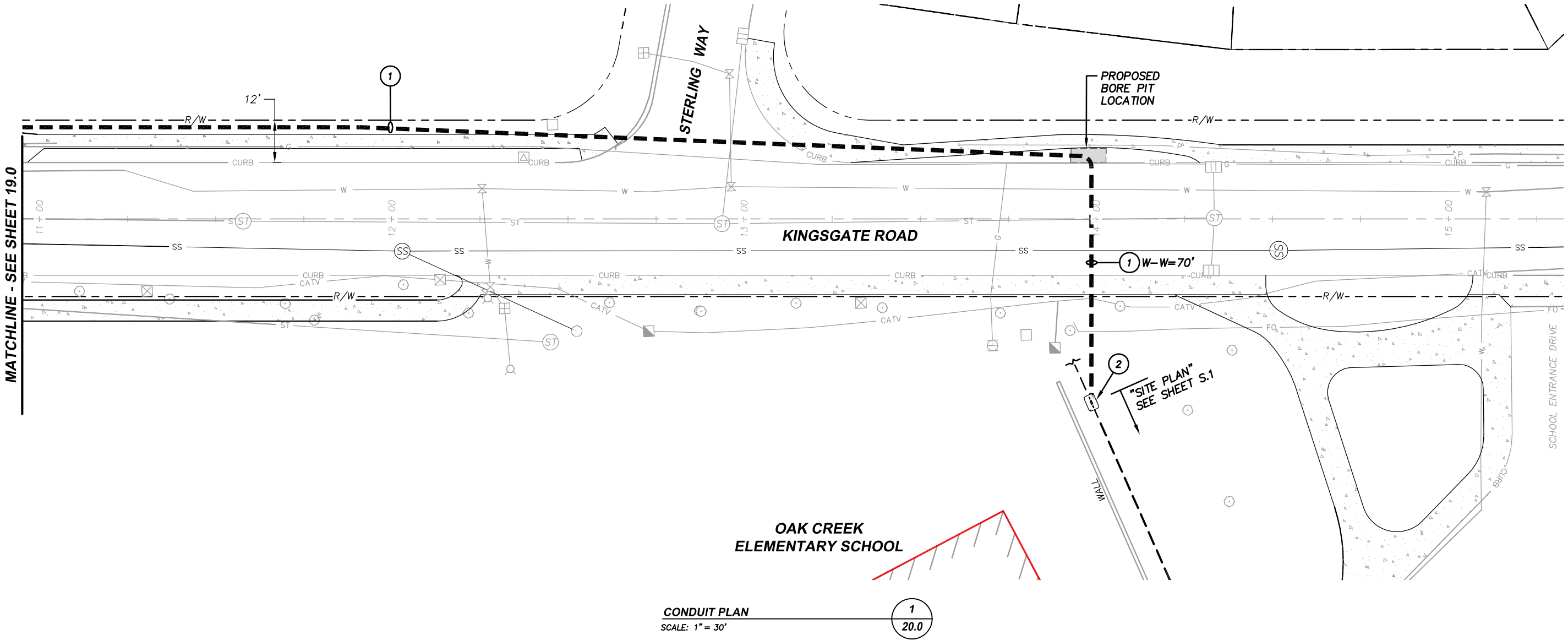
PLOT DATE: 3/17/2017

SCALE: AS SHOWN

PROJECT NAME-FILENAME.DWG - TAB_SHEET #
LAKEO-S8-CP00.DWG - CP01_19.0

SHEET
19.0

CONSTRUCTION SET



CONDUIT PLAN
SCALE: 1" = 30'

CONSTRUCTION NOTES

- 1 PL ONE (1) NEW 2" SCH 40 PVC OR SDR 11 HDPE CONDUIT.
PL NEW 24F CABLE AND #12 AWG LOCATE WIRE THROUGH NEW CONDUIT.
- 2 PL NEW 24X36X36 OPEN BOTTOM UTILITY VAULT WITH HEAVY DUTY TWO BOLT LID – INTERCEPT VAULT.
INTERCEPT EXISTING 4" PVC BUILDING ENTRY CONDUIT.
PL NEW GROUND ROD, LOCATE WIRE ACCESS POINT AND GROUND WIRE IN VAULT.
PL NEW #6 AWG TAIL BETWEEN GROUND ROD AND TEST STATION GROUND LUG.
BOND #12 AWG LOCATE WIRE TO ACCESS POINT.
LEAVE 100' SLACK STORAGE IN NEW 24F CABLE COILED IN VAULT.
RESTORE AREA AND LANDSCAPE TO "LIKE NEW" CONDITIONS.
CAUTION EXISTING TELCO CABLE IN EXISTING CONDUIT

Plot Date: 17 Mar 2017, 2:33pm By User: Tom
Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 8\LAKEO-S8-CP00.DWG Layout (If Any): CP01_20.0

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DESIGNED BY: T. WALKER

CHECKED BY: J. GREENWOOD

DRAWN BY: T. BRADLEY

REVISIONS				
REV	DESCRIPTION	DATE	BY	APP

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information at the speed of light

LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 8 - OAK CREEK ELEMENTARY SCHOOL

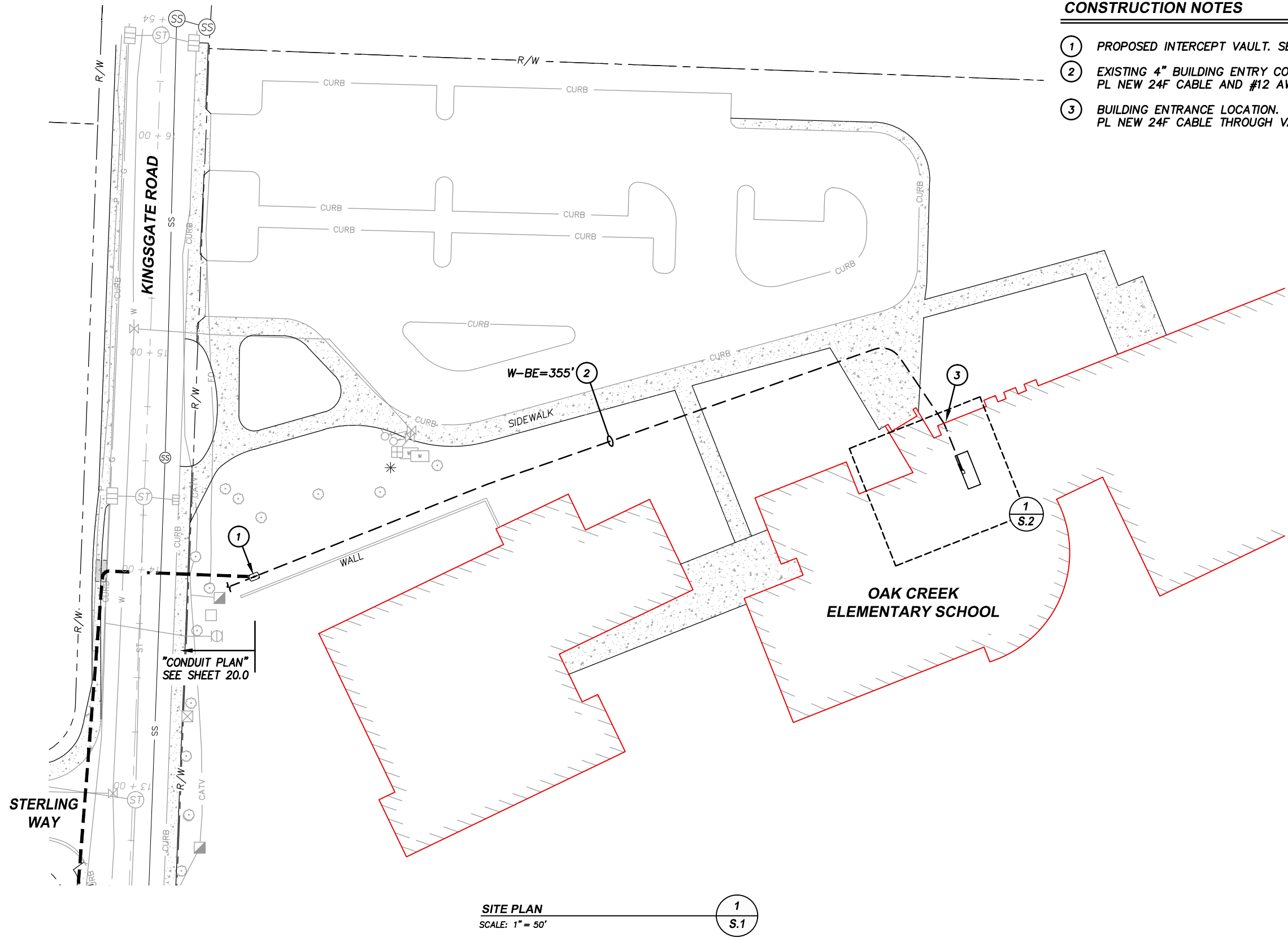
CONDUIT PLAN

CITY: LAKE OSWEGO – TOWNSHIP 02 SOUTH RANGE 01 EAST SECTION: 6,7,8 COUNTY: CLACKAMAS CO., OREGON

PLOT DATE: 3/17/2017 SCALE: AS SHOWN PROJECT NAME-FILENAME.DWG – TAB_SHEET # SHEET 20.0

LAKEO-S8-CP00.DWG – CP01_20.0

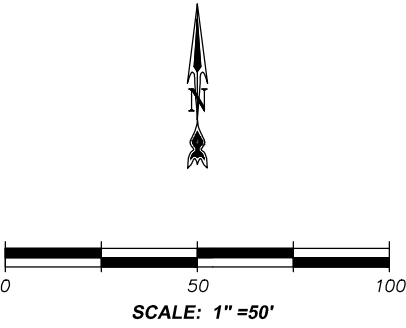
CONSTRUCTION SET



CONSTRUCTION NOTES

- 1 PROPOSED INTERCEPT VAULT. SEE SHEET 20.0 FOR DETAIL.
- 2 EXISTING 4" BUILDING ENTRY CONDUIT. PL NEW 24F CABLE AND #12 AWG LOCATE WIRE IN EXISTING VACANT CONDUIT.
- 3 BUILDING ENTRANCE LOCATION. PL NEW 24F CABLE THROUGH VACANT BUILDING ENTRY CONDUIT.

SITE PLAN
SCALE: 1" = 50'



Plot Date: 17 Mar 2017, 9:23am By User: Tom
Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 8\LAKEO-S8-CP00.DWG Layout (If Any): SP01_S.1

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CHECKED BY: <u>J. GREENWOOD</u>				
REVISIONS				
REV	DESCRIPTION	DATE	BY	APP

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LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 8 - OAK CREEK ELEMENTARY SCHOOL
SITE PLAN

CITY: LAKE OSWEGO – TOWNSHIP 02 SOUTH RANGE 01 EAST SECTION: 6,7,8

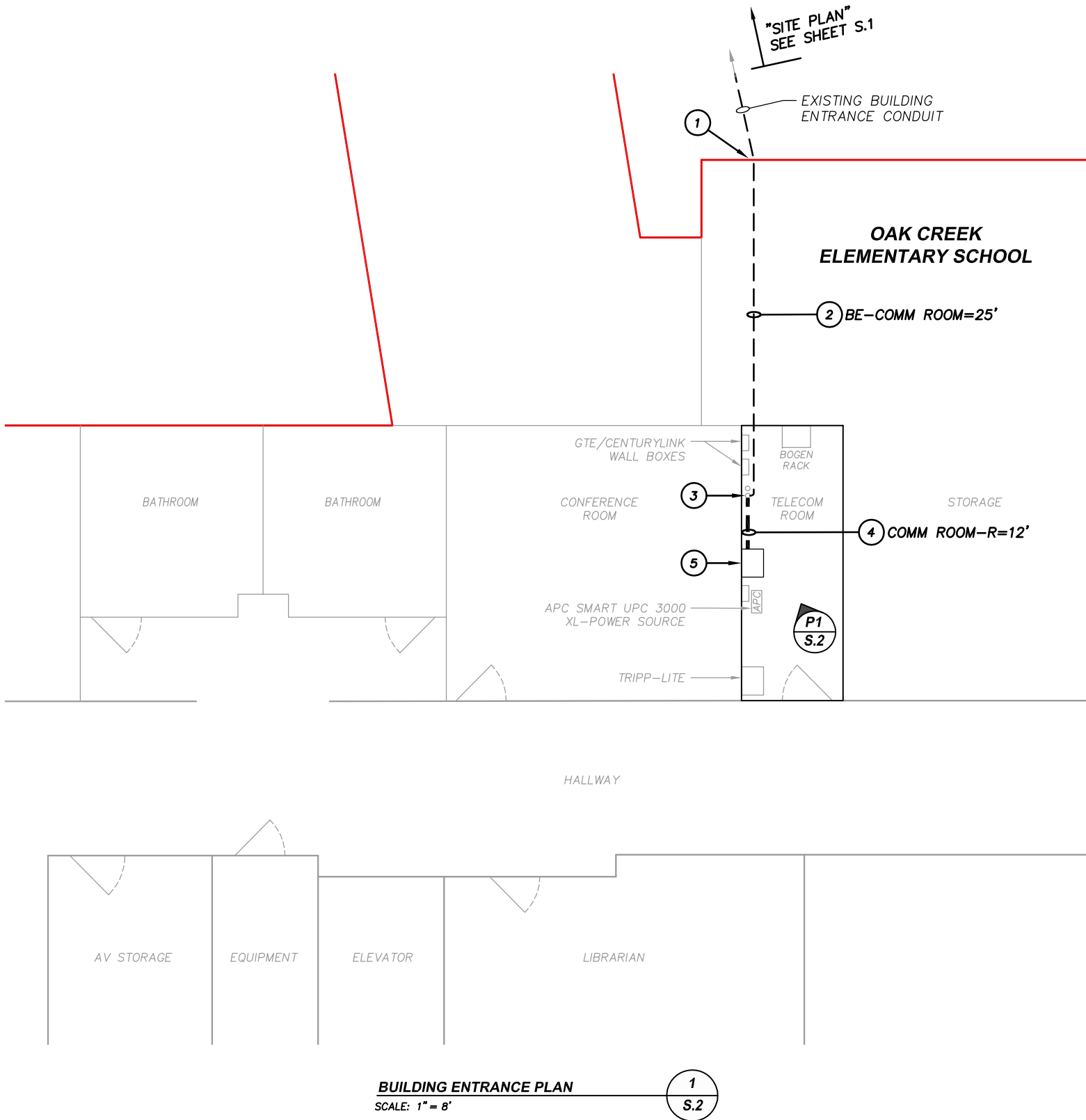
COUNTY: CLACKAMAS CO., OREGON

PLOT DATE: 3/17/2017

SCALE: AS SHOWN

PROJECT NAME-FILENAME.DWG – TAB_SHEET #
LAKEO-S8-CP00.DWG – SP01_S.1

SHEET
S.1

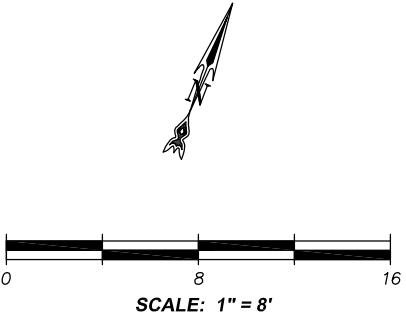


CONSTRUCTION NOTES

- 1 EXISTING BUILDING ENTRANCE LOCATION. CONDUIT TRANSITIONS UNDER SLAB.
- 2 EXISTING 4" BUILDING ENTRY CONDUIT UNDER SLAB. PL NEW 24F CABLE AND #12 AWG LOCATE WIRE IN EXISTING VACANT CONDUIT.
- 3 EXISTING COMM ROOM ENTRANCE LOCATION. 4" CONDUIT ENTERS ROOM THROUGH SLAB. BOND #12 LOCATE WIRE TO NEAREST SUITABLE GROUND PER NEC.
- 4 PL NEW 1-1/4" RISER FLEX CONDUIT FROM COMM ROOM ENTRY TO RACK LOCATION. SECURE CONDUIT TO COMM ROOM WALL W/C-CLAMPS. PL NEW 24F CABLE THROUGH NEW FLEX CONDUIT.
- 5 EXISTING RACK - PROPOSED CBX EQUIPMENT LOCATION. LEAVE 30' SLACK IN NEW 24F CABLE AT RACK FOR SPLICING.



EXISTING EQUIPMENT RACK
SCALE: N.T.S.



Plot Date: 17 Mar 2017, 2:34pm By User: Tom
Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 8\LAKEO-S8-CP00.DWG Layout (If Any): SP01_S.2

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CHECKED BY:	J. GREENWOOD		
REVISIONS			
REV	DESCRIPTION	DATE	BY

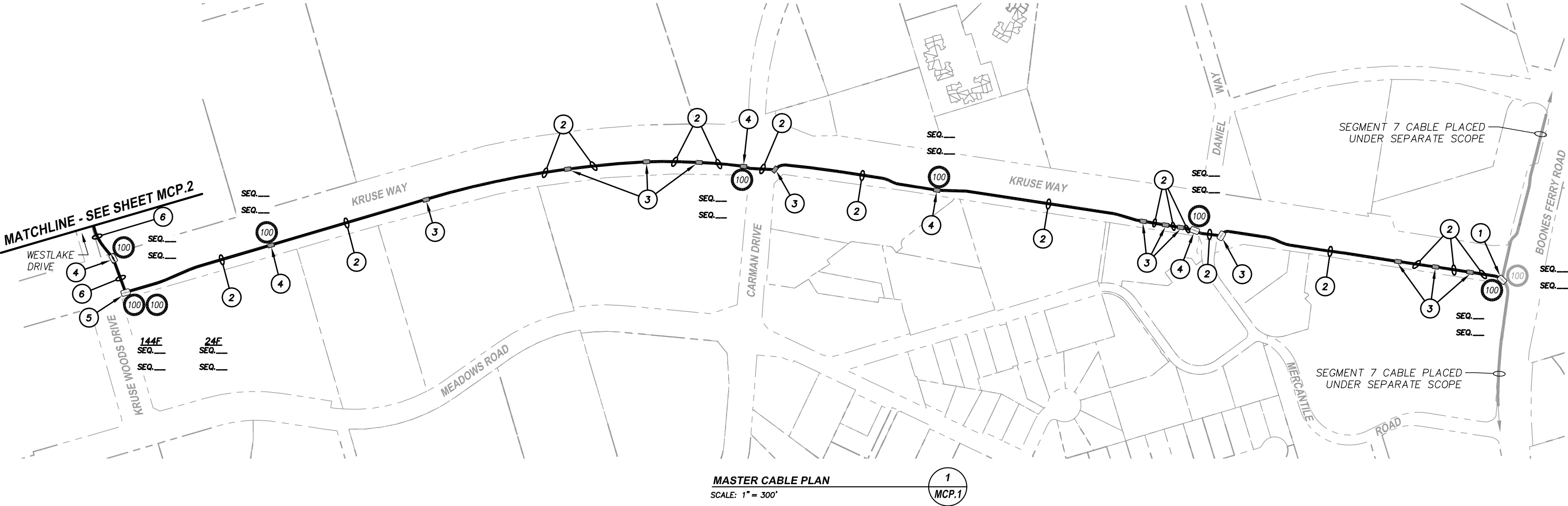
Clackamas Broadband eXchange

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LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 8 - OAK CREEK ELEMENTARY SCHOOL
BUILDING ENTRANCE PLAN

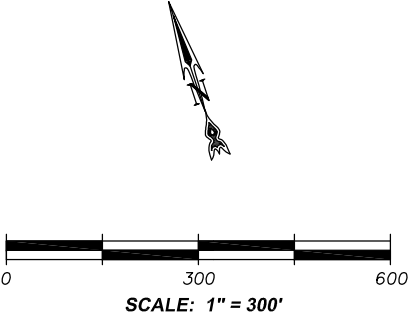
CITY: LAKE OSWEGO - TOWNSHIP 02 SOUTH RANGE 01 EAST SECTION: 6,7,8		COUNTY: CLACKAMAS CO., OREGON	
PLOT DATE: 3/17/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG - TAB_SHEET # LAKEO-S8-CP00.DWG - SP01_S.2	SHEET S.2

CONSTRUCTION SET



CONSTRUCTION NOTES

- 1 PROPOSED MID-SHEATH SPLICE LOCATION.
EXISTING 100' SLACK STORAGE IN NEW 144F CABLE COILED IN VAULT. (SEGMENT 7 BACKBONE - PLACED UNDER SEPARATE SCOPE)
LEAVE 100' SLACK STORAGE IN NEW 144F MICRO CABLE COILED IN VAULT. (SEGMENT 8 BACKBONE)
- 2 PL NEW 144F MICRO CABLE THROUGH VACANT MICRO DUCT.
- 3 PASS THROUGH VAULT WITH NO SLACK STORAGE.
- 4 LEAVE 100' SLACK STORAGE IN VAULT.
- 5 PROPOSED REEL-END SPLICE LOCATION.
LEAVE 100' SLACK STORAGE IN NEW 144F MICRO CABLE COILED IN VAULT. (SEGMENT 8 BACKBONE)
LEAVE 100' SLACK STORAGE IN NEW 24F CABLE COILED IN VAULT. (SEGMENT 8 LATERAL)
- 6 PL NEW 24F CABLE AND #12 AWG LOCATE WIRE THROUGH NEW 2" CONDUIT.



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Oregon City, Oregon 97045
www.commstructureconsulting.com

Main Office:
503.343.4134

DESIGNED BY:	T. WALKER	DRAWN BY:	T. BRADLEY
CHECKED BY:	J. GREENWOOD		
REVISIONS			
REV	DESCRIPTION	DATE	BY APP

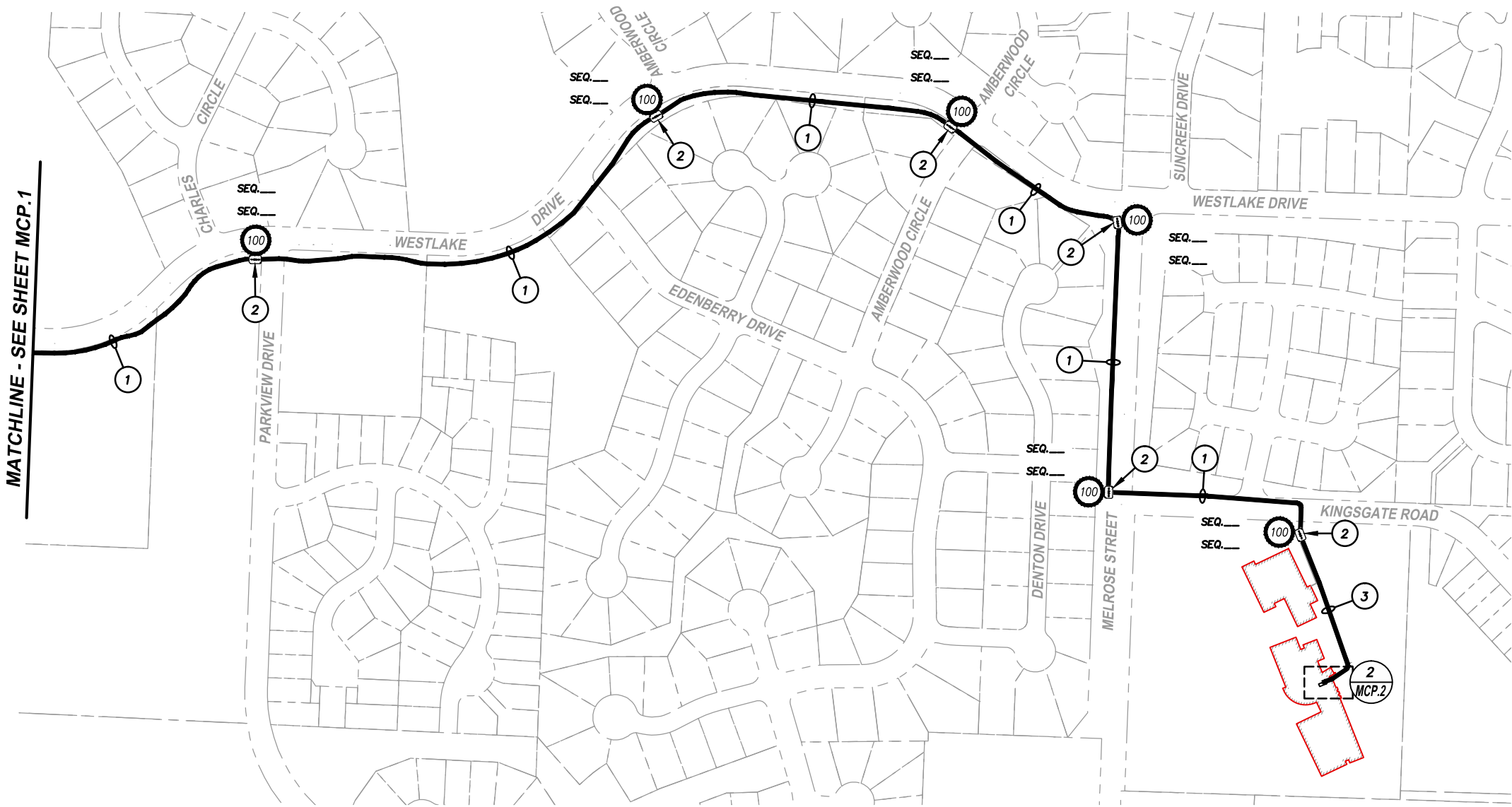
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LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 8 - OAK CREEK ELEMENTARY SCHOOL
MASTER CABLE PLAN

CITY: LAKE OSWEGO - TOWNSHIP 02 SOUTH RANGE 01 EAST SECTION: 6,7,8		COUNTY: CLACKAMAS CO., OREGON	
PLOT DATE: 3/17/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG - TAB_SHEET # LAKEO-S8-CP00.DWG - CP01_MCP.1	SHEET MCP.1

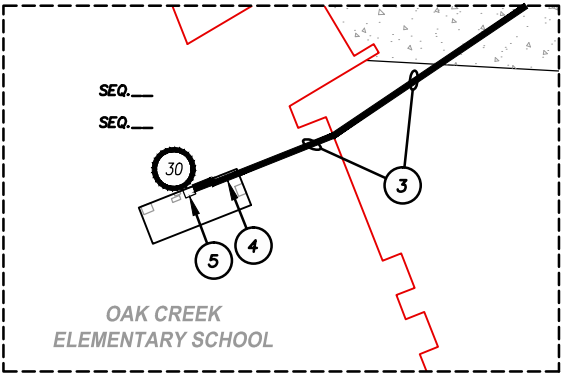
CONSTRUCTION SET



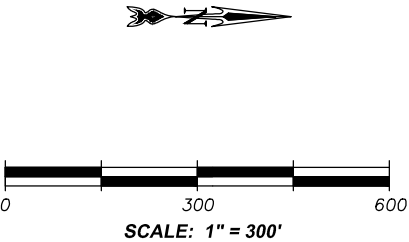
MASTER CABLE PLAN
SCALE: 1" = 300'

CONSTRUCTION NOTES

- 1 PL NEW 24F CABLE AND #12 AWG LOCATE WIRE THROUGH NEW 2" CONDUIT.
- 2 LEAVE 100' SLACK STORAGE IN VAULT.
- 3 PL NEW 24F CABLE THROUGH EXISTING BUILDING ENTRY CONDUIT.
- 4 PL NEW 24F CABLE THROUGH NEW RISER FLEX CONDUIT.
- 5 LEAVE 30' SLACK STORAGE IN NEW 24F CABLE COILED AT RACK FOR TERMINATION.



TERMINAL RACK
SCALE: N.T.S.



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REV	DESCRIPTION	DATE	BY	APP

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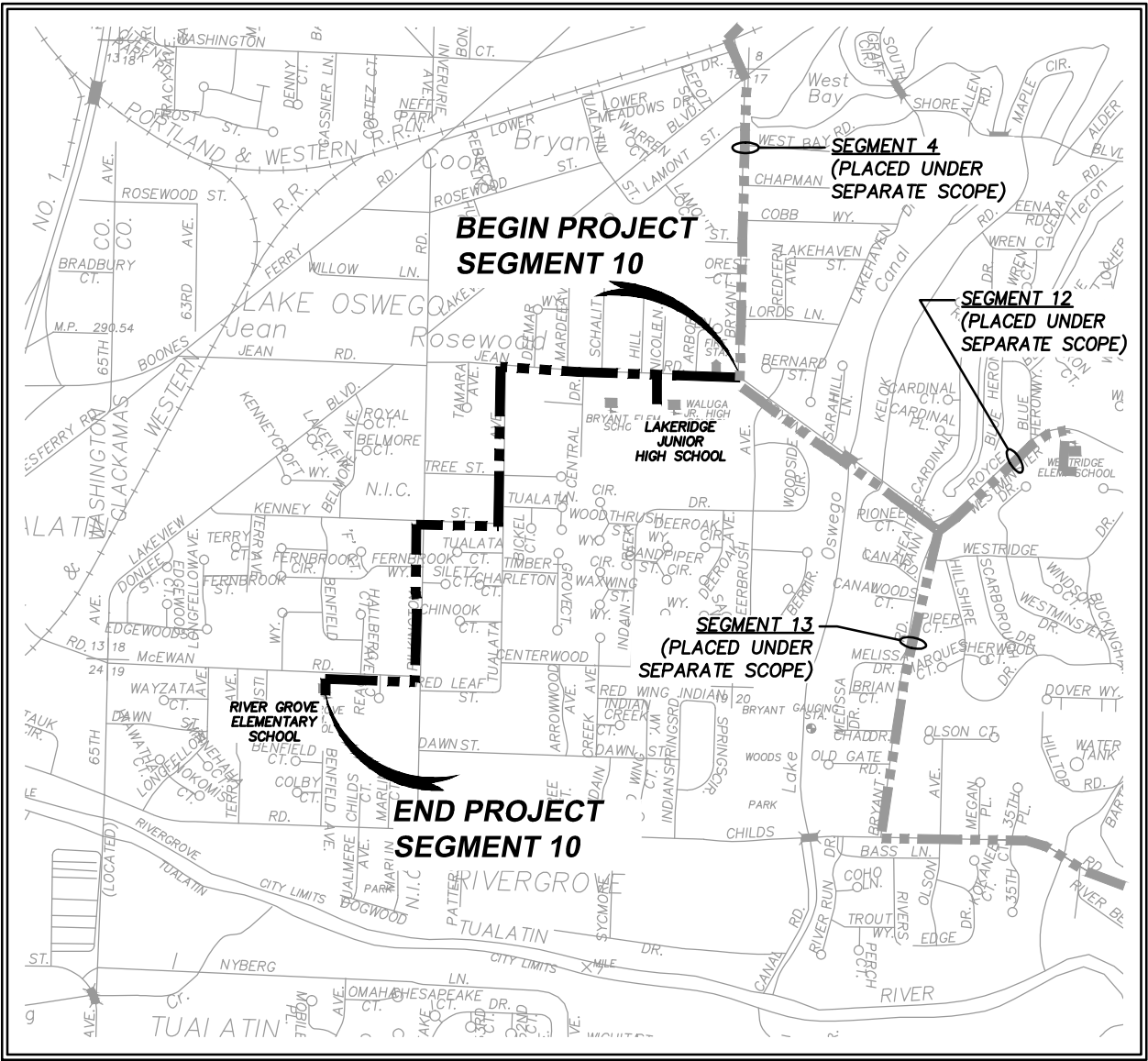
LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 8 - OAK CREEK ELEMENTARY SCHOOL
MASTER CABLE PLAN

CITY: LAKE OSWEGO – TOWNSHIP 02 SOUTH RANGE 01 EAST SECTION: 6,7,8		COUNTY: CLACKAMAS CO., OREGON	
PLOT DATE: 3/17/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG – TAB_SHEET # LAKEO-S8-CP00.DWG – CP01_MCP.2	SHEET MCP.2

CLACKAMAS BROADBAND EXCHANGE

LAKE OSWEGO SCHOOL DISTRICT EXPANSION // SEGMENT 10 - LAKERIDGE JR. HIGH SCHOOL & RIVER GROVE ELEMENTARY SCHOOL

CITY OF LAKE OSWEGO, CLACKAMAS COUNTY, OREGON
TOWNSHIP 02 SOUTH , RANGE 01 EAST, SECTION 17,18,19
February 2017



VICINITY MAP
SCALE: NTS

SHEET INDEX

SHEET NAME	DESCRIPTION
1.0	COVER SHEET – VICINITY MAP
1.1	JOB SCOPE – MATERIAL TAKE-OFF
1.2	LEGEND
1.3	GENERAL NOTES
1.4	GENERAL NOTES
1.5	GENERAL NOTES
1.6	VAULT DETAILS
1.7	RISER DETAILS / LOCATE WIRE AND BONDING DETAILS
2.0	AERIAL PLAN: JEAN ROAD
3.0	AERIAL PLAN: JEAN ROAD
4.0	AERIAL PLAN: TUALATA AVENUE
5.0	AERIAL PLAN: KENNY STREET
6.0	AERIAL PLAN: PILKINGTON ROAD
7.0	AERIAL PLAN: SW MCEWAN ROAD
S.1	SITE PLAN: LAKERIDGE JR. HIGH SCHOOL
S.2	BUILDING ENTRANCE PLAN: COMMUNICATIONS ROOM
S.3	SITE PLAN: RIVER GROVE ELEMENTARY SCHOOL
S.4	BUILDING ENTRANCE PLAN: COMMUNICATIONS ROOM
MCP.1	MASTER CABLE PLAN: SEGMENT 10

OWNER / APPLICANT

CLACKAMAS BROADBAND EXCHANGE
121 LIBRARY COURT
OREGON CITY, OR 97045
OFFICE: 503.655.8322

CONTACT: DUKE DEXTER; BROADBAND PROJECT COORDINATOR
OFFICE: 503.722.6663 CELL: 971.219.3339
E-MAIL: DDEXTER@CO.CLACKAMAS.OR.US

DESIGN CONSULTANTS

COMMSTRUCTURE CONSULTING LLC
811 RAILROAD AVE., OREGON CITY, OR 97045
OFFICE: 503.343.4134

CONTACT: JAMES GREENWOOD EIT, OSP PROJECT MANAGER
DIRECT: 971.266.4424
E-MAIL: JAMES@COMMSTRUCTURECONSULTING.COM

CONTACT: TERENCE WALKER, PROJECT DESIGNER
DIRECT: 971.266.4429
E-MAIL: TERENCE@COMMSTRUCTURECONSULTING.COM



OREGON ADMINISTRATIVE RULES 952-001-0020

PROJECT PLANS TO NOTIFY EXCAVATOR OF REQUIREMENTS OF LAW
ALL PROJECT PLANS SHALL CONTAIN THE FOLLOWING STATEMENT:

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 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).

STAT. AUTH.: SEC. 1 – 5 & 7, CH. 691, OL 1995
STATS. IMPLEMENTED:
HIST.: OUNC 1-1997, F. & CERT. EF. 4-17-97

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LAKE OSWEGO SCHOOL DISTRICT EXPANSION

SEGMENT 10 - LAKERIDGE JR. HIGH SCHOOL & RIVER GROVE ELEMENTARY SCHOOL

COVER SHEET - VICINITY MAP

CITY: LAKE OSWEGO – TOWNSHIP 02 SOUTH RANGE 01 EAST SECTION: 17,18,19 COUNTY: CLACKAMAS CO., OREGON
PLOT DATE: 2/21/2017 SCALE: AS SHOWN PROJECT NAME-FILENAME.DWG – TAB_SHEET # LAKE0-S10-CS00.DWG – CS01_1.0 SHEET 1.0

JOB SCOPE

LAKE OSWEGO, OREGON
CLACKAMAS COUNTY

TOWNSHIP 2S – RANGE 1E – SECTIONS 17, 18 & 19

PROJECT SUMMARY

THIS PROJECT WILL PROVIDE BACKBONE INFRASTRUCTURE EXPANSION OF THE CLACKAMAS BROADBAND EXCHANGE (CBX) NETWORK IN LAKE OSWEGO, OREGON. SPECIFICALLY, THIS PROJECT WILL FACILITATE EXPANDED BROADBAND CONNECTIVITY FOR THE LAKE OSWEGO SCHOOL DISTRICT SITES AND FACILITIES IN THE AREA.
THIS PROJECT IS DIVIDED INTO 10 SEPARATE BUT CONTINUOUS BACKBONE SEGMENTS WITH THE COMBINED ROUTE TOTALING APPROXIMATELY 70,000 FEET OF NEW AERIAL AND UNDERGROUND INFRASTRUCTURE. THE FOLLOWING IS THE SCOPE OF WORK AND SUMMARY FOR THIS SPECIFIC SEGMENT DESIGN PACKAGE.

LATERAL – SEGMENT 10

SEGMENT 10 WILL CREATE A NEW FIBER OPTIC LATERAL NETWORK CONNECTION BETWEEN LAKERIDGE JR HIGH SCHOOL, RIVER GROVE ELEMENTARY AND SEGMENT 4 OF THE LAKE OSWEGO SCHOOL DISTRICT EXPANSION BACKBONE AND EXISTING CBX FACILITIES.

BEGINNING AT THE PROPOSED REEL–END SPLICE LOCATION ALONG THE SEGMENT 4 BACKBONE ADJACENT TO PGE POLE #4517 LOCATED ON THE SW CORNER OF BRYANT RD AND JEAN RD, A NEW 6.6M STRAND PATHWAY WILL BE CONSTRUCTED WEST, ALONG THE SOUTH SIDE OF JEAN RD TO A MID–SHEATH SPLICE LOCATION ADJACENT TO PGE RISER POLE #4233 LOCATED ON THE SE CORNER OF JEAN RD AND HILL WAY. THE NEW 24F CABLE WILL BE LASHED TO THE NEW 6.6M STRAND PATHWAY AS DESCRIBED ABOVE.

FROM PGE RISER POLE #4233 A NEW UNDERGROUND CONDUIT PATHWAY WILL BE CONSTRUCTED SOUTH TO A NEW UTILITY VAULT INTERCEPTING EXISTING BUILDING ENTRANCE CONDUIT ON THE NORTH SIDE OF THE SCHOOL PROPERTY ADJACENT TO THE JEAN RD. FROM THIS NEW VAULT THE EXISTING CONDUIT PATHWAY TRANSITIONS SOUTH THROUGH THE LAKERIDGE JUNIOR HIGH SCHOOL PARKING LOT TO THE EXISTING BUILDING ENTRANCE LOCATION. FROM THE BUILDING ENTRANCE LOCATION NEW RISER FLEX CONDUIT WILL BE PLACED THROUGH THE FACILITY INTERIOR TO THE EXISTING RACK AND PROPOSED CBX EQUIPMENT LOCATION IN THE LAKERIDGE JUNIOR HIGH SCHOOL COMM ROOM. THE NEW 24F CABLE WILL TRANSITION THROUGH THE NEW AND EXISTING BUILDING ENTRANCE CONDUIT, NEW RISER FLEX CONDUIT AND COIL AT THE PROPOSED CBX EQUIPMENT LOCATION FOR TERMINATION.

RIVER GROVE ELEMENTARY – SITE PLAN

BEGINNING AT PROPOSED MID–SHEATH SPLICE LOCATION IN FRONT OF LAKERIDGE JUNIOR HIGH SCHOOL ALONG THE SEGMENT 10 LATERAL PATHWAY DESCRIBED ABOVE, A NEW 6.6M STRAND AERIAL PATHWAY WILL BE CONSTRUCTED WEST, ALONG THE SOUTH SIDE OF JEAN RD TO PGE POLE #6486 LOCATED ON THE SE CORNER OF JEAN RD AND TUALATA AVE. FROM HERE THE PATHWAY WILL HEAD SOUTH ON THE EAST SIDE OF TUALATA AVE TO PGE POLE #3515 LOCATED ON THE NE CORNER OF TUALATA AVE AND KENNY ST, THEN CONTINUING WEST ON THE NORTH SIDE OF KENNY ST TO PGE POLE #34895 LOCATED ON THE NE CORNER OF KENNY ST AND PILKINGTON RD. FROM HERE THE AERIAL PATHWAY HEADS SOUTH ON PILKINGTON RD TO PGE POLE #4730 LOCATED ON THE NE CORNER OF PILKINGTON RD AND SW MCEWAN RD, THEN WEST ON SW MCEWAN RD TO PGE RISER POLE #4718 LOCATED ON THE NORTH SIDE OF RIVER GROVE ELEMENTARY SCHOOL.

FROM PGE RISER POLE #4718 A NEW UNDERGROUND CONDUIT PATHWAY WILL BE CONSTRUCTED SOUTH TO A NEW UTILITY VAULT INTERCEPTING EXISTING BUILDING ENTRANCE CONDUIT ON THE NORTH SIDE OF THE SCHOOL PROPERTY ADJACENT TO THE SW MCEWAN RD. FROM THIS NEW VAULT THE EXISTING CONDUIT PATHWAY TRANSITIONS SOUTH THROUGH THE RIVER GROVE ELEMENTARY SCHOOL PARKING LOT TO THE EXISTING BUILDING ENTRANCE LOCATION. FROM THE BUILDING ENTRANCE LOCATION NEW RISER FLEX CONDUIT WILL BE PLACED THROUGH THE FACILITY INTERIOR TO THE EXISTING RACK AND PROPOSED CBX EQUIPMENT LOCATION IN THE RIVER GROVE ELEMENTARY SCHOOL COMM ROOM. THE NEW 24F CABLE WILL TRANSITION THROUGH THE NEW AND EXISTING BUILDING ENTRANCE CONDUIT, NEW RISER FLEX CONDUIT AND COIL AT THE PROPOSED CBX EQUIPMENT LOCATION FOR TERMINATION.

CONTRACTOR WILL BE RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE CITY, COUNTY, STATE AND PRIVATE AGENCY RIGHT OF WAY AND POLE ATTACHMENT PERMIT REQUIREMENTS INCLUDING TRAFFIC CONTROL, WORK HOUR RESTRICTIONS, NOTIFICATIONS AND RESTORATION. CABLE REEL LOCATIONS ALONG WITH SLACK STORAGE IN THE FIBER CABLE WILL BE PLACED AT AERIAL STORAGE AND VAULT LOCATIONS AS DESIGNATED IN THE CONSTRUCTION DRAWINGS AND FIBER OWNERSHIP TAGS WILL BE PLACED ON THE CABLE AT EVERY POLE AND EVERY VAULT LOCATION. THE CONTRACTOR WILL PLUG ALL VACATED HOLES FROM ABANDON OR RELOCATED ATTACHMENTS PER POLE OWNER SPECIFICATIONS. CONTRACTOR WILL TEST AND VERIFY THE EXISTING CONDUIT PRIOR TO INSTALLATION OF THE NEW FIBER OPTIC CABLE AND LOCATE WIRE. CONTRACTOR WILL CLEAN AND TAG FIBER COILS; PREP FOR SPLICE; PLACE LOCATE WIRE; TEST STATIONS; GROUND RODS; AND GROUND WIRE AS REQUIRED AND DETAILED IN THE CONSTRUCTION DRAWINGS WITH REPLACING ANY MISSING LOCATE WIRE WITHIN THE EXISTING CONDUIT PATHWAYS.

PERMITS

CITY OF LAKE OSWEGO:	1
PGE JOINT USE PERMITS:	1
FRONTIER JOINT USE PERMITS:	1

MATERIAL & INSTALLATION SUMMARY

DESCRIPTION	UOM	TOTALS
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MATERIAL RAKE OFF:

AERIAL QUANTITY:

6.6M STRAND / MESSENGER:	FT	6650
3/4" SCREW ANCHOR:	EA	13
6.6M DOWN GUY:	EA	14
2" CONDUIT RISER (10' GRC REMAINING PVC):	FT	60
AERIAL SLACK STORAGE BRACKET (SNOW SHOE – QTY. 2):	EA	6

UNDERGROUND QUANTITY:

2" SCH40 PVC OR SDR11 HDPE CONDUIT:	FT	33
24X36X36 OPEN BOTTOM HAND HOLE:	EA	2
#12 AWG LOCATE WIRE:	FT	558
LOCATE WIRE TEST STATION:	EA	2
5/8' X 5' GROUND ROD:	EA	2

INTERIOR QUANTITY:

1–1/4" RISER FLEX CONDUIT:	FT	240
----------------------------	----	-----

FIBER QUANTITY:

24 CT ARMORED FIBER OPTIC CABLE:	FT	7860
24 CT ARMORED FIBER OPTIC CABLE SLACK:	FT	960

INSTALLATION RAKE OFF:

AERIAL QUANTITY:

PLACE NEW 6.6M STRAND / MESSENGER:	FT	6650
PLACE NEW ANCHOR:	EA	13
PLACE NEW DOWN GUY:	EA	13
PLACE NEW AERIAL SLACK STORAGE BRACKET (SNOW SHOE – QTY. 2):	EA	6

UNDERGROUND QUANTITY:

PLACE ONE(1) NEW 2" SCH40 PVC OR SDR11 HDPE CONDUIT:	FT	33
PLACE NEW 24X36X36 OPEN BOTTOM HAND HOLE:	EA	2
PLACE NEW #12 AWG LOCATE WIRE (AS–REQUIRED):	FT	558
PLACE NEW LOCATE WIRE TEST STATION (AS–REQUIRED):	EA	2
PLACE NEW 5/8' X 5' GROUND ROD (AS–REQUIRED):	EA	2

INTERIOR QUANTITY:

PLACE NEW 1–1/4" RISER FLEX CONDUIT:	FT	240
--------------------------------------	----	-----

FIBER QUANTITY:

PLACE (LASH) NEW FIBER CABLE TO NEW STRAND:	FT	7242
PLACE (LASH) NEW FIBER CABLE(S) TO EXISTING STRAND (OVERLASH):	FT	500
PULL NEW CABLE THROUGH EXISTING CONDUIT:	FT	525
PULL NEW CABLE THROUGH NEW CONDUIT:	FT	273
PLACE NEW CABLE IN EXISTING CABLE TRAY:	FT	2
TOTAL POLES	EA	43

*** NOTE:
FOOTAGES SHOWN ARE MEASURED IN LINEAR FEET.
TO ACCOMMODATE FOR SAG DISTANCE FROM POLE TO POLE,
ADD 2% TO TOTAL CABLE & STRAND.

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LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 10 - LAKERIDGE JR. HIGH SCHOOL & RIVER GROVE ELEMENTARY SCHOOL
JOB SCOPE - MATERIAL RAKE-OFF

CITY: LAKE OSWEGO – TOWNSHIP 02 SOUTH RANGE 01 EAST SECTION: 17,18,19		COUNTY: CLACKAMAS CO., OREGON	
PLOT DATE: 3/15/2017	SCALE: AS SHOWN	PROJECT NAME–FILENAME.DWG – TAB_SHEET # LAKEO–S10–CS00.DWG – CS02_1.1	SHEET 1.1



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CHECKED BY: J. GREENWOOD

DRAWN BY: T. BRADLEY

REVISIONS				
REV	DESCRIPTION	DATE	BY	APP

SPECIFICATION SET

SURFACE FEATURES / AERIAL UTILITIES - LINETYPES & SYMBOLS

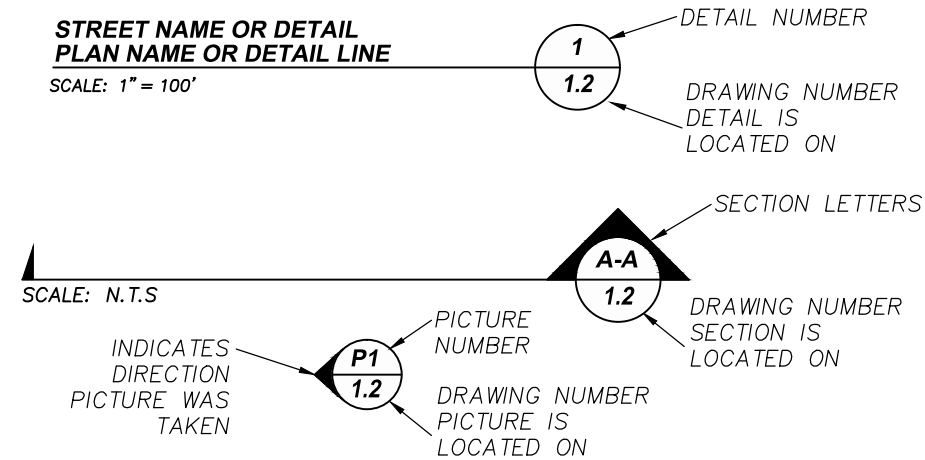
EXISTING	PROPOSED
<div>DESIGN</div> <div><div>CABLE</div><div>STRAND</div><div>CONDUIT</div><div>PLENUM / RISER RATED FLEX CONDUIT (AS SPECIFIED)</div></div>	<div>DESIGN</div> <div><div>CABLE</div><div>STRAND</div><div>CONDUIT</div><div>PLENUM / RISER RATED FLEX CONDUIT (AS SPECIFIED)</div></div>
<div>COMMUNICATIONS</div> <div>(OWNERS SPECIFIED ON PLANS)</div> <div>CATV CATV</div> <div>T TELEPHONE</div> <div>FO FIBER OPTIC</div>	
<div>POWER/ELECTRICAL</div> <div>(OWNERS SPECIFIED ON PLANS)</div> <div>P PRIMARY</div> <div>SL STREET LIGHT</div> <div>TS TRAFFIC SIGNAL</div>	
<div>OTHER UTILITIES</div> <div>G GAS</div> <div>SS SANITARY</div> <div>ST STORM</div> <div>W WATER</div>	
<div>TOPO FEATURES</div> <div>BOW BACK OF WALK/SIDEWALK</div> <div><div>BUILDING FOOTPRINT</div></div> <div>CULVERT</div> <div>CURB CURB</div> <div>EOC EDGE OF CONCRETE</div> <div>EOG EDGE OF GRAVEL</div> <div>EOP EDGE OF PAVEMENT</div> <div>DWY DRIVEWAY</div> <div>TOB TOP OF BANK</div> <div>FENCE STRIPING</div> <div>R/R TRACKS</div> <div>C/L RIGHT-OF-WAY CENTERLINE</div> <div>R/W RIGHT-OF-WAY</div> <div>P/L PROPERTY LINE</div> <div>EASEMENT</div> <div>WALL</div> <div>VEGETATION LINE</div>	<div>POLE TO POLE GUY</div> <div>CENTERLINE</div>

ABBREVIATIONS

E/W EQUIPPED WITH	N NORTH	AB ABANDONED	FS FIELD SIDE	RPL REPLACE
D/W DRIVEWAY	S SOUTH	BOC BACK OF CURB	FOC FACE OF CURB	SCA SIDE CABLE ARM
O/S OFFSET	E EAST	BOW BACK OF SIDEWALK	GRC GALVANIZED RIGID CONDUIT	SLP STREET LIGHT PROTECTED
R/W RIGHT OF WAY	W WEST	BP BORE PIT	HT HEIGHT	SLU STREET LIGHT UNPROTECTED
S/W SIDEWALK		DG DOWNGUY	HDG HOT DIPPED GALVANIZED	SL STREET LIGHT
N/O NORTH OF		FC FIBERGLASS CONDUIT	ID INNERDUCT	CATV CABLE TELEVISION
S/O SOUTH OF		FGA FIBERGLASS ARM	MGN MULTI-GROUNDED NEUTRAL	TEL TELEPHONE
E/O EAST OF		DOC DEPTH OF COVER	MIN MINIMUM	VGR VERTICAL GROUND ROD
W/O WEST OF		FDC FIBER DUCT IN CONCRETE	OD OUTSIDE DIAMETER	WT WEIGHT
		FO FIBER OPTIC	PL PLACE	W-W WALL TO WALL FOOTAGE
		NT NO TAG	PWR POWER	P-W POLE TO WALL FOOTAGE
		NV NOT VISIBLE	PUE PUBLIC UTILITY EASEMENT	BE BUILDING ENTRY
		BT BLANK TAG		

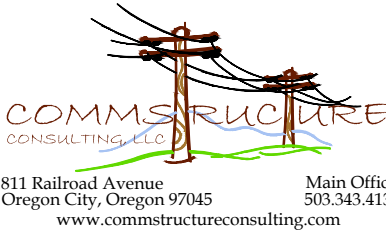
EXISTING	PROPOSED
<div>UTILITY POLE</div>	<div>UTILITY POLE</div>
<div>SPLICE</div>	<div>SPLICE</div>
<div>MID-SHEATH SPLICE</div>	<div>MID-SHEATH SPLICE</div>
<div>VAULT/BUILDING STORAGE</div>	<div>VAULT/BUILDING STORAGE</div>
<div>FIBER SYMBOL</div>	<div>FIBER SYMBOL</div>
<div>FT AERIAL STORAGE</div>	<div>FT AERIAL STORAGE</div>
<div>POWER ANCHOR & GUY</div>	<div>ANCHOR & GUY</div>
<div>POWER S/W ANCHOR & GUY</div>	<div>DOWNGUY TO EXISTING ANCHOR</div>
<div>COMM ANCHOR & GUY</div>	<div>S/W ANCHOR & GUY</div>
<div>COMM S/W ANCHOR & GUY</div>	<div>DOWNGUY TO EXISTING S/W ANCHOR</div>
<div>VGR GROUND</div>	<div>VGR GROUND</div>
<div>INTERIOR BOND</div>	<div>INTERIOR BOND</div>

DETAILS AND SECTIONS CALLOUT SYMBOLOGY



EXISTING	PROPOSED
<div>TELECOMM</div> <div>CABLE MARKER</div> <div>CABLE MARKER E/W GROUND LUGS</div> <div>LOCATE TERMINAL ACCESS POINT</div> <div>GROUND ROD</div> <div>CATV RISER</div> <div>TELECOMM MANHOLE</div>	<div>CABLE MARKER</div> <div>CABLE MARKER E/W GROUND LUGS</div> <div>LOCATE TERMINAL ACCESS POINT</div> <div>GROUND ROD</div> <div>SIGNAL CONTROLLER</div>
<div>POWER</div> <div>POWER TRANSFORMER</div> <div>POWER METER</div>	
<div>TRAFFIC</div> <div>CROSS WALK SIGNAL</div> <div>R/R CROSSING SIGNAL</div> <div>JUNCTION BOX</div> <div>TRAFFIC SIGNAL POLE</div> <div>SIGNAL CONTROLLER</div> <div>RAILROAD ARM</div> <div>SIGN</div>	
<div>STORM</div> <div>AREA DRAIN</div> <div>CATCH BASIN</div> <div>STORM SEWER</div>	
<div>WATER</div> <div>BLOW OFF</div> <div>FIRE CONNECTION</div> <div>FIRE HYDRANT</div> <div>IRRIGATION METER</div> <div>IRRIGATION VALVE</div> <div>WATER METER</div> <div>WATER VALVE</div> <div>WATER VAULT</div>	
<div>TOPO</div> <div>BOLLARD</div> <div>GAS VALVE</div> <div>GAS METER</div> <div>LUMINAIRE</div> <div>MAILBOX</div> <div>PROPERTY CORNER</div> <div>MONUMENT SURVEY</div> <div>PARKING METER</div> <div>SANITARY SEWER</div> <div>STEEL PILING</div> <div>TREE</div>	

45'/4/D(T)=POLE HT/CLASS/DISTRIBUTION(TRANSMISSION)
P.O.A.=_____ <-PROPOSED POINT OF ATTACHMENT



DESIGNED BY: CCLLC
CHECKED BY: CCLLC DRAWN BY: CCLLC

REVISIONS				
REV	DESCRIPTION	DATE	BY	APP

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CLACKAMAS BROADBAND EXPRESS
STANDARD PLANS FOR CONSTRUCTION
LEGEND

CITY: CITY – TOWNSHIP RANGE SECTION:				COUNTY: COUNTY CO., STATE	
PLOT DATE: 12/06/2016	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG – TAB_SHEET # CBX-DT00.DWG – LG01_1.2		SHEET	1.2

SPECIFICATION SET

SITE CONDITIONS:

THE LOCATIONS OF EXISTING UTILITIES SHOWN IN THIS PLAN ARE APPROXIMATE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES. UTILITIES MAY EXIST IN THE AREA IN ADDITION TO THOSE SHOWN ON THE PLAN. THE CONTRACTOR SHALL CONTACT PROPERTY OWNERS WHEN WORKING WITHIN PRIVATE EASEMENTS FOR LOCATION OF UNDERGROUND TANKS, PIPELINES, DRAIN TILES, OR OTHER BURIED IMPROVEMENTS. THE CONTRACTOR SHALL ALSO NOTIFY THE UTILITY NOTIFICATION CENTER PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITIES.

THE CONTRACTOR MUST ASSUME ALL BURIED UTILITIES ENCOUNTERED ARE LIVE AND ACTIVE UNLESS SPECIFICALLY INSTRUCTED OTHERWISE BY THE OWNERS OR OPERATORS OF SAID UTILITIES. REPAIR OF ANY DAMAGED CONDUIT CONTAINING CABLE SHALL BE MADE BY USE OF PVC SPLIT DUCT OR MATCH EXISTING. DAMAGE TO SUB-SURFACE STRUCTURES IS THE SOLE RESPONSIBILITY OF THE PLACING CONTRACTOR.

THE CONTRACTOR SHALL PROTECT THE EXISTING TRAFFIC CONTROL LOOPS. IF EXISTING TRAFFIC CONTROL LOOPS ARE DAMAGED DURING CONSTRUCTION, THE ENTIRE LOOP WIRE FROM TERMINAL TO TERMINAL SHALL BE REPLACED IN ACCORDANCE WITH GOVERNING AGENCY STANDARDS AND REGULATIONS AT CONTRACTOR'S EXPENSE.

REMOVAL OF EXISTING ASPHALT PAVEMENT, CONCRETE CURBS, AND CONCRETE SIDEWALKS WILL BE "NEAT LINE" WITH SAW OR PAVEMENT CUTTER, PER REQUIREMENTS AND SPECIFICATIONS OF THE AGENCY OR DEPARTMENT RESPONSIBLE FOR EACH LOCATION. IF CONCRETE PAVEMENT IS ENCOUNTERED WHILE EXCAVATING CONDUIT TRENCHES, THE CONCRETE REMOVAL WILL BE "NEAT LINE" WITH A PAVEMENT SAW.

IF CONCRETE CURB RETURNS AND/OR SIDEWALKS ARE REPLACED DUE TO CONDUIT OR MANHOLE INSTALLATION, THE CONTRACTOR SHALL PLACE APPROVED HANDICAPPED SIDEWALK AND CURB ACCESS RAMPS IN CONFORMANCE WITH STATE STATUTES.

ALL MATERIALS NECESSARY FOR THE REPAIR OF STREETS, CURBS, SIDEWALKS, SANITARY SEWERS, STORM SEWERS, AND PUBLIC SERVICE UTILITIES, AND THE INSTALLATION OF SUCH MATERIALS SHALL BE IN CONFORMANCE WITH THE REQUIREMENTS AND SPECIFICATIONS OF THE AGENCY OR DEPARTMENT RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE REPAIRED FACILITY.

ALL OPEN TRENCH WILL BE CLEARLY MARKED WITH BARRICADES OR CONES. STEEL PLATES OR OTHER TYPES OF BRIDGING SHALL BE PROVIDED TO COVER OPEN TRENCH IN THE TRAVEL PORTION OF THE STREETS. THESE PLATES OR BRIDGING SHALL BE ADEQUATE TO SUPPORT THE NORMAL VEHICLE LOADS ANTICIPATED IN THIS AREA AND SHALL BE IN PLACE DURING ALL NON-WORKING AREAS.

ALL SURFACES TO BE RESTORED TO ORIGINAL CONDITION, AND BACKFILL TO BE COMPACTED AS SPECIFIED. TRENCH EXCAVATION IN SURFACES WHICH INCLUDE CONCRETE TREATED BASE SHALL FOLLOW LOCAL AREA SPECIFICATIONS.

ALL WORK SHALL CONFORM TO THE SPECIFICATIONS OF THE JURISDICTIONAL PERMIT AGENCY.

TEMPORARY BACKFILL:

THE CONTRACTOR SHALL BE REQUIRED TO MAINTAIN NORMAL TRAFFIC MOVEMENT DURING NON-WORK PERIODS FOR ALL CONSTRUCTION ACTIVITY WITHIN THE LIMITS OF CITY STREETS BY THE USE OF STEEL PLATES (DESIGNED FOR H-20 LOADING) OR BACKFILLING THE TRENCH. IF THE CONTRACTOR ELECTS TO BACKFILL THE TRENCH HE SHALL "CAP" THE TRENCH WITH A 2"(COMPACTED MINIMUM) DEPTH OF CLASS "C" ASPHALTIC CONCRETE COLD MIX. IF THE CONTRACTOR ELECTS TO PLATE THE TRENCH THE PLATES SHALL BE PINNED AT EACH CORNER AND THE EDGES SHALL BE "RAMPED" WITH CLASS "C" ASPHALTIC CONCRETE COLD MIX TO PREVENT "WHEEL SHOCK" ON IMPACT. COLD MIX SHALL BE COMPACTED AND SMOOTH IN EITHER TYPE OF INSTALLATION. TO PREVENT SKIDDING, TRAFFIC PLATES SHALL BE TREATED WITH WELD BEADS TO PROVIDE TRACTION. WELD BEADS SHALL BE LOCATED 4" ON CENTER AND EXTEND THROUGH THE TRAVEL PORTIONS OF THE PLATES. USE OF STEEL PLATES IN THE ROW TO BE APPROVED BY THE GOVERNING PERMIT AGENCY.

BACKFILL:

BACKFILL OF CONDUIT TRENCH OR MANHOLE EXCAVATION SHALL BE 3/4" – 0 CRUSHED ROCK PLACED IN 6" LIFTS AND COMPACTED WITH MECHANICAL VIBRATING TYPE COMPACTION EQUIPMENT TO 95% OF MAXIMUM DRY DENSITY (ASTM D-1550 OR AASHTO T-180) UNDER ALL PAVED SURFACES UNLESS OTHERWISE SPECIFIED.

BACKFILL OF CONDUIT TRENCH OR MANHOLE EXCAVATION IN NON-PAVED AREAS SHALL BE CLEAN SAND OR SILTY LOAM SOILS PLACED IN 1'-0" LIFTS COMPACTED BY MECHANICAL VIBRATING TYPE COMPACTION EQUIPMENT TO 95% OF MAXIMUM DRY DENSITY (ASTM D698 OR AASHTO T-99) UNLESS OTHERWISE SPECIFIED.

BACKFILL AROUND ALL VAULTS SHOULD CONSIST OF COMPACTED SELECT BACKFILL MATERIAL OR IN ACCORDANCE WITH AGENCY SPECIFIED BACKFILL. IN NO CASE SHALL THE MATERIAL BE SATURATED OR CONTAIN LARGE ROCKS OR CHUNKS. NO VOIDS SHALL REMAIN BETWEEN THE VAULT WALLS AND THE NATIVE SOIL. BACKFILL AROUND VAULTS SHALL NOT BE PLACED UNTIL THE ENTIRE VAULT STRUCTURE IS IN PLACE INCLUDING ALL LIDS AND RISERS, BEING SURE TO COMPACT FILL MATERIAL FROM BOTTOM TO TOP SURFACE.

SAND MAY BE WATER SETTLED IF THAT TYPE OF COMPACTION IS ALLOWED BY THE PERMITTING AGENCY IN EITHER PAVED OR NON-PAVED SITUATIONS. THE CONTRACTOR SHALL VERIFY THE TYPE OF COMPACTION ALLOWED PRIOR TO BEGINNING ANY BACKFILL ACTIVITY.

BACKFILL SHALL BE PLACED IN ACCORDANCE WITH THE SPECIFICATIONS AND REGULATIONS OF THE JURISDICTIONAL PERMIT AGENCY.

HAZARDOUS MATERIALS:

THE CONTRACTOR SHALL NOTIFY THE JURISDICTIONAL PERMIT AGENCY IMMEDIATELY IF ANY MATERIALS ARE ENCOUNTERED THAT MAY BE CONSIDERED HAZARDOUS BY THE EPA, DEQ, OR OSHA. IF POTENTIALLY HAZARDOUS MATERIALS ARE ENCOUNTERED THE CONTRACTOR SHALL SECURE THE SITE AND PREVENT ACCIDENTAL EXPOSURE TO THE PUBLIC OR THE CONTRACTOR'S PERSONNEL.

THE CONTRACTOR MAY EXCAVATE UP TO, BUT SHALL NOT DISTURB KNOWN HAZARDOUS MATERIALS SUCH AS ASBESTOS, OILS, ACID, ETC. THE REMOVAL OF ALL HAZARDOUS MATERIALS MUST BE DONE BY A LICENSED HAZARDOUS MATERIALS CONTRACTOR AND IN ACCORDANCE WITH JURISDICTIONAL AGENCY REQUIREMENTS.

LANDSCAPING:

TREE AND PLANT PROTECTION TO CONFORM WITH THE AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) SECTION A300 PART 1 –10 AS APPLICABLE. ANY DEVIATION FROM INDUSTRY APPROVED TREE AND PLANT CARE TO BE CLEARED WITH THE GOVERNING PERMIT AGENCY REPRESENTATIVE AND OR ADJOINING PROPERTY OWNER PRIOR TO ANY PRUNING OR EXCAVATION.

AT NO POINT IN TIME SHALL THE CONTRACTOR REMOVE ANY TREES OR SHRUBS WITH OUT PREVIOUS AUTHORITY FROM THE GOVERNING PERMIT AGENCY.

EXCAVATION IN LAWN AREAS SHALL BE "NEAT LINED" WITH A SOD CUTTER TO ENSURE A SMOOTH MATCH LINE FOR REPAIR WITH APPROVED SOD.

ALL LAWN RESTORATION SHALL BE DONE BY USING SOD PLACED TO THE GROWER/SUPPLIERS SPECIFICATIONS AND ADJACENT PROPERTY OWNER'S SPECIFICATIONS.

SOD USED TO REPAIR EXISTING LAWN AREA SHALL BE OF A BLEND THAT WILL MATCH THE ADJACENT UNDISTURBED LAWN AREA FOR BOTH COLOR AND TEXTURE.

PRIVATE IRRIGATION SYSTEMS ARE OCCASIONALLY LOCATED WITHIN THE PUBLIC RIGHT-OF-WAY OF ADJACENT STREET AREAS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR OPERATION AND REPAIR IF DAMAGE OCCURS DURING HIS CONSTRUCTION ACTIVITY. PRIVATE IRRIGATION SYSTEMS LOCATED ON PRIVATE PROPERTY DAMAGED BY CONSTRUCTION ACTIVITY SHALL BE REPAIRED IMMEDIATELY TO THE OWNER'S SATISFACTION AT NO COST TO THE OWNER.

IN DEVELOPED (PROFESSIONALLY) LANDSCAPED AREAS, NO WORK SHALL BE DONE WITHOUT THE OWNER'S WRITTEN PERMISSION OR AUTHORIZATION.

STRUCTURE PROTECTION:

VAULTS AND CONDUIT TO BE PLACED ADJACENT TO EXISTING STRUCTURES SUCH AS BRIDGE FOOTINGS, PIERS, BUILDING FOUNDATIONS, WALLS, POWER AND TELEPHONE POLES, AND OTHER UTILITIES SHALL MAINTAIN A MINIMUM CLEARANCE AS SHOWN. THE CONTRACTOR SHALL NOT UNDERMINE ANY ADJACENT STRUCTURE WITHOUT SPECIFIC WRITTEN PERMISSION FROM THE OWNER/OPERATOR OF SUCH STRUCTURE.

EXISTING UTILITIES EXPOSED DURING EXCAVATION SHALL BE 100% SUPPORTED BY BOTH TRENCH BRIDGING AND SUSPENSION OR BY THE USE OF LONGITUDINAL TRAYS OR PLATFORMS VERTICALLY SUPPORTED BY ADJUSTABLE BUILDING JACKS.

EXISTING SPLICE CASES AND CABLES SHALL BE SUPPORTED AT A MAXIMUM SPACING OF 4.0 FEET AND SHALL CONSIST OF A CANVAS SLING WITH NYLON BELTING OR ROPE. ALL CABLE SUPPORTS SHALL BE PLACED IN A MANNER THAT PREVENTS KINKS OR OTHER DAMAGE TO THE CABLE SHEATH.

AN ACCEPTABLE ALTERNATIVE TO CABLE SLINGS WOULD BE THE UTILIZATION OF A WIDE FLANGE "I" BEAM OR CHANNEL AS A "CABLE TRAY" WITH THE CABLES/CASES BANDED IN PLACE.

SHORING:

THE CONTRACTOR SHALL PROVIDE SHORING FOR CONDUIT TRENCH EXCAVATION 42" OR MORE IN DEPTH AS MEASURED FROM THE HIGH SIDE OF THE TRENCH AND FOR ALL MANHOLE EXCAVATION.

MANHOLE SHORING SHALL BE TIGHT-SHEETED.

ALL SHORING SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE JURISDICTIONAL PERMIT AGENCY AND THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).

SHORING SHALL BE DESIGNED TO MEET H-20 HIGHWAY LOADING CRITERIA.

THE CONTRACTOR SHALL PROVIDE ALL SHORING AND DESIGN CALCULATIONS TO THE PERMIT ISSUING AGENCY PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITY.

EXISTING UTILITY SERVICES:

ANY UTILITY DAMAGED BY CONSTRUCTION ACTIVITY SHALL BE RETURNED TO FULL SERVICE IMMEDIATELY AND ANY COST OR EXPENSE CONSIDERED TO BE LOST BY THE UTILITY USER SHALL BE THE CONTRACTOR'S RESPONSIBILITY. IN THE EVENT OF ANY DAMAGE TO AN EXISTING UTILITY THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY OWNER AND THE PROJECT MANAGER.

LANDSCAPE AREAS SERVED BY IRRIGATION SYSTEMS SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION BY THE UTILIZATION OF TEMPORARY SOURCES OF IRRIGATION WATER OR BY MAKING TEMPORARY REPAIRS TO THE DAMAGED SYSTEM TO ALLOW ITS SATISFACTORY OPERATION.

SPECIAL UTILITY CLEARANCES:

ALL WORK CONDUCTED ADJACENT TO WATER MAINS, STORM SEWERS, OR SANITARY SEWERS SHALL CONFORM TO THE FOLLOWING CONDITIONS, UNLESS OTHERWISE SPECIFIED BY THE GOVERNING PERMIT AGENCY:

- A. PARALLEL CONDUIT SHALL MAINTAIN A HORIZONTAL SEPARATION OF 5.0 FEET, MEASURED SURFACE TO SURFACE. (OUTSIDE EDGE TO OUTSIDE EDGE)
- B. PERPENDICULAR CONDUIT PASSING UNDER OR OVER UTILITIES MUST MAINTAIN 12" VERTICAL CLEAR SEPARATION.
- C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING THIS REQUIRED VERTICAL SEPARATION BY EITHER EXPOSING THE UTILITY EVERY 100 FEET IN THOSE AREAS WHERE HORIZONTAL SEPARATION IS LESS THAN 5.0 FEET OR BY UTILIZING KNOWN DEPTHS OF ADJACENT FACILITIES. IF THE CONTRACTOR UTILIZES THE ADJACENT FACILITIES TO DETERMINE DEPTH, HE SHALL CONTACT THE GOVERNING AGENCY AT EACH SUCH LOCATION AND THE AGENCY WILL DETERMINE THE NECESSARY DEPTH OF THE TOP OF THE CONDUIT AT THAT POINT.
- D. THE VERTICAL AND HORIZONTAL SEPARATION SHALL BE MAINTAINED AT ALL TIMES UNLESS SPECIFICALLY STATED OTHERWISE BY THE JURISDICTIONAL PERMIT AGENCY. ANY SPECIFIC DEVIATION IN VERTICAL AND HORIZONTAL SEPARATION FROM THOSE DESCRIBED SHALL BE REPORTED TO THE OWNER BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING VERTICAL AND HORIZONTAL SEPARATION AT ALL TIMES AND SHALL BE RESPONSIBLE FOR ANY AND ALL ENCROACHMENTS.

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CLACKAMAS BROADBAND EXPRESS
STANDARD PLANS FOR CONSTRUCTION
GENERAL NOTES

CITY: CITY – TOWNSHIP RANGE SECTION:			COUNTY: COUNTY CO., STATE
PLOT DATE: 12/06/2016	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG – TAB_SHEET # CBX-DT00.DWG – GN01_1.3	SHEET 1.3

SPECIFICATION SET

PROTECTION OF EXISTING SURVEY MONUMENTS:

THE CONTRACTOR SHALL REPLACE ALL MONUMENTS THAT DEFINE PROPERTY OWNERSHIP SUCH AS IRON RODS, IRON PIPES, BRASS SCREWS, AND REFERENCE POINTS AS REQUIRED BY THE GOVERNING STATE STATUTES. ANY CORNER OR REFERENCE TO A CORNER OF A RECORD OF SURVEY SHALL BE REPLACED BY A LICENSED SURVEYOR WITHIN 90 DAYS OF ITS REMOVAL.

REPLACEMENT MONUMENTS SHALL CONFORM TO STATE STATUTES AS TO TYPE AND STYLE OF IDENTIFICATION WITH THE NECESSARY RECORD OF SURVEY IDENTIFYING WHAT WAS FOUND ORIGINALLY AND WHAT WAS SET AND THE DATE THE REPLACEMENT WAS SET. THE RECORD OF SURVEY SHALL BE COMPLETED IN CONFORMANCE WITH THE REGULATIONS OF THE RELEVANT STATE AND THE JURISDICTIONAL PERMIT AGENCY SURVEYOR.

IT IS THE CONTRACTORS RESPONSIBILITY TO UNDERSTAND AND COMPLY WITH THE JURISDICTIONAL STATUTES SET FORTH BY THE RELEVANT GOVERNING AGENCY.

CONSTRUCTION STAKING:

IN AREAS WHERE THE CONDUIT ALIGNMENT IS NOT CLEARLY DEFINED BY CURB LINES, FENCE LINES, OR OTHER EVIDENCE OF THE RIGHT-OF-WAY, IT IS RECOMMENDED THAT THE CONTRACTOR COORDINATE WITH A PROFESSIONAL SURVEYOR TO PROVIDE STAKING OR PAINT MARKS TO CLEARLY IDENTIFY THE PROPOSED ALIGNMENT.

IF ADDITIONAL FIELD STAKING OF PROPOSED CONDUIT ALIGNMENTS AND VAULT LOCATIONS IS REQUIRED, THE CONTRACTOR IS TO CONTACT THE INSPECTOR AND THE PROJECT DESIGNER TO SCHEDULE A FIELD MEET PRIOR TO CONSTRUCTION.

IF DISCREPANCIES BETWEEN PROFESSIONALLY SURVEYED RIGHT-OF-WAY AND THE PROPOSED ALIGNMENT ARE IDENTIFIED CONTRACTOR IS TO NOTIFY THE REGULATORY PERMIT AGENCY INSPECTOR AND THE PROJECT DESIGNER PRIOR TO CONSTRUCTION.

TRAFFIC CONTROL:

WORK ON ANY PUBLIC OR PRIVATE ROW WITH OR WITHOUT PERMIT THROUGH THE GOVERNING AGENCY MAY REQUIRE ADEQUATE TRAFFIC CONTROL TO PERFORM CONSTRUCTION ACTIVITIES.

TRAFFIC WARNING DEVICES AND SIGNS SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS (U.S. GOVERNMENT PRINTING OFFICE) AND TO THE GOVERNING AGENCY STANDARD SPECIFICATIONS. HIGH LEVEL WARNING TYPE DEVICES ARE TO BE USED AT ALL TIMES AND SPECIAL WARNING DEVICES MAY BE STIPULATED BY THE JURISDICTIONAL PERMIT AGENCY AT ANY TIME THE USE WILL ADD TO THE SAFETY AND PROTECTION OF TRAFFIC OR PEDESTRIANS IN THE CONSTRUCTION AREA.

A TRAFFIC CONTROL PLAN SHALL BE PREPARED BY THE CONTRACTOR AS REQUIRED AND SUBMITTED TO EACH PERMITTING AGENCY REQUESTING SUCH PLAN FOR REVIEW AND APPROVAL OR REVISION PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITY FOR THIS PROJECT. THE APPROVED PLAN SHALL BE SUBMITTED TO THE AGENCY AND A COPY OF THE PLAN SHALL BE KEPT AT THE CONSTRUCTION SITE AND MUST BE READILY AVAILABLE FOR REVIEW BY AGENCY REPRESENTATIVES.

PERMITS – FRANCHISES – EASEMENTS:

PHYSICAL WORK SHALL NOT BE STARTED UNTIL THE GOVERNING AGENCY INSPECTOR AND THE CONTRACTOR ARE IN POSSESSION OF AND HAVE CAREFULLY REVIEWED AND FULLY UNDERSTAND ALL CONDITIONS AND SPECIFICATIONS SET FORTH IN THE REQUIRED PERMITS, FRANCHISES, AND/OR EASEMENTS.

THE PLACING FOREMAN SHALL HAVE A COPY OF THE PERMITS/EASEMENTS ON SITE AT ALL TIMES.

ANY CONFLICT BETWEEN WORK PRINT SPECIFICATIONS AND SPECIFICATIONS SET FORTH UNDER RELATED PERMITS, FRANCHISES, AND/OR EASEMENTS MUST BE CLEARED BY PROPER COMPANY AUTHORITY BEFORE PROGRESSING WITH WORK INVOLVED.

AERIAL NOTES:

ALL AERIAL CONSTRUCTION IS TO BE PERFORMED TO INDUSTRY ACCEPTABLE STANDARDS.

ALL NEW OR EXISTING CABLE HEIGHTS OF ATTACHMENT TO BE DOCUMENTED AT TIME OF CONSTRUCTION.

6.6M STRAND TO BE USED WITH STANDARD 5/8"POLE LINE HARDWARE UNLESS OTHERWISE SPECIFIED. BOND STRAND TO POWER MGN WHERE APPLICABLE.

ALL EXTENSION ARMS TO BE PLACED WILL BE EPOXY ARMS UNLESS OTHERWISE NOTED OR APPROVED BY THE INSPECTOR.

PUPI ARMS TO BE TYPE TB2000 UNLESS OTHERWISE SPECIFIED AND ARE TO BE INSTALLED ACCORDING TO THE POLE OWNER SPECIFICATIONS OR MANUFACTURER SPECIFICATIONS. POLE OWNER SPECIFICATIONS MAY SUPERSEDE MANUFACTURER SPECIFICATION FOR INSTALLATION AS REQUIRED. TYPICAL INSTALLATION INCLUDES UTILIZING TWO (2) THROUGH BOLTS AND NO LAG BOLTS.

ALL ANCHORS TO BE USED WILL BE 3/4 SCREW IN TYPE.

ALL STRAPS WILL BE PLACED 4" BEFORE AND AFTER EVERY SUPPORTING CLAMP AT A MINIMUM OF 21" APART. REPAIR / REPLACE EXISTING LASHING WIRE IF DAMAGED, AND ADD ANY MISSING GROUNDS.

CONTRACTOR TO PLUG ALL VACATED HOLES FROM ABANDONED OR RELOCATED ATTACHMENTS PER POLE OWNER SPECIFICATIONS.

IT IS THE CONTRACTORS RESPONSIBILITY TO MAINTAIN AND FOLLOW NATIONAL ELECTRIC SAFETY CODE ALONG WITH APPLICABLE LOCAL AND REGIONAL GOVERNING AUTHORITIES. ANY DISCREPANCIES BETWEEN THESE AUTHORITIES AND OR THE CONSTRUCTION PRINTS IS TO BE VALIDATED WITH THE DESIGNER OR OWNER PRIOR TO CONSTRUCTION.

CONDUITS:

ALL DIRECT BURIED CONDUIT SHALL BE PVC HEAVY WALL (SCH 40) OR HDPE SDR11 DIRECT BURIAL UNLESS OTHERWISE SPECIFIED.

CONTRACTOR SUPPLIED MATERIALS SHALL CONFORM TO THE JURISDICTIONAL PERMIT AGENCY AND OWNER SPECIFICATIONS.

ALL CONTRACTOR SUPPLIED MATERIALS SHALL INCLUDE A CERTIFIED TEST REPORT CLEARLY STATING THAT THOSE SUPPLIED MATERIALS COMPLY WITH ANY SUCH SPECIFICATION.

ALL CONDUIT IS TO BE PLACED IN THE LOCATION SHOWN ON THE DESIGN PRINTS WITH MINIMUM COVER OF 36 INCHES OR AS NOTED ON THE DRAWINGS OR SPECIFIED BY THE REGULATORY PERMIT AGENCY.

THE TOTAL LENGTH OF TRENCH OPEN AT ANY ONE TIME IS TO BE KEPT TO A MINIMUM.

ALL HDPE CONDUITS ENTERING VAULTS SHALL HAVE A MINIMUM 5.0 FOOT STRAIGHT SECTION OF SCH 40 PVC CONDUIT SLEEVE. THIS STRAIGHT SECTION SHALL BE PERPENDICULAR TO THE WALL OF SAID MANHOLE AND SHALL BE SMOOTH AND FREE OF ALL BURRS AND OTHER FEATURES THAT MAY DAMAGE CABLES. PLUGS SHALL BE UTILIZED TO ORGANIZE, SECURE AND SEAL THE HDPE CONDUITS WITHIN THE SLEEVE AS THEY ENTER THE VAULT.

ALL PVC OR HDPE CONDUITS ARE TO BE PLUGGED WITH COMPRESSION STYLE PLUGS. ANY CONDUITS CONTAINING FIBER CABLES WILL REQUIRE SIMPLEX COMPRESSION PLUGS SEALING THE CONDUIT AROUND THE CABLE.

CASINGS:

ANY REQUIRED STEEL CASING PIPE SHALL BE 100% FILET WELD (3/16") OR THREADED COUPLING. IF WELDED THE CONTRACTOR SHALL PROVE THE INTERIOR DIMENSION BY PULLING A MANDREL COMPLETELY THROUGH THE WELDED JOINT IN BOTH DIRECTIONS. PIPE JOINTS SHALL BE STEEL BRUSHED AND PAINTED WITH A ZINC RICH FLAT BLACK METAL PRIMER PAINT.

VAULTS / HANDHOLES:

ALL VAULTS TO BE UTILITY VAULT PRECAST TYPE 444--LA UNLESS OTHERWISE SPECIFIED. 444--LA VAULTS ARE TO BE FULLY EQUIPPED WITH LADDERS, CABLE RACKS, SUPPORTS, AND PULLING IRONS AS SHOWN BELOW:

- (4) "L" BRACKETS
- (4) 8 HOLE – 113/4" CUT RACKS
- (4) SPRING NUT & SCREWS – (1/2" NUT, 1/2" X 1 1/4" PLATED CAP SCREW)

MOUNT BRACKETS ON 2' GALVANIZED "C" CHANNELS, 2 EA. SIDE, 18" APART

ALL VAULTS SHALL HAVE A SUMP CAST IN PLACE FOR DE--WATERING

GROUND COVER OVER ALL VAULTS SHOULD BE 36" MINIMUM DEPTH BELOW FINISHED STREET OR SIDEWALK ELEVATION UNLESS OTHERWISE SPECIFIED IN THE VAULT DETAILS OR ON ANY RIGHT-OF-WAY PERMIT ISSUED. IN ADDITION, DEPTH OF COVER OVER MANHOLES SHALL NOT EXCEED 60" OF COVER TO THE TOP OF THE VAULT OR PER VAULT MANUFACTURER'S SPECIFICATIONS.

EXCAVATION OVER VAULTS IS CONSIDERED PART OF THE TOTAL VAULT INSTALLATION.

IF ANY FIELD SLOTTING OF PRECAST CONCRETE VAULTS IS REQUIRED TO PROVIDE ACCESS FOR CABLES AND CONDUIT NOT PROVIDED WITH A BLOCKOUT FOR THAT PURPOSE; THE FIELD SLOT SHALL BE REPAIRED BY SPLICING ANY REINFORCING REBAR THAT HAS BEEN CUT TO ALLOW CABLE ENTRY AND SHALL BE SEALED WITH NON--SHRINK CONCRETE GROUT. THE CONTRACTOR SHALL NOTIFY OWNER IMMEDIATELY IF IT BECOMES EVIDENT FIELD SLOTTING WILL BE NECESSARY. FIELD SLOTS SHALL BE SAWCUT (SCORED INSIDE AND OUT) AND BRUSH HAMMER TO PROVIDE A ROUGHENED SURFACE FOR GROUT BONDING AND TO MINIMIZE REINFORCING SPLICES.

EXCAVATION FOR ALL PRECAST VAULTS AND HANDHOLES MUST ALLOW FOR OVERALL ASSEMBLED HEIGHT OF THE VAULT PLUS ADDED HEIGHT OF RISERS AND BEDDING MATERIAL CONSISTING OF 6" OF COMPACTED SAND OR GRAVEL, GRADED LEVEL. A MINIMUM EXCAVATION CLEARANCE OF 4" AROUND THE SIDEWALLS OF THE VAULT IS REQUIRED FOR EASE OF INSTALLATION.


BACKFILL AROUND ALL VAULTS SHOULD CONSIST OF COMPACTED SELECT BACKFILL MATERIAL OR IN ACCORDANCE WITH AGENCY SPECIFIED BACKFILL. IN NO CASE SHALL THE MATERIAL BE SATURATED SOIL, OR CONTAIN LARGE ROCKS OR CHUNKS. NO VOIDS SHOULD REMAIN BETWEEN THE VAULT WALLS AND NATIVE SOIL OF EXCAVATION. BACKFILLING SHOULD NOT BE DONE UNTIL THE VAULT IS COMPLETELY ASSEMBLED MAKING CERTAIN TO COMPACT THE BACKFILL PROGRESSIVELY IN 12" LIFTS FROM THE BOTTOM TO THE TOP SURFACE. WHEN USING MECHANICAL VIBRATORY EQUIPMENT TO OBTAIN 95% COMPACTION NEAR COMPOSITE VAULTS AND HANDHOLES, CONTRACTOR IS TO PLACE INTERNAL CROSS--BRACING PER MANUFACTURER SPECIFICATIONS.

ALL BACKFILLING IS THE RESPONSIBILITY OF THE CONTRACTOR.

ALL GROUTING OF RISERS, COVERS, CONDUIT, OR SPECIFIC SECTIONS OF VAULTS IS THE RESPONSIBILITY OF THE CONTRACTOR. NON--SHRINK CONCRETE GROUT WILL BE USED TO SEAL ALL JOINTS AND APPLIED IN A MANNER TO ENSURE COMPLETE FILLING OF VOIDS IN THE JOINT BEING SEALED.

ACCESS DOORS SHALL BE CONSTRUCTED OF STEEL, ALUMINUM, OR CONCRETE WITH AN APPROVED NON--SLIP SURFACE HAVING A STATIC COEFFICIENT OF FRICTION BETWEEN 0.60 AND 1.00 AS DETERMINED BY ASTM DESIGNATION C 1028--89. ACCESS DOORS ON INCLINED SURFACES GREATER THAN 4 % SHALL HAVE A COEFFICIENT OF FRICTION BETWEEN 0.80 AND 1.00.

OWNERS ARE RESPONSIBLE TO MAINTAIN THE NON--SLIP CHARACTERISTICS OF THE ACCESS DOOR OVER ITS LIFE IN THE SIDEWALK AREA.



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REVISIONS				
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Clackamas Broadband eXchange

information at the speed of light

CLACKAMAS BROADBAND EXPRESS
STANDARD PLANS FOR CONSTRUCTION
GENERAL NOTES

CITY: CITY – TOWNSHIP RANGE SECTION: COUNTY: COUNTY CO., STATE

PLOT DATE: 12/06/2016	SCALE: AS SHOWN	PROJECT NAME--FILENAME.DWG – TAB_SHEET # CBX--DT00.DWG – GN02_1.4	SHEET 1.4
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SPECIFICATION SET

EXISTING MANHOLE ACCESS:

THE CONTRACTOR SHALL CORE DRILL EXISTING CONCRETE WALLS TO PROVIDE ACCESS FOR CONDUIT AS SHOWN IN THE PLANS. CORE DRILLING SHALL PROVIDE A MINIMUM 1 INCH LARGER DIAMETER HOLE THAN THE SIZE OF CONDUIT BEING PLACED. THE CONTRACTOR SHALL SEAL THE VOID BETWEEN THE CONDUIT AND THE CONCRETE WITH NON-SHRINK EPOXY GROUT.

THE CONTRACTOR SHALL REPAIR ANY STRUCTURAL REINFORCING DAMAGED BY CORE DRILLING. REINFORCING REPAIR SHALL BE IN CONFORMANCE WITH THE REQUIREMENTS AND SPECIFICATIONS OF CRSI (CONCRETE REINFORCED STEEL INSTITUTE).

IF THE CONTRACTOR ELECTS TO ADJUST AN ACCESS HOLE IN WHICH REINFORCING WAS FOUND TO AVOID DAMAGE TO THE REINFORCING STEEL HE SHALL FULLY EXPOSE THE SURFACE OF THE REBAR AND FIELD COAT THE BAR WITH A ZINC RICH PAINT BEFORE PLACING NON-SHRINK EPOXY GROUT TO REPAIR DAMAGE.

LOCATORS AND MARKERS:

THE CONTRACTOR IS RESPONSIBLE FOR PLACING APPROPRIATE MARKERS TO INSURE THAT OTHER UTILITIES WORKING IN THE AREA OF OWNER FACILITIES ARE AWARE OF THEIR PRESENCE BEFORE DAMAGE CAN OCCUR. MARKING WILL BE MADE BY USE OF "WARNING TAPE" AND "POST MARKERS" FOR CONDUIT, AND 3M ELECTRONIC MARKER SYSTEM (EMS) LOCATORS FOR VAULTS AND HANDHOLES.

"WARNING TAPE" SHOULD BE PLACED A MINIMUM OF 12" ABOVE ANY CONDUIT ALONG THE ENTIRE TRENCH ROUTE, WHILE ADDITIONALLY "POST MARKERS" SHOULD BE PLACED EVERY 500' IN SUBURBAN AREAS AND 1000' IN RURAL AREAS.

BOTH VAULTS AND HANDHOLES ARE TO BE EQUIPPED WITH EMS LOCATORS. VAULTS AND HANDHOLES SHALL HAVE EMS MARKERS INSTALLED SECURED ON THE WALL AT THE TOP TO EASE LOCATING.

LOCATE WIRE AND BONDING:

ALL UNDERGROUND TELECOMMUNICATIONS INFRASTRUCTURE CONDUIT SHALL HAVE A #12 AWG HDPE 30 MIL COPPER STRANDED LOCATE WIRE PLACED INSIDE OR ALONG THE CONDUIT ALIGNMENT UNLESS SPECIFIED OTHERWISE BY THE GOVERNING PERMIT AGENCY.

ALL LOCATE WIRE SHALL BE EFFECTIVELY GROUNDED PER INDUSTRY ACCEPTABLE STANDARDS. T-3 LOCATE WIRE ACCESS TERMINALS OR APPROVED EQUIVALENT SHALL BE INSTALLED AT VAULT/HANDHOLE LOCATIONS FOR TERMINATION OF LOCATE WIRE AND HAVE SUFFICIENT ACCESS FOR THE EASE OF LOCATING FACILITIES. LOCATE WIRE TERMINALS ARE TO BE MOUNTED ON AN ACCESSORY ANGLE BRACKET ON THE INTERIOR RISER / WALL OF A CONCRETE VAULT OR INTERIOR WALL OF A FIBERGLASS / COMPOSITE VAULT.

ALL NEW UTILITY VAULT OR HANDHOLE INSTALLATIONS SHALL REQUIRE THE INSTALLATION OF A 5/8" COPPER CLAD GROUND ROD IN OR THROUGH THE BOTTOM OF THE VAULT USING CAUTION NOT TO DAMAGE EXISTING SUBSTRUCTURE. GROUND ROD SHALL BE OF PROPER LENGTH AND PLACEMENT TO ACHIEVE AN EFFECTIVE ELECTRICAL GROUND PER NEC / NESC AND THE GOVERNING PERMIT AGENCY. #6 AWG COPPER WIRE IS TO BE PLACED FROM THE GROUND ROD TO THE GROUND LUG ON THE T-3 LOCATE WIRE TERMINAL. ALL #12 AWG LOCATE WIRE ENTERING VAULTS OR HANDHOLES SHALL BE TERMINATED TO THE T-3 LOCATE WIRE ACCESS TERMINAL USING MANUFACTURER SUPPLIED BINDING POSTS. BONDING STRAPS ARE TO BE INSTALLED BETWEEN ALL #12 BINDING POSTS AND THE #6 GROUND LUG EFFECTIVELY GROUNDING ALL LOCATE WIRE WITHIN THE STRUCTURE.

LOCATE WIRE PLACED THROUGH CONDUIT RISERS WHEN TRANSITIONING FROM UNDERGROUND TO AERIAL ON UTILITY POLES SHALL BE BONDED TO THE MGN ON THE POLE NEAR THE TOP OF THE RISER. IF NO MGN IS PRESENT A NEW #6 AWG VERTICAL GROUND AND 5/8" COPPER CLAD GROUND ROD SHALL BE PLACED PER NESC / NEC GUIDELINES TO ACCOMMODATE EFFECTIVE GROUNDING.

PRIOR TO TOUCHING, WORKING OR CONNECTING LOCATING EQUIPMENT TO LOCATE WIRE, THE SYSTEM MUST BE TESTED FOR INDUCED VOLTAGE. INSTALL FILTER PROTECTOR / ARRESTOR AS REQUIRED ON ONE OR BOTH LOCATE WIRES IF INDUCED VOLTAGE EXCEEDS 50VAC.

*ALL LOCATE WIRE TERMINATION AND BONDING OF CONDUCTIVE MATERIALS TO BE IN ACCORDANCE WITH THE LATEST VERSION OF THE NATIONAL ELECTRIC SAFETY CODE AND THE NATIONAL ELECTRIC CODE.

BUILDING CONSTRUCTION:

ALL WORK SHALL BE DONE IN A "NEAT AND WORKMAN" LIKE MANNER, IN CONFORMITY WITH LOCAL, STATE AND FEDERAL BUILDING CODES. ALL WORK MUST COMPLY WITH APPLICABLE DATA SYSTEM STANDARDS AND NATIONAL ELECTRIC CODE STANDARD SPECIFICATIONS. STANDARDS INCLUDE, BUT ARE NOT LIMITED TO, EIA/TIA 568-B COMMERCIAL BUILDING WIRING STANDARDS AND EIA/TIA 569-A COMMERCIAL BUILDING STANDARD FOR TELECOMMUNICATIONS PATHWAYS AND SPACES.

AS-BUILT DATA – METHOD OF PROCEDURE:

UPON NOTIFICATION OF COMPLETION OF THE WORK AND ACCEPTANCE BY THE OWNER, THE CONTRACTOR SHALL PROVIDE THE PROJECT MANAGER WITH A SET OF NEAT AND ACCURATE "AS-BUILT" DRAWINGS WITHIN 10 BUSINESS DAYS OF COMPLETION OF THE PROJECT.

AS-BUILT DATA SHALL BE UPDATED AND MAINTAINED DAILY ON FIELD COPY DRAWINGS FOR THE DURATION OF CONSTRUCTION. UPON COMPLETION OF THE PROJECT, THE AS-BUILT DATA SHALL BE TRANSFERRED TO A CLEAN SET OF CONSTRUCTION DRAWINGS FOR SUBMITTAL TO THE PROJECT MANAGER.

THE AS-BUILT DATA SHALL BE DETAILED ON THE DRAWINGS IN EITHER COLORED INK OR COLORED PENCIL ACCORDING TO THE FOLLOWING COLOR CODES:

RED: WORK PLACED ACCORDING TO DESIGN AND CHANGES TO THE DESIGN
GREEN: WORK NOT PLACED ACCORDING TO THE DESIGN; OMIT FROM DESIGN
BLUE: EXISTING UTILITIES, FACILITIES, COMMENTS AND NOTES

- 1) WORK PERFORMED ACCORDING TO THE DESIGN SHALL BE HIGHLIGHTED OR LOCATED IN RED.
- 2) WORK PERFORMED ACCORDING TO APPROVED CHANGES OR VARIATIONS TO THE DESIGN SHALL BE NEATLY DRAWN AND DETAILED ON THE DRAWINGS SHOWING HOW THE CHANGES WERE CONSTRUCTED IN THE FIELD.
- 3) WORK THAT WAS DESIGNED BUT NOT PERFORMED AS SHOWN ON THE DRAWINGS SHALL BE HIGHLIGHTED OR LOCATED IN GREEN TO SHOW THAT THE WORK FUNCTION WAS NOT CONSTRUCTED AS DESIGNED.
- 4) EXISTING FACILITIES OR UTILITIES ENCOUNTERED; CONSTRUCTION NOTES; ADDITIONAL CONSTRUCTION RELATED INFORMATION IDENTIFIED IN THE FIELD SHALL BE NEATLY DRAWN AND DETAILED IN BLUE.

COLORED HIGHLIGHTER PENS ACCORDING TO THE COLOR CODES AS DETAILED ABOVE ARE ACCEPTABLE. FLUORESCENT YELLOW HIGHLIGHTER PENS ARE NOT AN ACCEPTABLE FORM OF AS-BUILT COLORING.

AS-BUILT DRAWINGS SHALL CONTAIN THE FOLLOWING DATA AT A MINIMUM FOR EACH OF THE FOLLOWING WORK FUNCTIONS:

AERIAL SEGMENTS:

- 1) POINT OF ATTACHMENT HEIGHT FROM THE GROUND TO THE CABLE AND/OR STRAND ON ALL POLES.
- 2) CABLE FOOTAGE (SEQUENTIAL) MARKINGS AT ALL CABLE ENDS; START AND END OF SLACK STORAGE AND CONDUIT ENTRANCE / EXIT POINTS.
- 3) LOCATION OF ALL SLACK STORAGE AND CABLE SPLICE POINTS.
- 4) ANCHOR AND DOWN GUY SIZE PLACED AND LEAD LENGTH BETWEEN THE ANCHOR AND THE POLE.

UNDERGROUND SEGMENTS:

- 1) DEPTH OF CONDUIT MEASURED EVERY 25 FEET AND AT EVERY CHANGE IN DIRECTION ALONG THE CONDUIT ALIGNMENT.
- 2) OFFSET DISTANCE MEASURED EVERY 25 FEET AND AT EVERY CHANGE IN DIRECTION FROM THE ALIGNMENT TO A CURB, EDGE OF PAVEMENT OR OTHER PHYSICAL REFERENCE OBJECT.
- 3) LOCATION AND DEPTH OF VAULTS, HAND HOLES AND JUNCTION BOXES PLACED.
- 4) DEPTH, TYPE AND DIRECTION OF ANY EXISTING UTILITY ENCOUNTERED CROSSING THE CONDUIT ROUTE.
- 5) LOCATION OF MAGNETIC LOCATING TARGETS PLACED.
- 6) CABLE FOOTAGE (SEQUENTIAL) MARKINGS AT ALL CABLE ENDS, START AND END OF SLACK STORAGE, CONDUIT ENTRANCE / EXIT POINTS.
- 7) ACTUAL QUANTITY OF CABLE SLACK STORAGE LEFT IN VAULT LOCATIONS.
- 8) ACTUAL WALL TO WALL MEASUREMENTS OF CONDUIT SEGMENTS BETWEEN VAULTS.
- 9) PROVIDE DETAILED VAULT BUTTERFLY DRAWINGS INCLUDING CONDUIT ENTRY AND EXIT LOCATIONS; CONDUIT SIZE & TYPE; CABLE ROUTING; CABLE COILS; SPLICE CASES; RACKING; LOCATE WIRES; LOCATE TERMINALS; GROUND RODS; GROUNDING; AND GENERAL ORIENTATION.

AS-BUILT DATA – METHOD OF PROCEDURE:

DIRECTIONAL BORING:

- 1) DEPTH OF CONDUIT MEASURED EVERY 10 FEET WITH A RUNNING LINE OFFSET DISTANCE FROM A CURB, EDGE OF PAVEMENT OR OTHER PHYSICAL REFERENCE OBJECT.
- 2) BORE PLAN AND PROFILE DRAWING REFLECTING THE DEPTH AND RUNNING LINE OFFSET MEASUREMENT EVERY 10 FEET THROUGHOUT THE ENTIRE LENGTH OF THE BORE; DETAIL BORE PROFILES WITH DEPTH AND LOCATION OF ALL VISUALLY VERIFIED UTILITIES (I.E. ALL POT-HOLED UTILITIES EXPOSED ALONG THE BORE ALIGNMENT)

- 3) AS-BUILT DRAWINGS SHALL HAVE THE WORDS "AS-BUILT" WITH THE NAME OF THE CONTRACTOR AND THE DATE STAMPED ON EVERY SHEET IN THE DRAWING PACKAGE.

ANY CHANGES OR DEVIATIONS FROM THE CONSTRUCTION DRAWINGS MUST BE APPROVED BY THE PROJECT MANAGER OR THE OWNER PRIOR TO MAKING ANY OF THE SAID CHANGES OR DEVIATIONS.

PHOTO DOCUMENTATION:


ALL UNDERGROUND VAULTS; JUNCTION BOXES, CONDUIT INFRASTRUCTURE; TRENCHES; EXCAVATIONS; AND RESTORATION TO BE CLEARLY PHOTOGRAPHED BEFORE, DURING AND AFTER CONSTRUCTION TO VERIFY THAT CONSTRUCTION PROCEDURES ARE MET. FACILITY ENTRANCES, PULL BOXES, CABLE RACEWAYS, SPLICE CASES, SPLICE TRAYS, TERMINATION RACKS AND OTHER EQUIPMENT OR ELECTRONICS INSTALLED BY CONTRACTOR TO BE PHOTOGRAPHED AT THE TIME OF INSTALLATION TO ENSURE PROPER PROCEDURES ARE MET AND TO PROVIDE ADEQUATE DOCUMENTATION TO SERVE AS ASBUILT RECORD.

GENERAL SPECIFICATIONS DISCLAIMER

THE INFORMATION CONTAINED IN THESE SPECIFICATIONS PROVIDES GENERAL GUIDELINES NECESSARY TO FACILITATE THE INSTALLATION OF COMMUNICATIONS INFRASTRUCTURE. ANY DISCREPANCIES BETWEEN THESE SPECIFICATIONS AND THE LOCAL GOVERNING AUTHORITY OR PERMIT AGENCY IS TO BE VALIDATED WITH THE DESIGNER OR OWNER PRIOR TO CONSTRUCTION. WHERE DETAILS ARE SHOWN, THEY ARE PROVIDED AS A REFERENCE FOR PLACEMENT OF COMMUNICATIONS INFRASTRUCTURE AND ACCEPTABLE INDUSTRY STANDARDS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE INSTALLATION OF ALL INFRASTRUCTURE MEETS THE APPLICABLE LOCAL, REGIONAL AND NATIONAL BUILDING CODES AND SAFETY STANDARDS. COMMSTRUCTURE CONSULTING, LLC. DOES NOT ASSUME LIABILITY FOR THE NEGLIGENCE OF THE INSTALLATION CONTRACTOR AND THEIR ABILITY TO PERFORM ANY ASPECT OF THE WORK HEREIN ACCORDING TO THESE STANDARDS.

REFERENCES:

- EIA/TIA COMMERCIAL BUILDING WIRING STANDARD, 606 AND ALL RECOGNIZED TSBS.
- NATIONAL ELECTRIC SAFETY CODE
- UNDERWRITER’S LABORATORIES (UL): APPLICABLE LISTINGS AND RATINGS
- 1) ALL CONDUIT PLACED ON PRIVATE PROPERTY IS TO BE SCH 40 PVC IF PLACED OUTSIDE THE BUILDING AND EMT IF PLACED WITHIN THE BUILDING. RISER CONDUIT ON THE EXTERIOR OF BUILDING IS TO BE GRC UNLESS OTHERWISE SPECIFIED.
- 2) ALL CONDUIT IS TO BE EQUIPPED WITH INNERDUCT AS SPECIFIED.
- 3) 90 BENDS ARE TO BE "SWEEP" BENDS, 3' RADIUS, UNLESS OTHERWISE SPECIFIED.
- 4) CONDUIT PATHWAYS WITHIN BUILDING INTERIORS SHALL BE SUPPORTED WITH APPROPRIATE HARDWARE SPECIFIC TO THE EXISTING MATERIAL OR STRUCTURE.
- 5) ALL EXTERIOR WALL PENETRATIONS ARE TO BE RESEALED PER BUILDING AND FIRE CODE.
- 6) ALL INTERIOR WALL PENETRATIONS ARE TO COMPLY WITH PERTINENT BUILDING AND FIRE CODES AND ARE TO BE CONSTRUCTED IN SUCH A MANNER AS TO INSURE THE INTEGRITY OF THE PENETRATED WALL.
- 7) ALL PULL BOXES ARE TO BE NEMA TYPE 3R OR EQUIVALENT.
- 8) NOTIFY THE "BUILDING CONTACT" PERSON A MINIMUM OF 48 HOURS PRIOR TO COMMENCING ANY WORK ON THE PREMISES.



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REV	DESCRIPTION	DATE	BY	APP

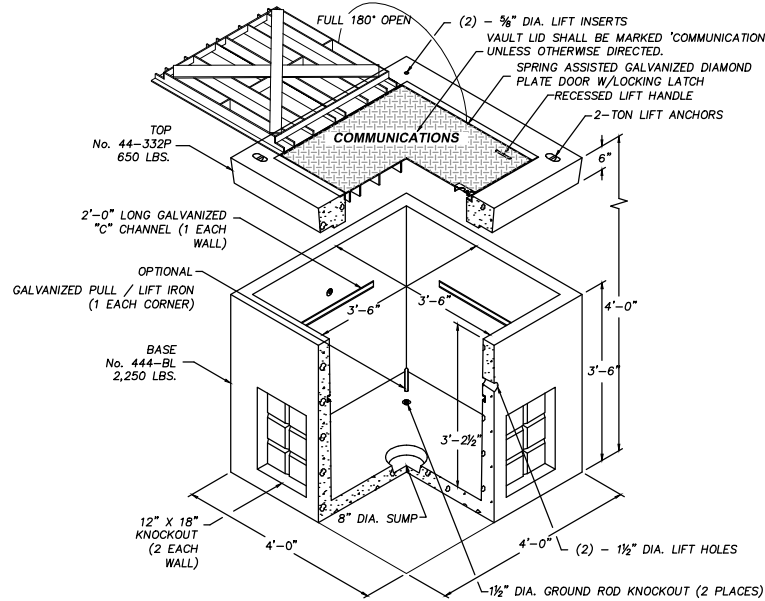
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CLACKAMAS BROADBAND EXPRESS
STANDARD PLANS FOR CONSTRUCTION
GENERAL NOTES

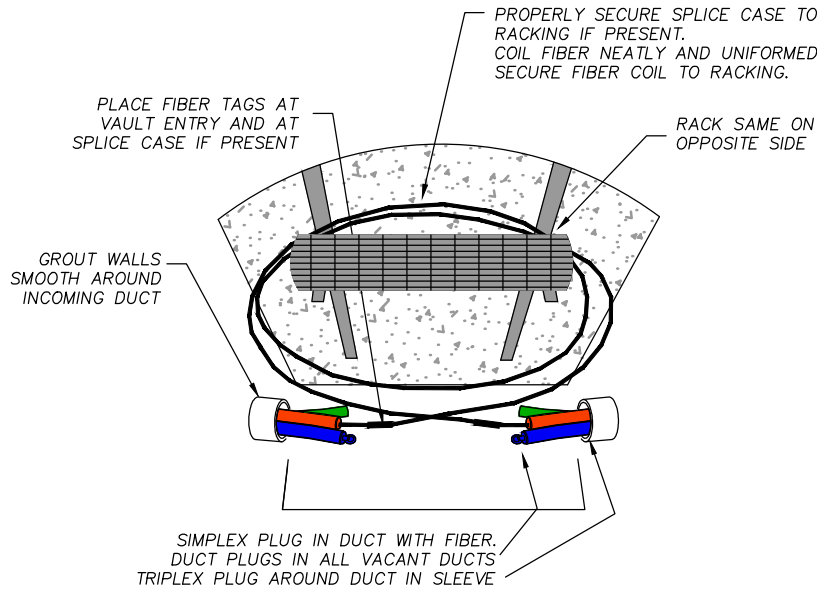
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PLOT DATE: 12/06/2016	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG – TAB_SHEET # CBX-DT00.DWG – GN03_1.5	SHEET	1.5

SPECIFICATION SET



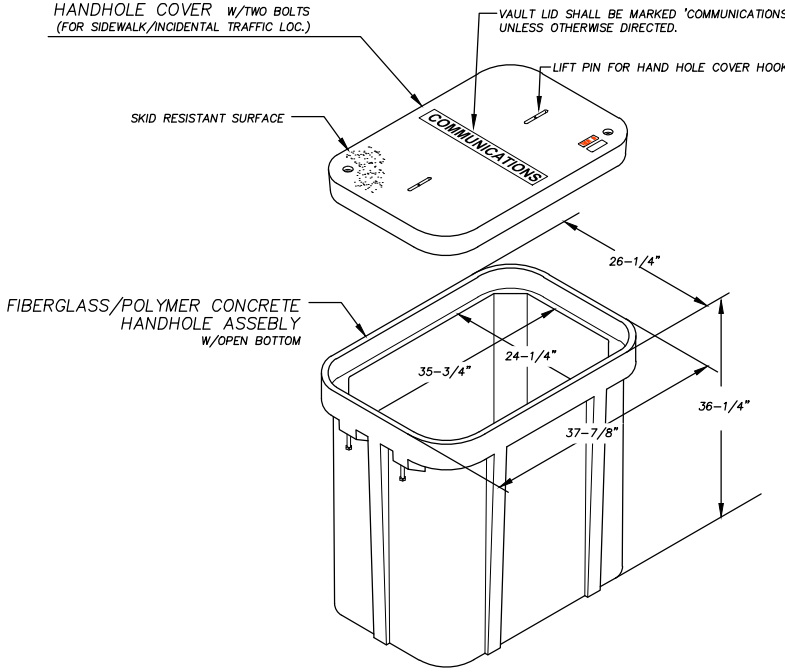
(SIDEWALK / INCIDENTAL TRAFFIC LOC.)
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SCALE: (ADDITIONAL DETAILS SEE 1.1/1.6 & 4/1.6)

1
1.6



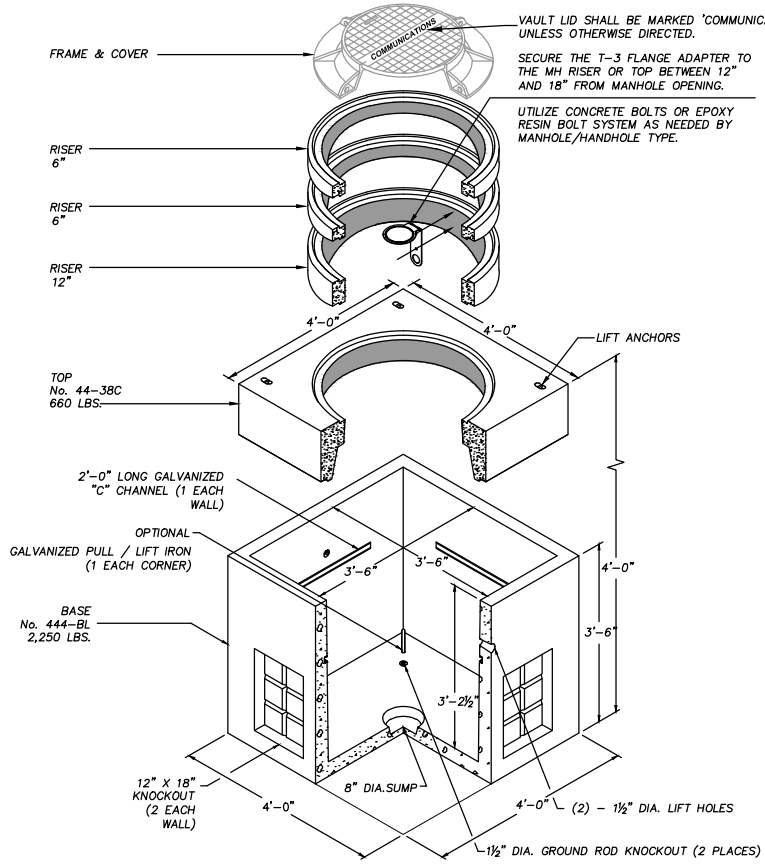
TYPICAL VAULT INTERIOR DETAIL
SCALE: 1"= N.T.S.

4
1.6



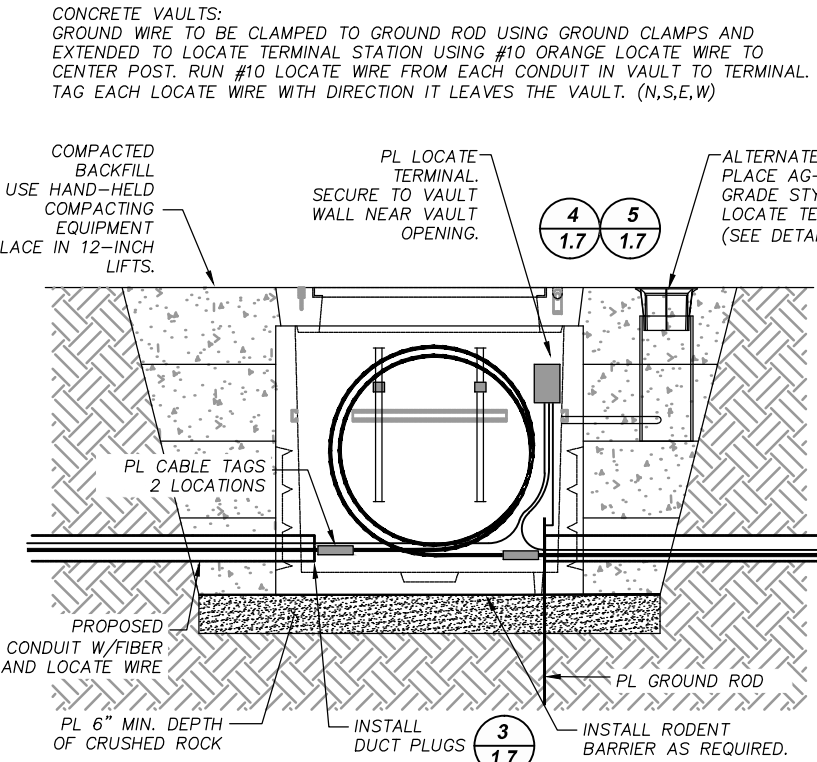
OPEN BOTTOM HANDHOLE
SCALE: (ADDITIONAL DETAILS SEE 3.1/1.6)

3
1.6



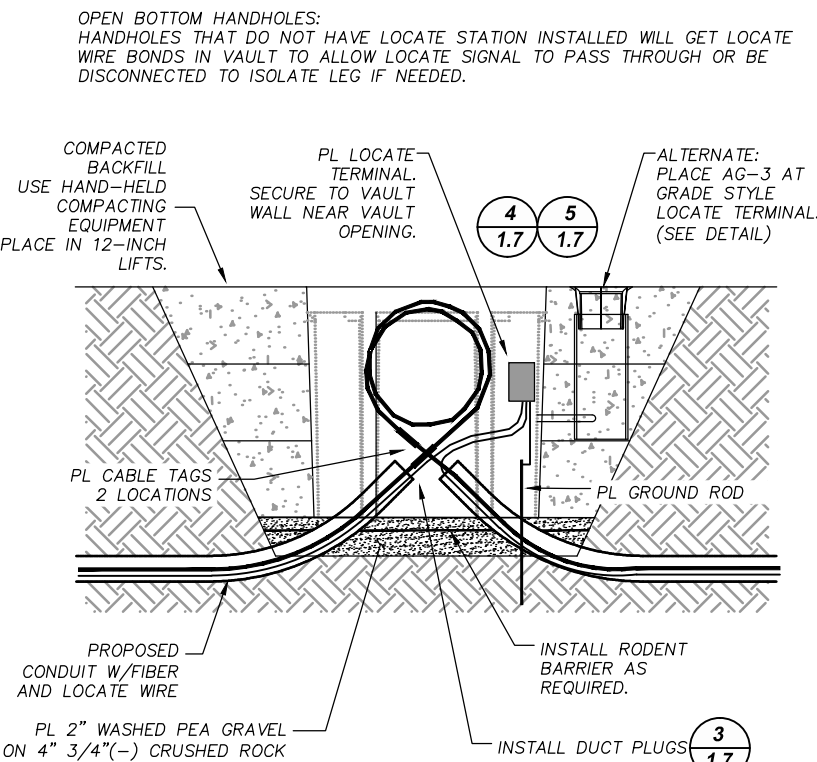
(ROADWAY / SUSTAINED TRAFFIC LOC.)
UTILITY VAULT PRE-CAST 444-LA
SCALE: (ADDITIONAL DETAILS SEE 1.1/1.6 & 4/1.6)

2
1.6



VAULT SECTION INTERIOR DETAIL
UTILITY VAULT PRE-CAST MANHOLE
SCALE: (ADDITIONAL DETAILS SEE 4/1.7 & 5/1.7)

1.1
1.6



VAULT SECTION INTERIOR DETAIL
OPEN BOTTOM HANDHOLE
SCALE: (ADDITIONAL DETAILS SEE 4/1.7 & 5/1.7)

3.1
1.6



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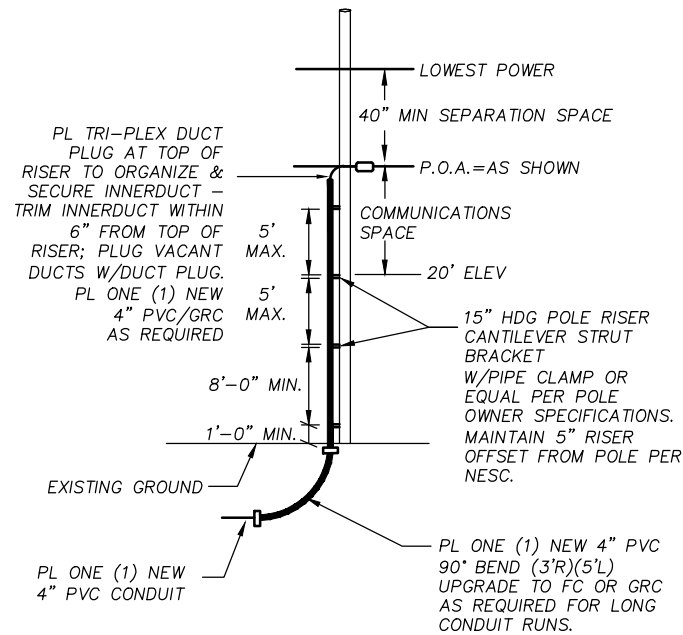
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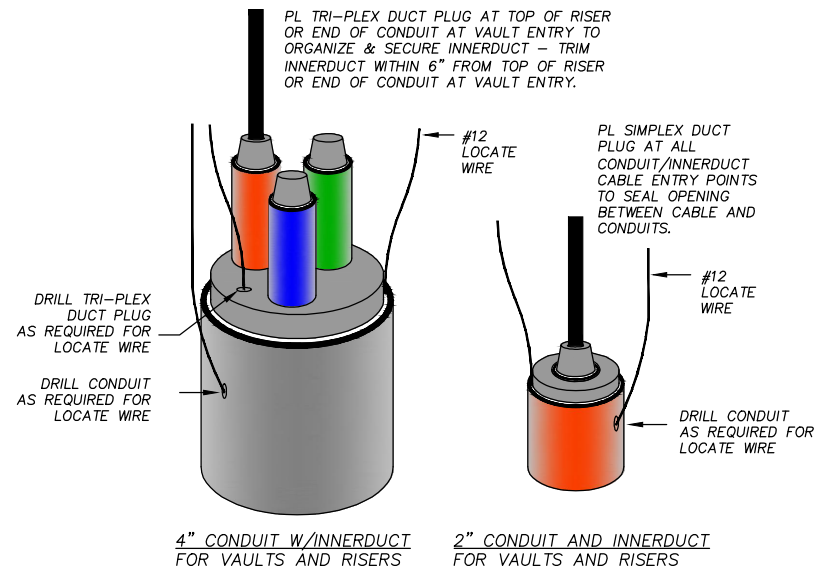
CLACKAMAS BROADBAND EXPRESS
STANDARD PLANS FOR CONSTRUCTION
VAULT DETAILS

CITY: CITY – TOWNSHIP RANGE SECTION:			COUNTY: COUNTY CO., STATE
PLOT DATE: 12/06/2016	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG – TAB_SHEET # CBX-DT00.DWG – DT01_1.6	SHEET 1.6

SPECIFICATION SET

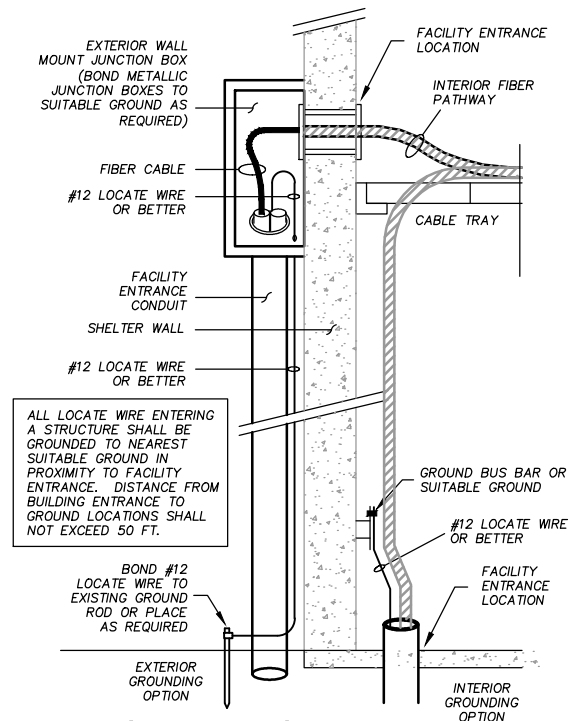


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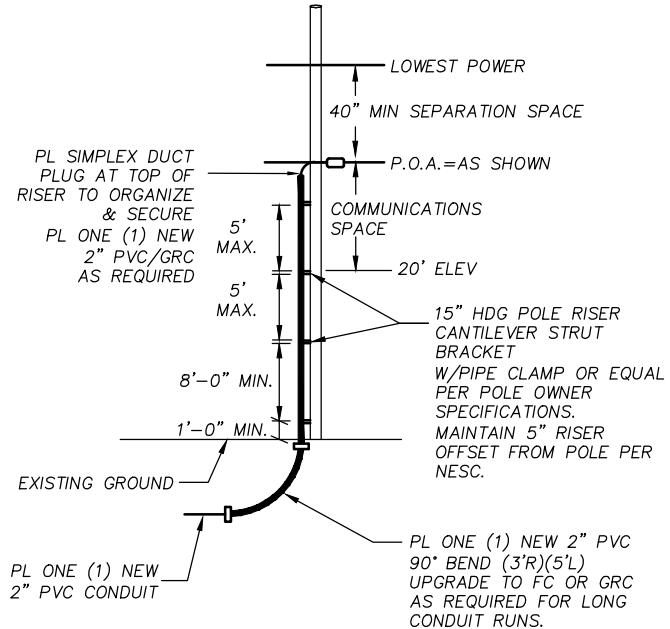
SCALE: 1" = N.T.S.

$$\frac{5}{1.7}$$

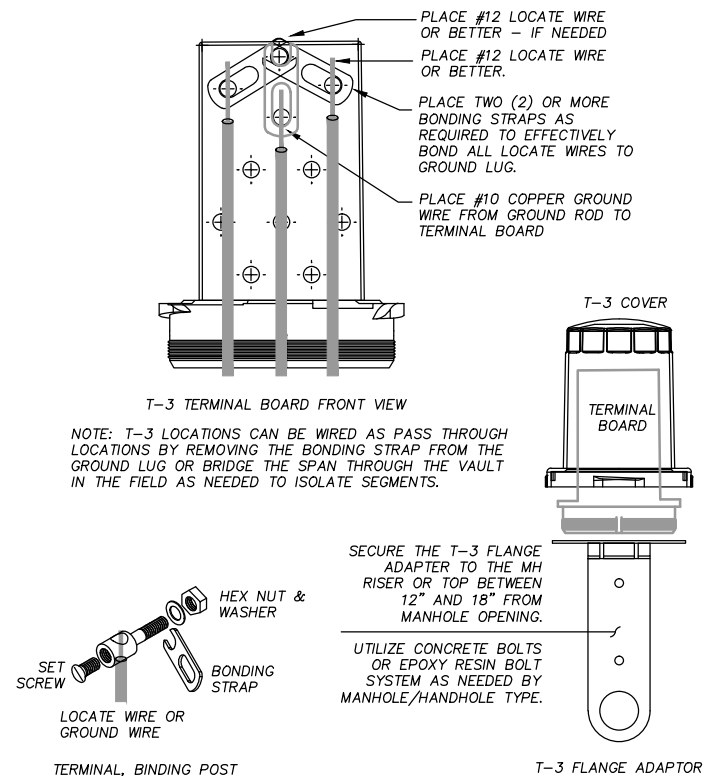


SCALE: 1" = N.T.S.

6
1.7

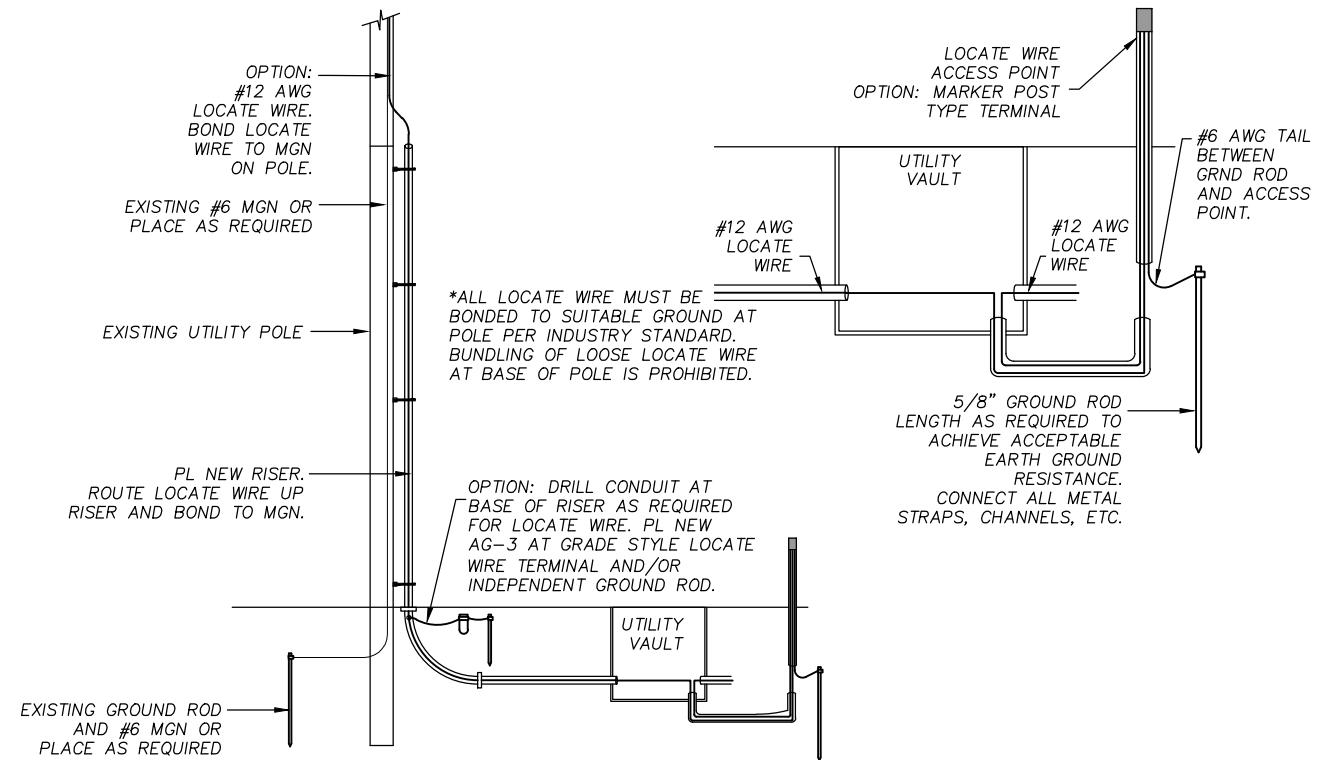


SCALE: (ADDITIONAL DETAILS SEE 3/1.7 & 5/1.7)

$$\frac{2}{1.7}$$


SCALE: 1" = N.T.S.

$$\frac{4}{1.7}$$



SCALE: 1" = N.T.S.

3
1.7



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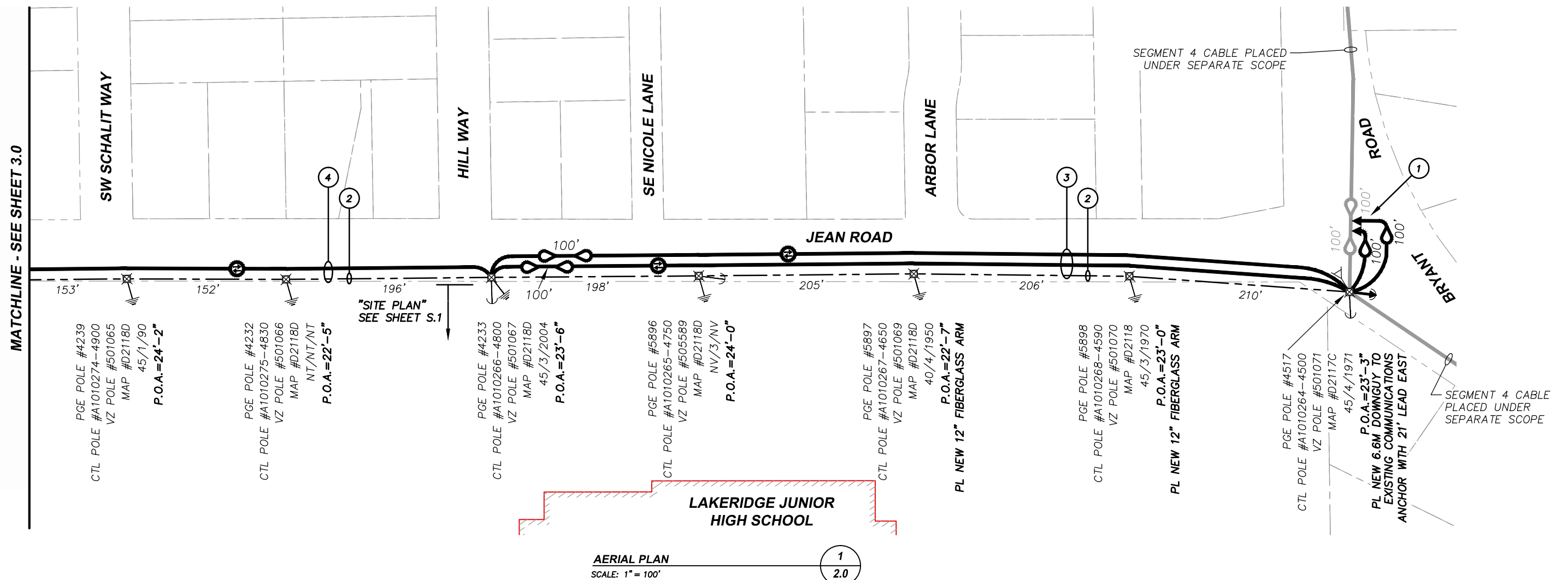
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CLACKAMAS BROADBAND EXPRESS STANDARD PLANS FOR CONSTRUCTION

RISER DETAILS AND LOCATE WIRE / BONDING DETAILS

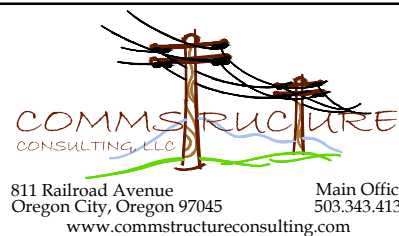
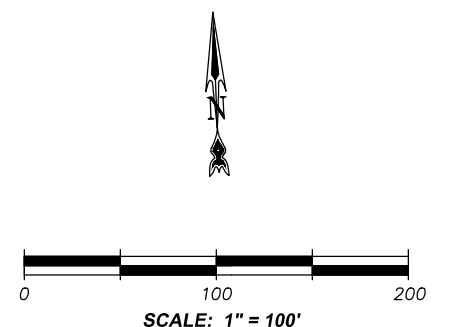
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PLOT DATE: 12/06/2016	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG - TAB_SHEET # CBX-DT00.DWG - DT02_1.7	SHEET 1.7

CONSTRUCTION SET



CONSTRUCTION NOTES

- 1 PROPOSED MID-SHEATH SPLICE LOCATION
EXISTING 200' SLACK STORAGE IN 144F BACKBONE CABLE. (SEGMENT 4)
LEAVE 100' SLACK STORAGE IN NEW 24F LATERAL CABLE. (SEGMENT 10 LAKERIDGE JUNIOR HIGH SCHOOL)
LEAVE 100' SLACK STORAGE IN NEW 24F LATERAL CABLE. (SEGMENT 10 - RIVER GROVE ELEMENTARY SCHOOL)
- 2 PL NEW 6.6M STRAND.
- 3 LASH TWO(2) NEW 24F CABLES TO NEW STRAND.
(PL NEW FIBER TAG AT EACH POLE ATTACHMENT)
- 4 LASH NEW 24F CABLE TO NEW STRAND.
(PL NEW FIBER TAG AT EACH POLE ATTACHMENT)



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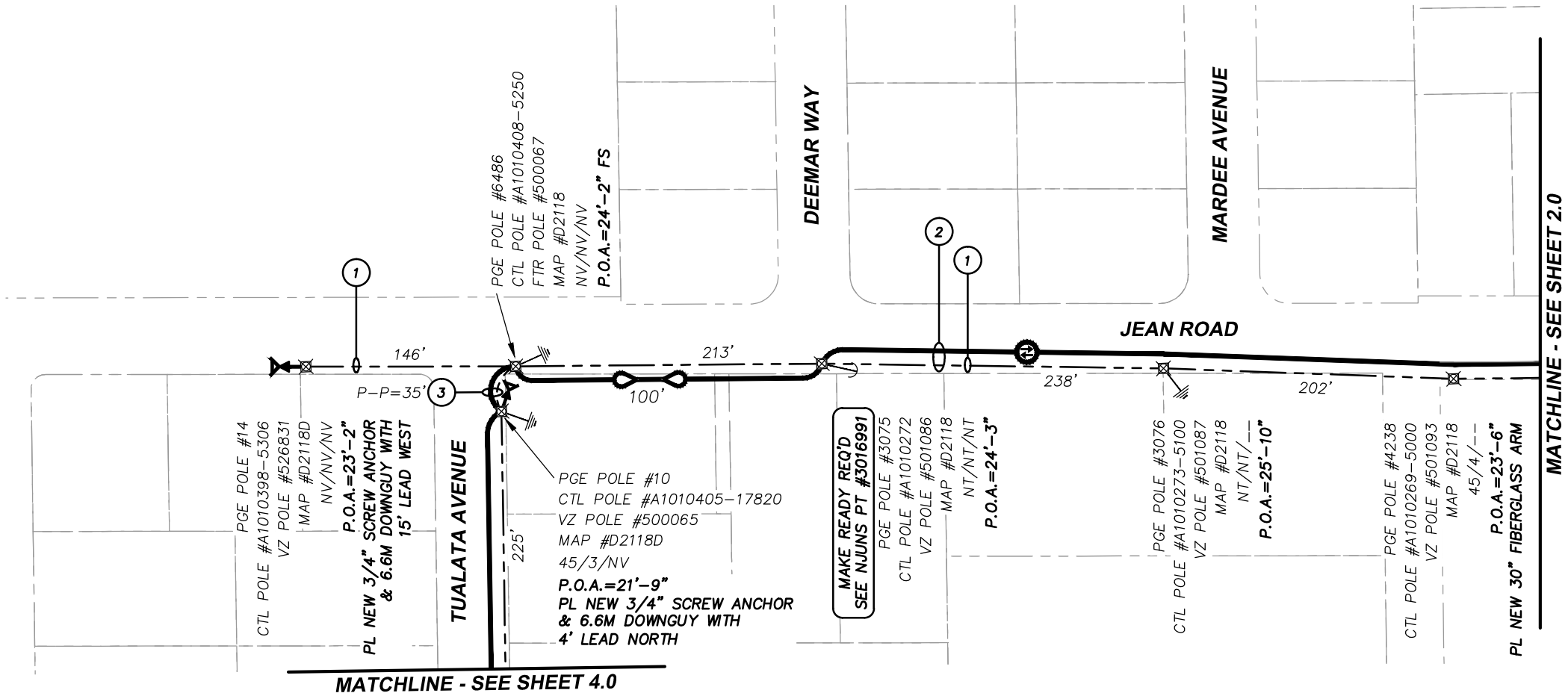
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LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 10 - LAKERIDGE JR. HIGH SCHOOL & RIVER GROVE ELEMENTARY SCHOOL

AERIAL PLAN

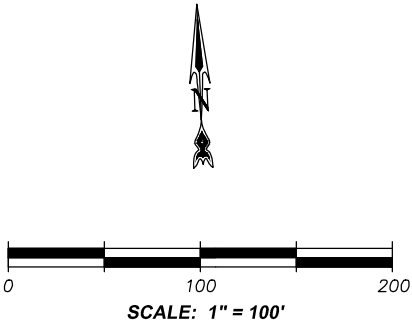
CITY: LAKE OSWEGO - TOWNSHIP 2 SOUTH RANGE 1 EAST SECTION: 17,18,19		COUNTY: CLACKAMAS CO., OREGON	
PLOT DATE: 2/21/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG - TAB_SHEET # LAKEO-S10-DE00.DWG - AP01_2.0	SHEET 2.0



AERIAL PLAN
SCALE: 1" = 100'

CONSTRUCTION NOTES

- 1 PL NEW 6.6M STRAND.
- 2 LASH NEW 24F CABLE TO NEW STRAND.
(PL NEW FIBER TAG AT EACH POLE ATTACHMENT)
- 3 CONSTRUCT NEW SLACK SPAN/REDUCED TENSION.



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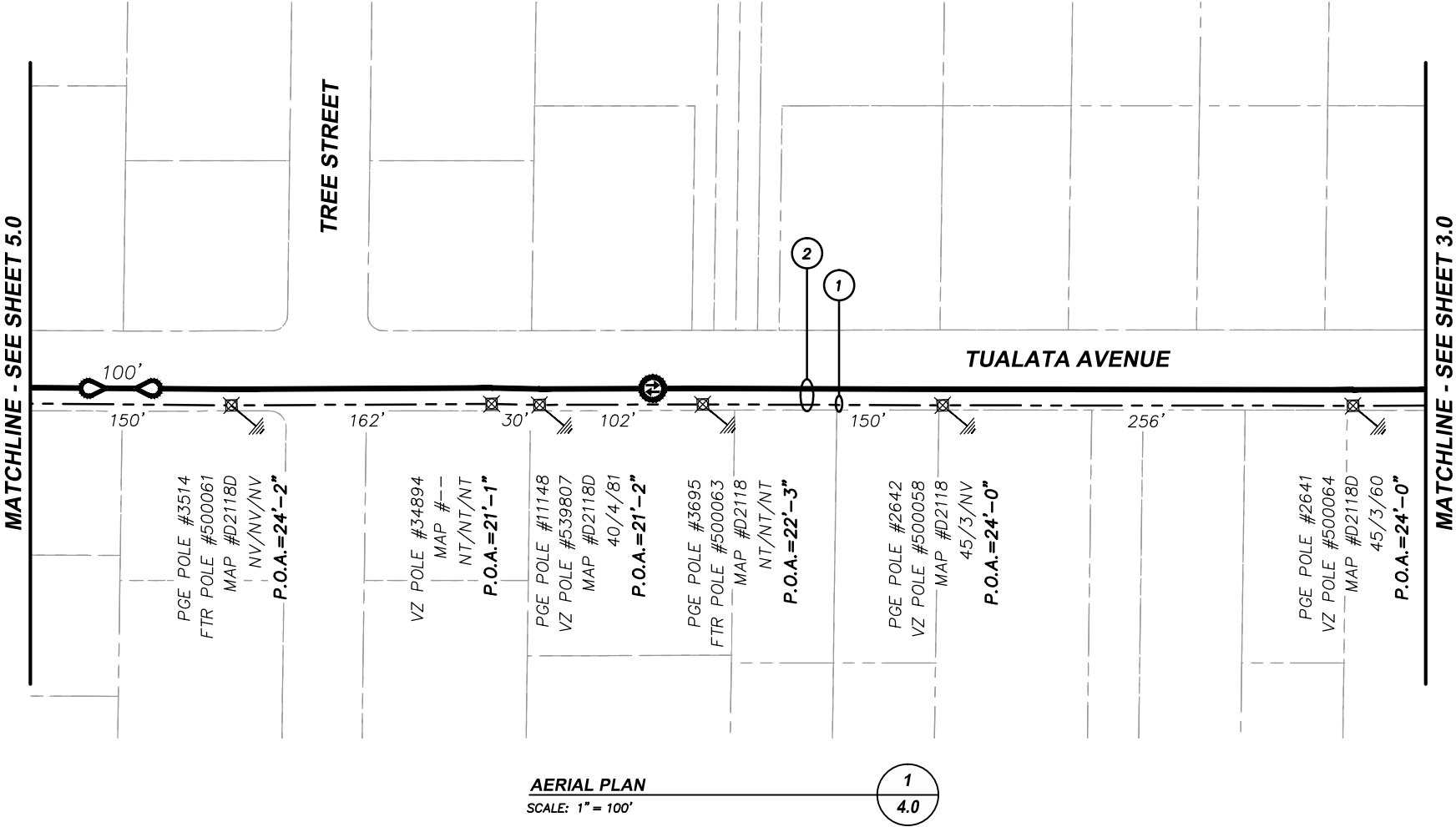
LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 10 - LAKERIDGE JR. HIGH SCHOOL & RIVER GROVE ELEMENTARY SCHOOL

AERIAL PLAN

CITY: LAKE OSWEGO — TOWNSHIP 2 SOUTH RANGE 1 EAST SECTION: 17,18,19 COUNTY: CLACKAMAS CO., OREGON

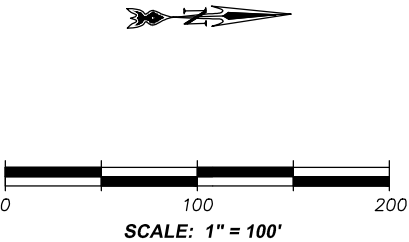
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CONSTRUCTION SET



CONSTRUCTION NOTES

- 1 PL NEW 6.6M STRAND.
- 2 LASH NEW 24F CABLE TO NEW STRAND.
(PL NEW FIBER TAG AT EACH POLE ATTACHMENT)



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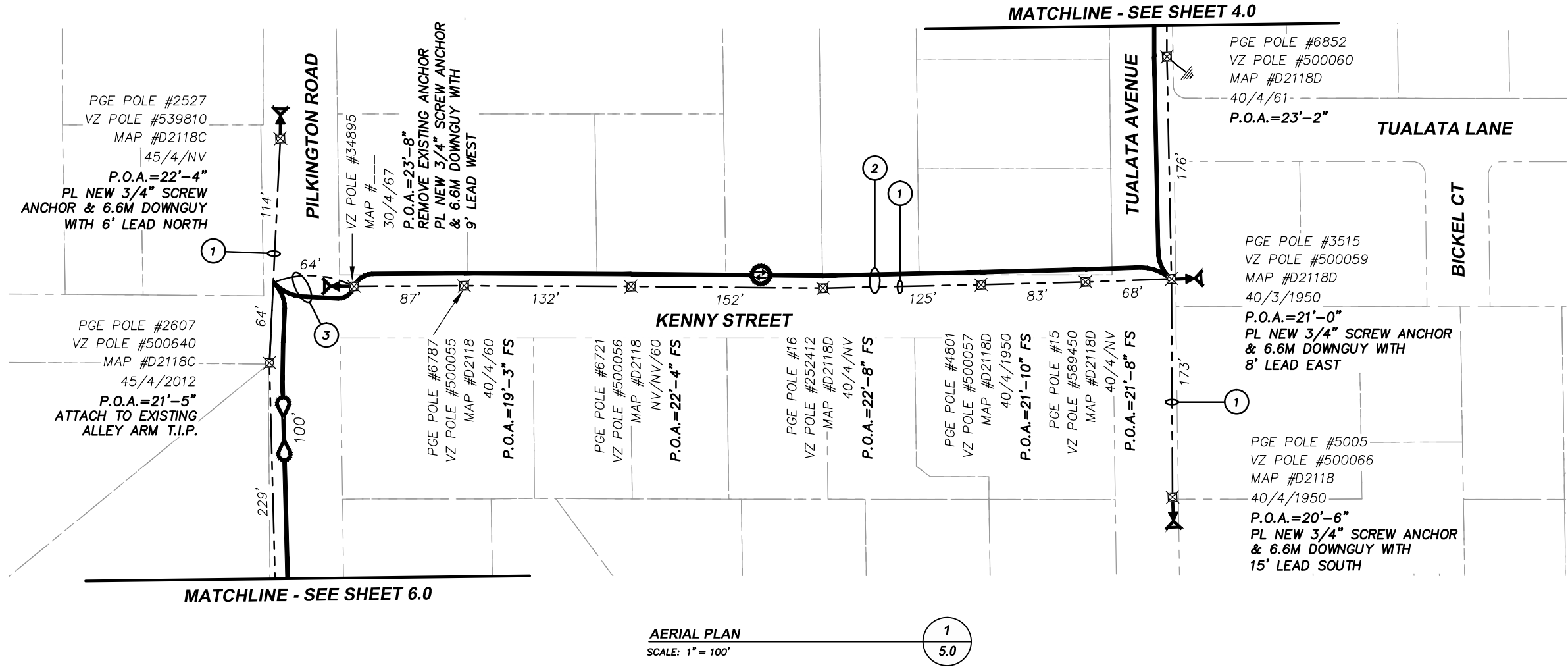
LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 10 - LAKERIDGE JR. HIGH SCHOOL & RIVER GROVE ELEMENTARY SCHOOL

AERIAL PLAN

CITY: LAKE OSWEGO – TOWNSHIP 2 SOUTH RANGE 1 EAST SECTION: 17,18,19 COUNTY: CLACKAMAS CO., OREGON

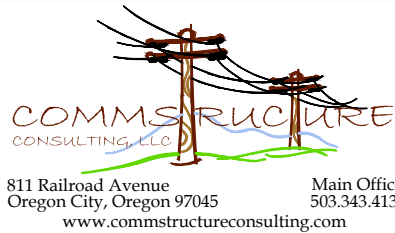
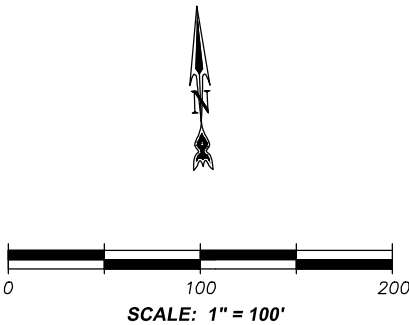
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CONSTRUCTION SET



CONSTRUCTION NOTES

- 1 PL NEW 6.6M STRAND.
- 2 LASH NEW 24F CABLE TO NEW STRAND.
(PL NEW FIBER TAG AT EACH POLE ATTACHMENT)
- 3 CREATE NEW MID-SPAN AERIAL CROSS-OVER.



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REV	DESCRIPTION	DATE	BY	APP

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LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 10 - LAKERIDGE JR. HIGH SCHOOL & RIVER GROVE ELEMENTARY SCHOOL

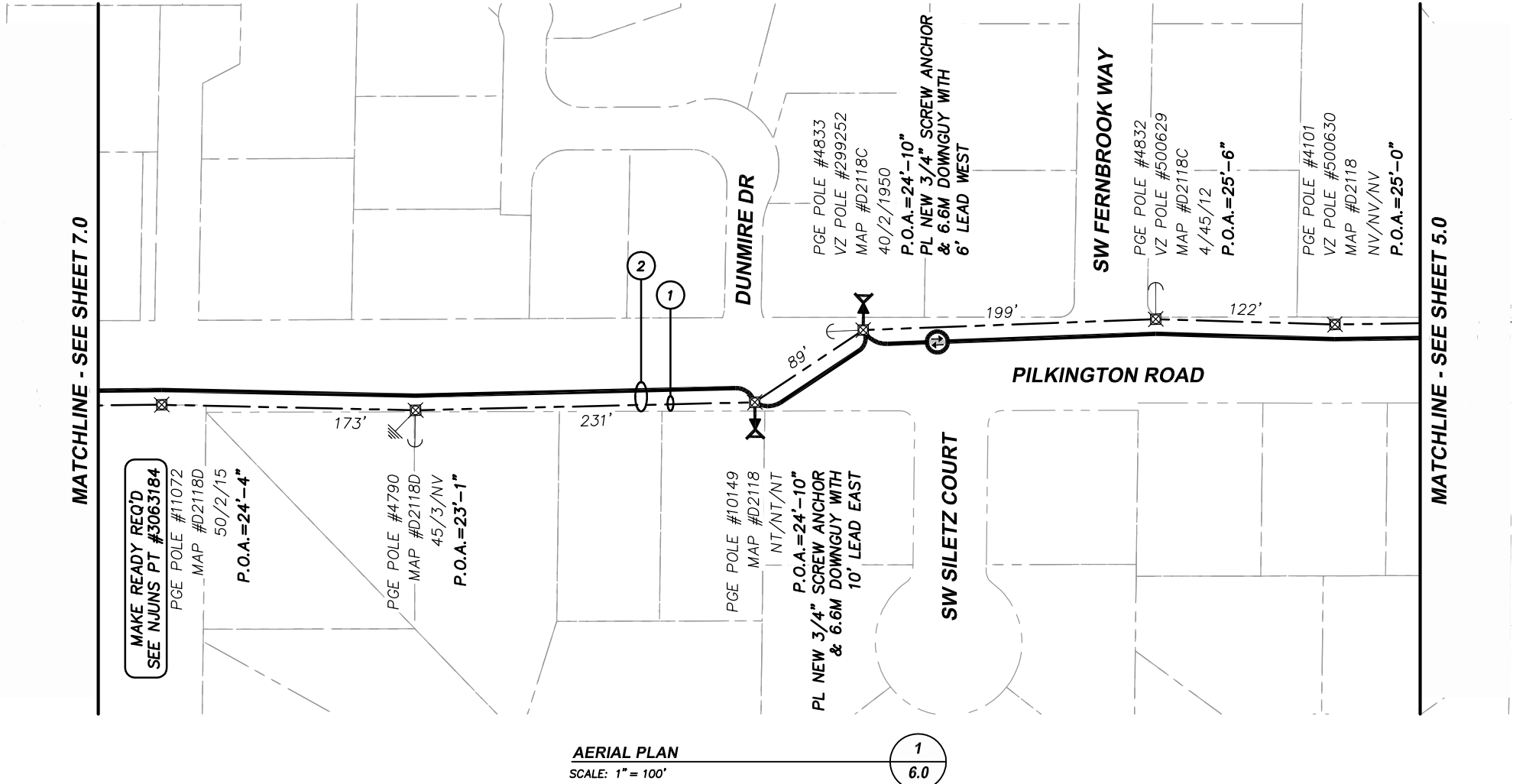
AERIAL PLAN

CITY: LAKE OSWEGO — TOWNSHIP 2 SOUTH RANGE 1 EAST SECTION: 17,18,19
COUNTY: CLACKAMAS CO., OREGON

PLOT DATE: 2/21/2017
SCALE: AS SHOWN
PROJECT NAME-FILENAME.DWG — TAB_SHEET #
LAKEO-S10-DE00.DWG — AP01_5.0

SHEET 5.0

Plot Date: 21 Feb 2017, 4:03pm By User: Tom
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CONSTRUCTION NOTES

- 1 PL NEW 6.6M STRAND.
- 2 LASH NEW 24F CABLE TO NEW STRAND.
(PL NEW FIBER TAG AT EACH POLE ATTACHMENT)

Clackamas Broadband eXchange
information at the speed of light

LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 10 - LAKERIDGE JR. HIGH SCHOOL & RIVER GROVE ELEMENTARY SCHOOL

AERIAL PLAN

CITY: LAKE OSWEGO – TOWNSHIP 2 SOUTH RANGE 1 EAST SECTION: 17,18,19		COUNTY: CLACKAMAS CO., OREGON	
PLOT DATE: 2/21/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG – TAB_SHEET # LAKEO-S10-DE00.DWG – AP01_6.0	SHEET 6.0

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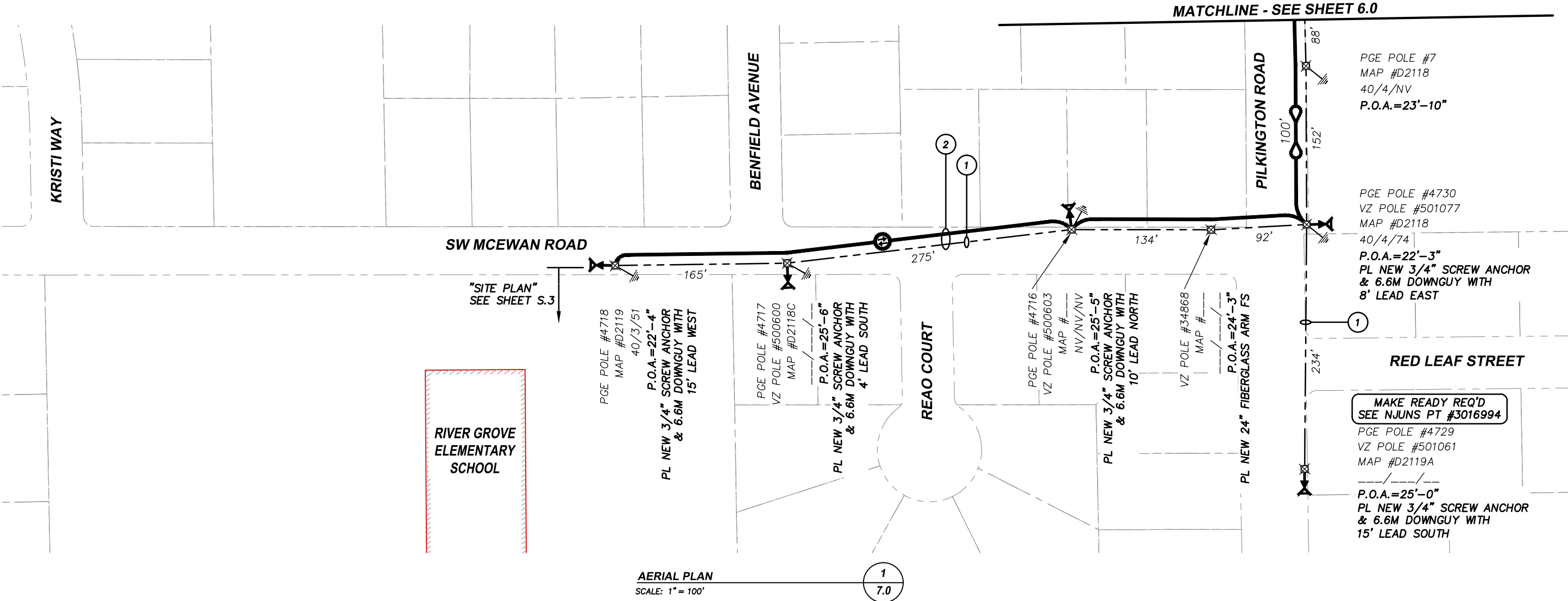
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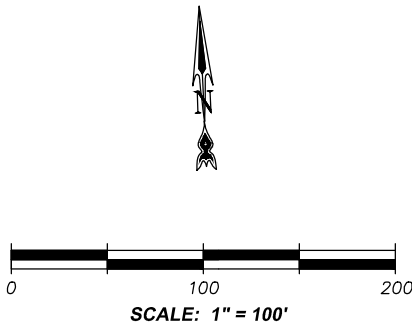
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CONSTRUCTION SET



CONSTRUCTION NOTES

- 1 PL NEW 6.6M STRAND.
- 2 LASH NEW 24F CABLE TO NEW STRAND.
(PL NEW FIBER TAG AT EACH POLE ATTACHMENT)





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Oregon City, Oregon 97045
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Main Office:
503.343.4134

DESIGNED BY: T. WALKER

CHECKED BY: J. GREENWOOD

DRAWN BY: T. BRADLEY

REVISIONS

✓	DESCRIPTION	DATE	BY	APP

Clackamas Broadband eXchange

information at the speed of light

LAKE OSWEGO SCHOOL DISTRICT EXPANSION

SEGMENT 10 - LAKERIDGE JR. HIGH SCHOOL & RIVER GROVE ELEMENTARY SCHOOL

AERIAL PLAN

CITY: LAKE OSWEGO — TOWNSHIP 2 SOUTH RANGE 1 EAST SECTION: 17,18,19

COUNTY: CLACKAMAS CO., OREGON

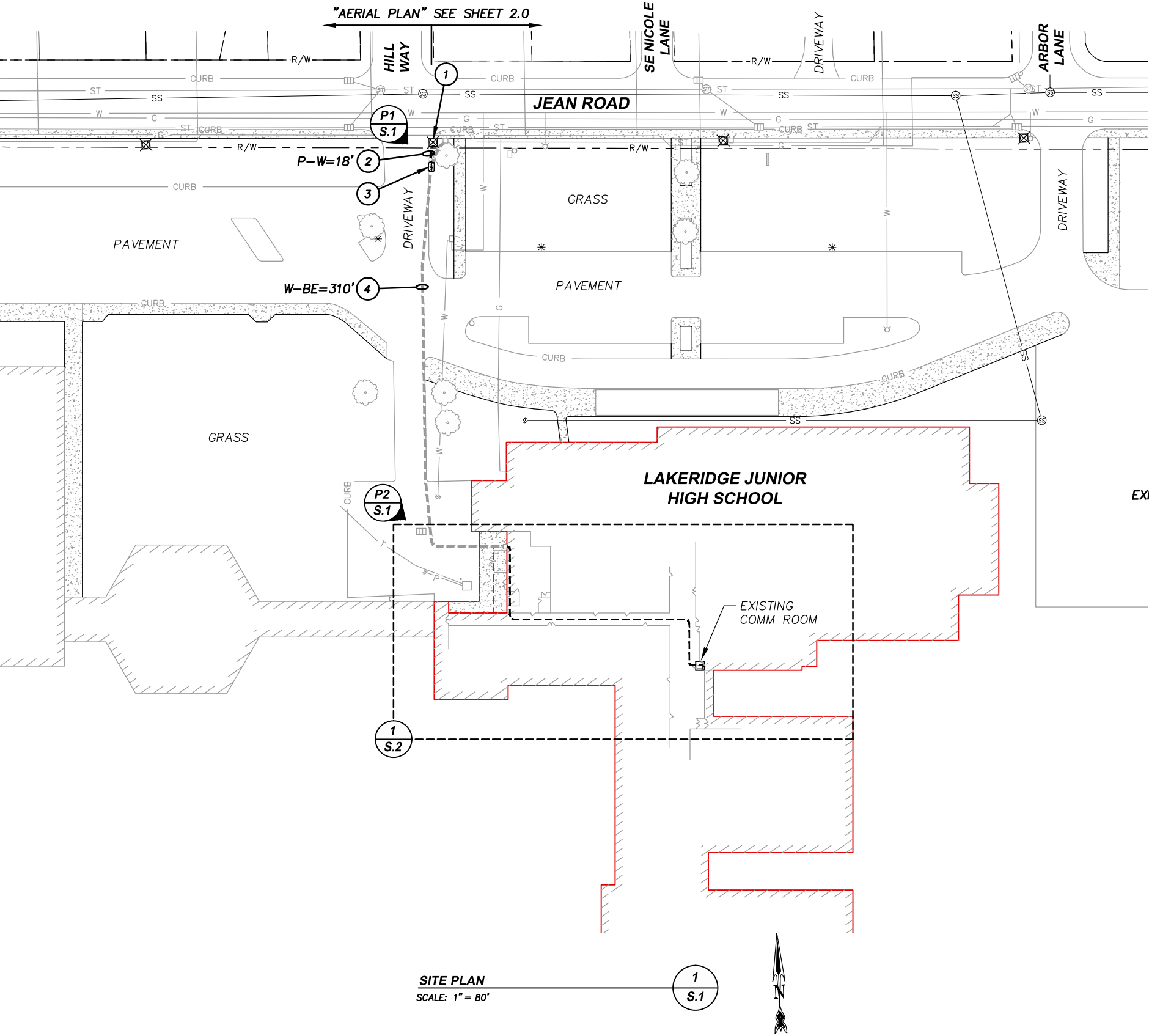
PLOT DATE: 2/21/2017

SCALE: AS SHOWN

PROJECT NAME-FILENAME.DWG — TAB_SHEET # LAKEO-S10-DE00.DWG — AP01_7.0

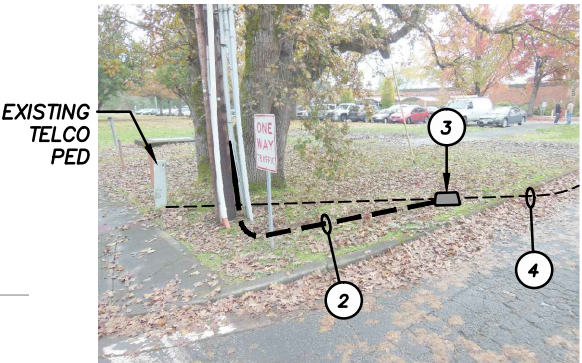
SHEET 7.0

CONSTRUCTION SET



CONSTRUCTION NOTES

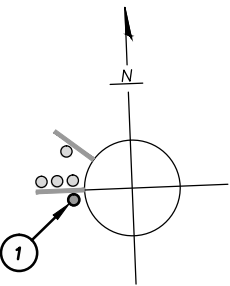
- 1 EXISTING PGE POLE #4233 - PL NEW 2" PVC CONDUIT RISER (10' GRC) ON EXISTING STANDOFF BRACKET.
PL #6 VERTICAL GROUND ON POLE AS REQUIRED - BOND LOCATE WIRE TO MGN ON POLE.
PL NEW 24F CABLE & #12 AWG LOCATE WIRE THROUGH NEW CONDUIT.
- 2 PL NEW 2" SCH-40 PVC CONDUIT FROM PGE POLE #4233 AND TERMINATE IN NEW CBX VAULT.
PL NEW 24F CABLE AND #12 AWG LOCATE WIRE IN CONDUIT FROM RISER TO VAULT.
- 3 PL NEW 24X36X36 OPEN BOTTOM UTILITY VAULT W/ HEAVY DUTY TWO-BOLT LID - INTERCEPT VAULT.
INTERCEPT EXISTING 2" HDPE BUILDING ENTRY CONDUIT.
PL NEW GROUND ROD, LOCATE WIRE ACCESS POINT AND GROUND WIRE IN VAULT.
BOND #12 AWG LOCATE WIRE TO ACCESS POINT.
PL NEW #6 AWG TAIL BETWEEN GROUND ROD & TEST STATION GROUND LUG.
LEAVE 50' SLACK STORAGE IN NEW 24F CABLE COILED IN VAULT.
RESTORE AREA AND LANDSCAPE TO "LIKE NEW" CONDITIONS.
CAUTION EXISTING TELCO CABLE IN EXISTING CONDUIT
- 4 EXISTING 2" SITE ENTRY CONDUIT FROM NEW CBX INTERCEPT VAULT TO LAKERIDGE JUNIOR HIGH SCHOOL BUILDING ENTRY.
PL NEW 24F CABLE AND #12 AWG LOCATE WIRE IN EXISTING CONDUIT.



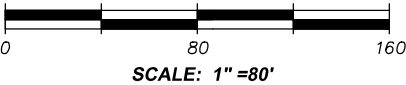
NEW INTERCEPT VAULT P1 S.1
SCALE: N.T.S.



BUILDING ENTRY P2 S.1
SCALE: N.T.S.



PGE POLE #4233 - RISER QUADRANT DETAIL 2 S.1
SCALE: (SEE RISER DETAIL SHEET 1.7)



Plot Date: 21 Feb 2017, 10:32am By User: Tom
Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 10\LAKEO-S10-DE00.DWG Layout (If Any): SP01_S.1

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REV	DESCRIPTION	DATE	BY	APP

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LAKE OSWEGO SCHOOL DISTRICT EXPANSION

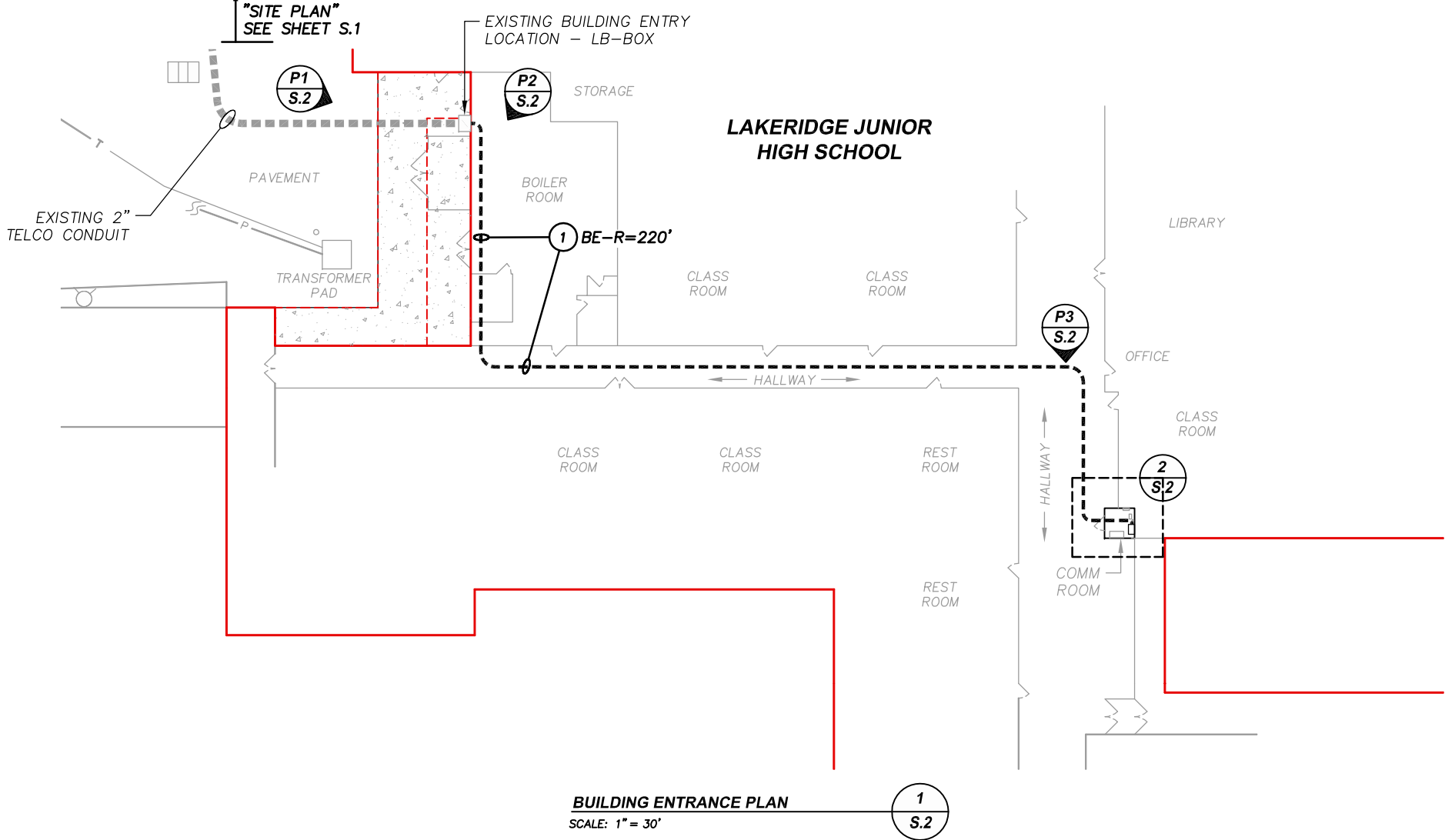
SEGMENT 10 - LAKERIDGE JR. HIGH SCHOOL & RIVER GROVE ELEMENTARY SCHOOL

SITE PLAN

CITY: LAKE OSWEGO - TOWNSHIP 2 SOUTH RANGE 1 EAST SECTION: 17,18,19 COUNTY: CLACKAMAS CO., OREGON

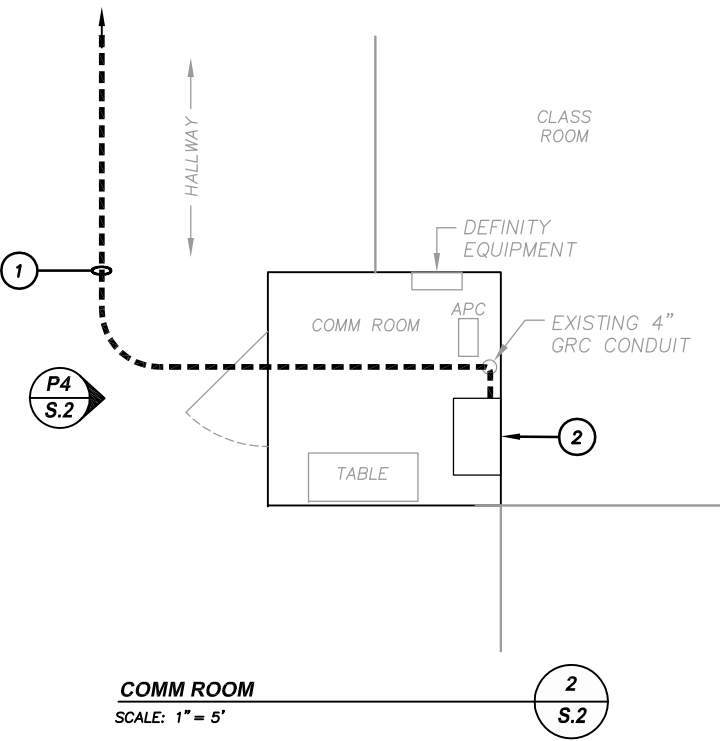
PLOT DATE: 2/21/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG - TAB_SHEET # LAKEO-S10-DE00.DWG - SP01_S.1	SHEET S.1
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CONSTRUCTION SET



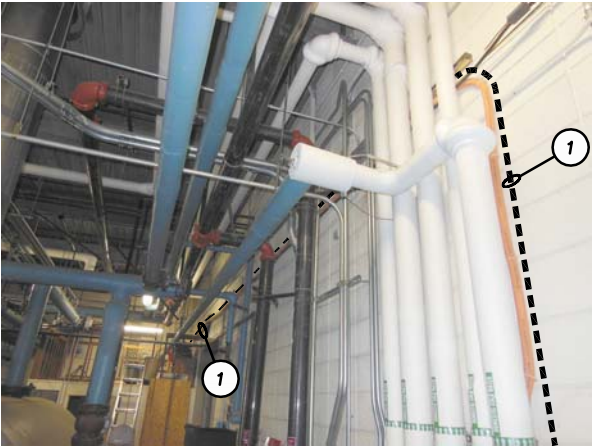
CONSTRUCTION NOTES

- 1 PL NEW 1-1/4" RISER FLEX CONDUIT FROM BUILDING ENTRY TO RACK LOCATION. SECURE TO NEW D-RINGS ON INTERIOR WALL. PL NEW 24F CABLE THROUGH NEW FLEX CONDUIT.
- 2 EXISTING RACK - PROPOSED CBX EQUIPMENT LOCATION. LEAVE 30' SLACK IN NEW 24F CABLE AT RACK FOR SPLICING.



BUILDING ENTRY
SCALE: N.T.S.

P1
S.2



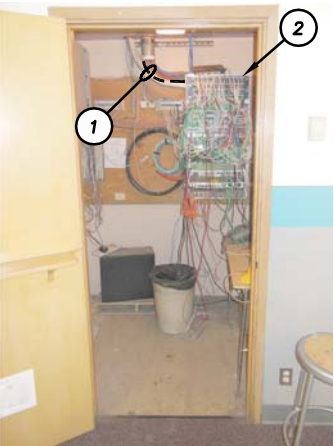
BOILER ROOM
SCALE: N.T.S.

P2
S.2



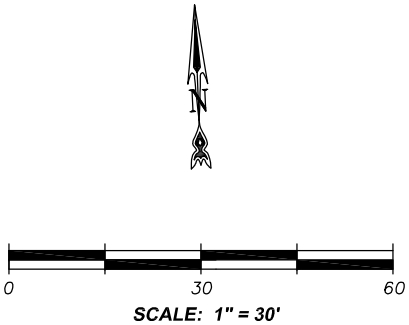
HALLWAY / COMM ROOM
SCALE: N.T.S.

P3
S.2



COMM ROOM
SCALE: N.T.S.

P4
S.2



Plot Date: 21 Feb 2017, 10:45am By User:Tom Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 10\LAKEO-S10-DE00.DWG Layout (If Any): SP01_S.2

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REVISIONS				
REV	DESCRIPTION	DATE	BY	APP

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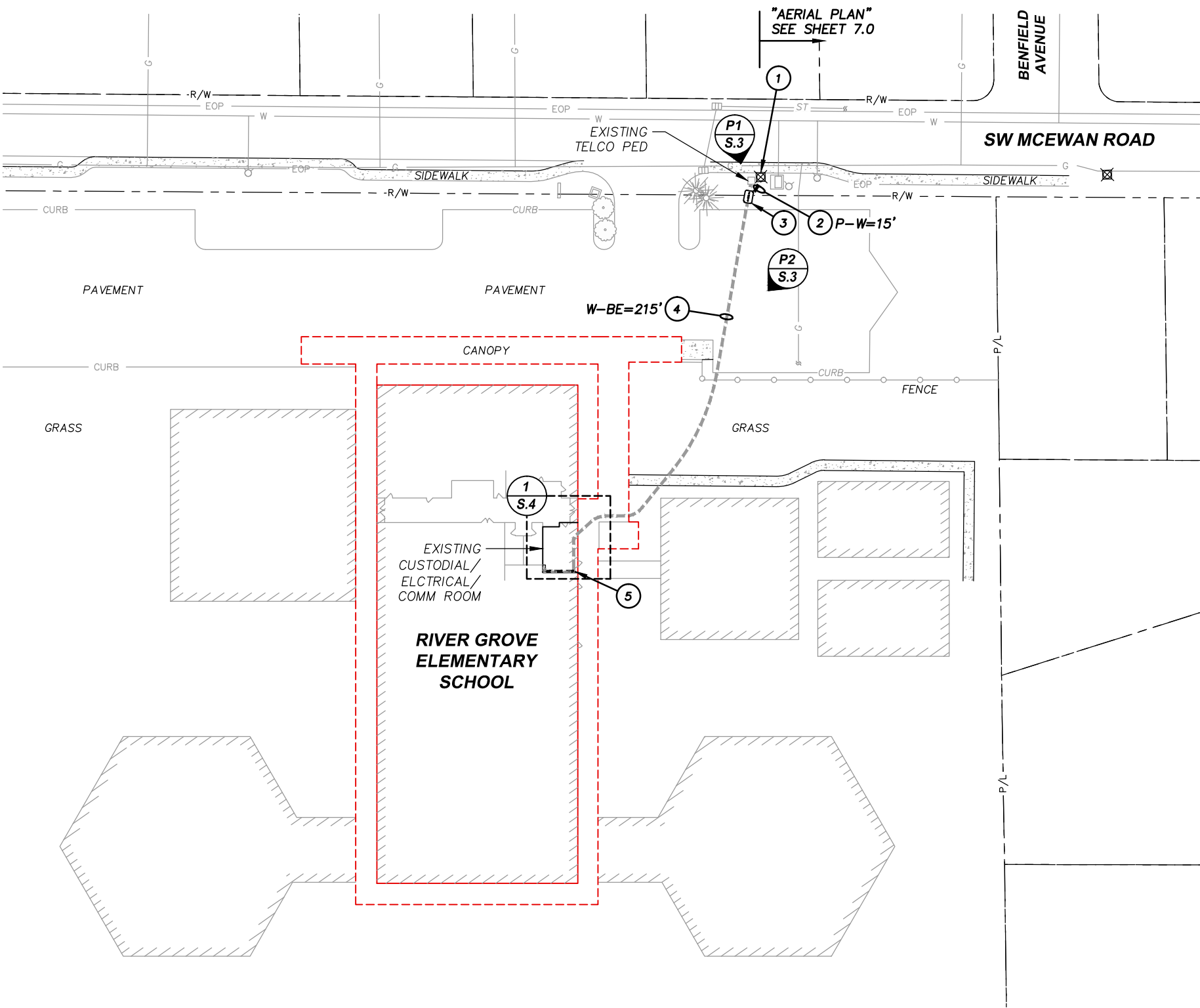
information at the speed of light

LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 10 - LAKERIDGE JR. HIGH SCHOOL & RIVER GROVE ELEMENTARY SCHOOL
BUILDING ENTRANCE PLAN

CITY: LAKE OSWEGO - TOWNSHIP 2 SOUTH RANGE 1 EAST SECTION: 17,18,19 COUNTY: CLACKAMAS CO., OREGON

PLOT DATE: 2/21/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG - TAB_SHEET # LAKEO-S10-DE00.DWG - SP01_S.2	SHEET S.2
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CONSTRUCTION SET

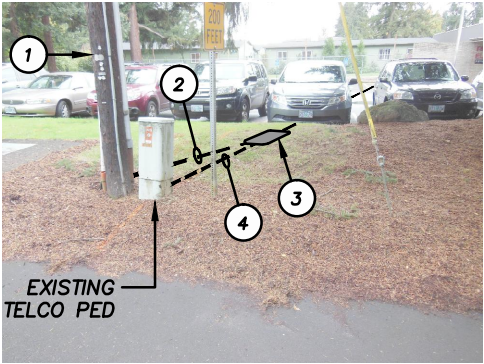


SITE PLAN
SCALE: 1" = 60'

1
S.3

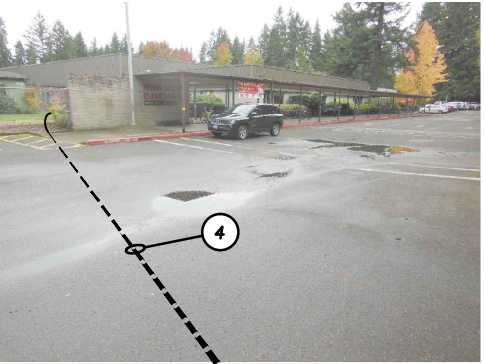
CONSTRUCTION NOTES

- EXISTING PGE POLE #4718 – PL NEW 2" PVC CONDUIT RISER (10' GRC) ON NEW STANDOFF BRACKET. PL #6 VERTICAL GROUND ON POLE AS REQUIRED – BOND LOCATE WIRE TO MGN ON POLE. PL NEW 24F CABLE & #12 AWG LOCATE WIRE THROUGH NEW CONDUIT.
- PL NEW 2" SCH-40 PVC CONDUIT FROM PGE POLE #4718 AND TERMINATE IN NEW CBX VAULT. PL NEW 24F CABLE AND #12 AWG LOCATE WIRE IN CONDUIT FROM RISER TO VAULT.
- PL NEW 24X36X36 OPEN BOTTOM UTILITY VAULT W/ HEAVY DUTY TWO-BOLT LID – INTERCEPT VAULT. INTERCEPT EXISTING 2" HDPE BUILDING ENTRY CONDUIT. PL NEW GROUND ROD, LOCATE WIRE ACCESS POINT AND GROUND WIRE IN VAULT. BOND #12 AWG LOCATE WIRE TO ACCESS POINT. PL NEW #6 AWG TAIL BETWEEN GROUND ROD & TEST STATION GROUND LUG. LEAVE 50' SLACK STORAGE IN NEW 24F CABLE COILED IN VAULT. RESTORE AREA AND LANDSCAPE TO "LIKE NEW" CONDITIONS. *CAUTION EXISTING TELCO CABLE IN EXISTING CONDUIT*
- EXISTING 2" SITE ENTRY CONDUIT FROM NEW CBX INTERCEPT VAULT TO RIVER GROVE ELEMENTARY SCHOOL BUILDING ENTRY. PL NEW 24F CABLE AND #12 AWG LOCATE WIRE IN EXISTING CONDUIT.
- EXISTING BUILDING ENTRY LOCATION. PL NEW 24F CABLE AND #12 AWG LOCATE WIRE THROUGH BUILDING ENTRY CONDUIT AND TRANSITION TO INTERIOR. BOND LOCATE WIRE TO NEAREST BUILDING GROUND PER NEC.



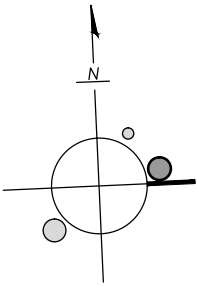
NEW INTERCEPT VAULT
SCALE: N.T.S.

P1
S.3



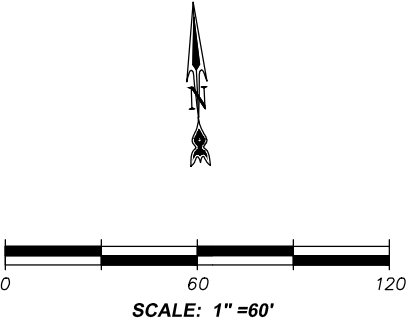
EXISTING TELCO CONDUIT
SCALE: N.T.S.

P2
S.3



PGE POLE #4718 - RISER QUADRANT DETAIL
SCALE: (SEE RISER DETAIL SHEET 1.7)

2
S.3



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LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 10 - LAKERIDGE JR. HIGH SCHOOL & RIVER GROVE ELEMENTARY SCHOOL
SITE PLAN

CITY: LAKE OSWEGO – TOWNSHIP 2 SOUTH RANGE 1 EAST SECTION: 17,18,19		COUNTY: CLACKAMAS CO., OREGON	
PLOT DATE: 2/21/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG – TAB_SHEET # LAKEO-S10-DE00.DWG – SP01_S.3	SHEET S.3

Plot Date: 21 Feb 2017, 10:33am By User: Tom
Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 10\LAKEO-S10-DE00.DWG Layout (If Any): SP01_S.3

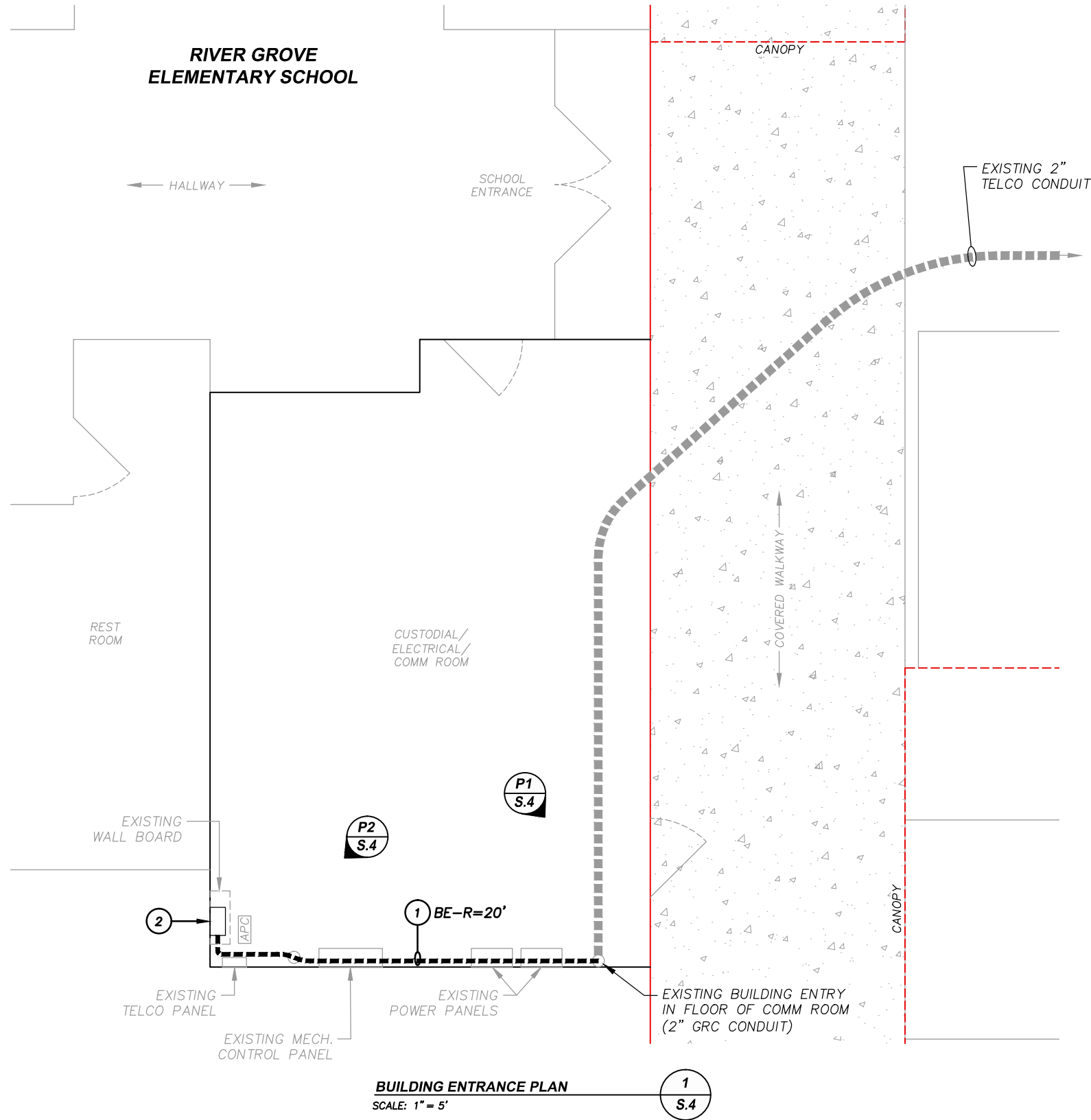
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REVISIONS				
REV	DESCRIPTION	DATE	BY	APP

CONSTRUCTION SET



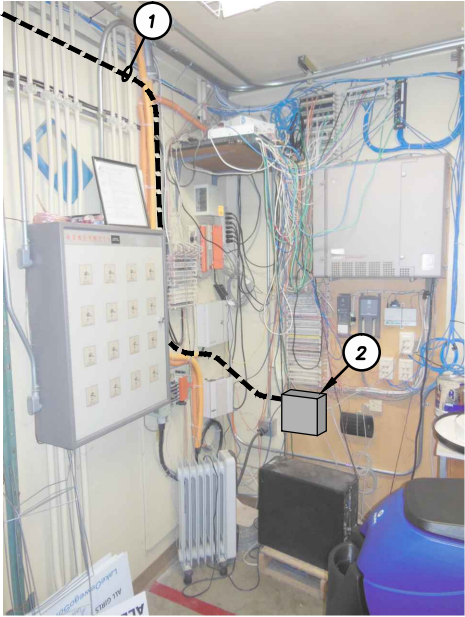
CONSTRUCTION NOTES

- 1 PL NEW 1-1/4" RISER FLEX CONDUIT FROM BUILDING ENTRY TO RACK LOCATION. SECURE TO NEW D-RINGS ON INTERIOR WALL. PL NEW 24F CABLE THROUGH NEW FLEX CONDUIT.
- 2 EXISTING RACK - PROPOSED CBX EQUIPMENT LOCATION. LEAVE 30' SLACK IN NEW 24F CABLE AT RACK FOR SPLICING.



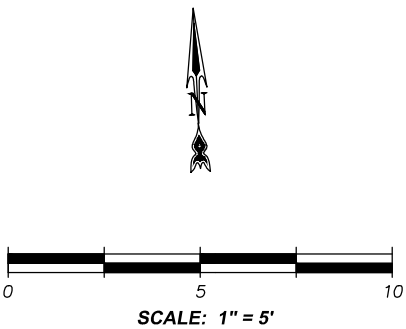
CUSTODIAL / ELECTRICAL / COMM ROOM
SCALE: N.T.S.

P1
S.4



CUSTODIAL / ELECTRICAL / COMM ROOM
SCALE: N.T.S.

P2
S.4



Plot Date: 21 Feb 2017, 10:33am By User: Tom
Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 10\LAKEO-S10-DE00.DWG Layout (If Any): SP01_S.4

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REV	DESCRIPTION	DATE	BY APP

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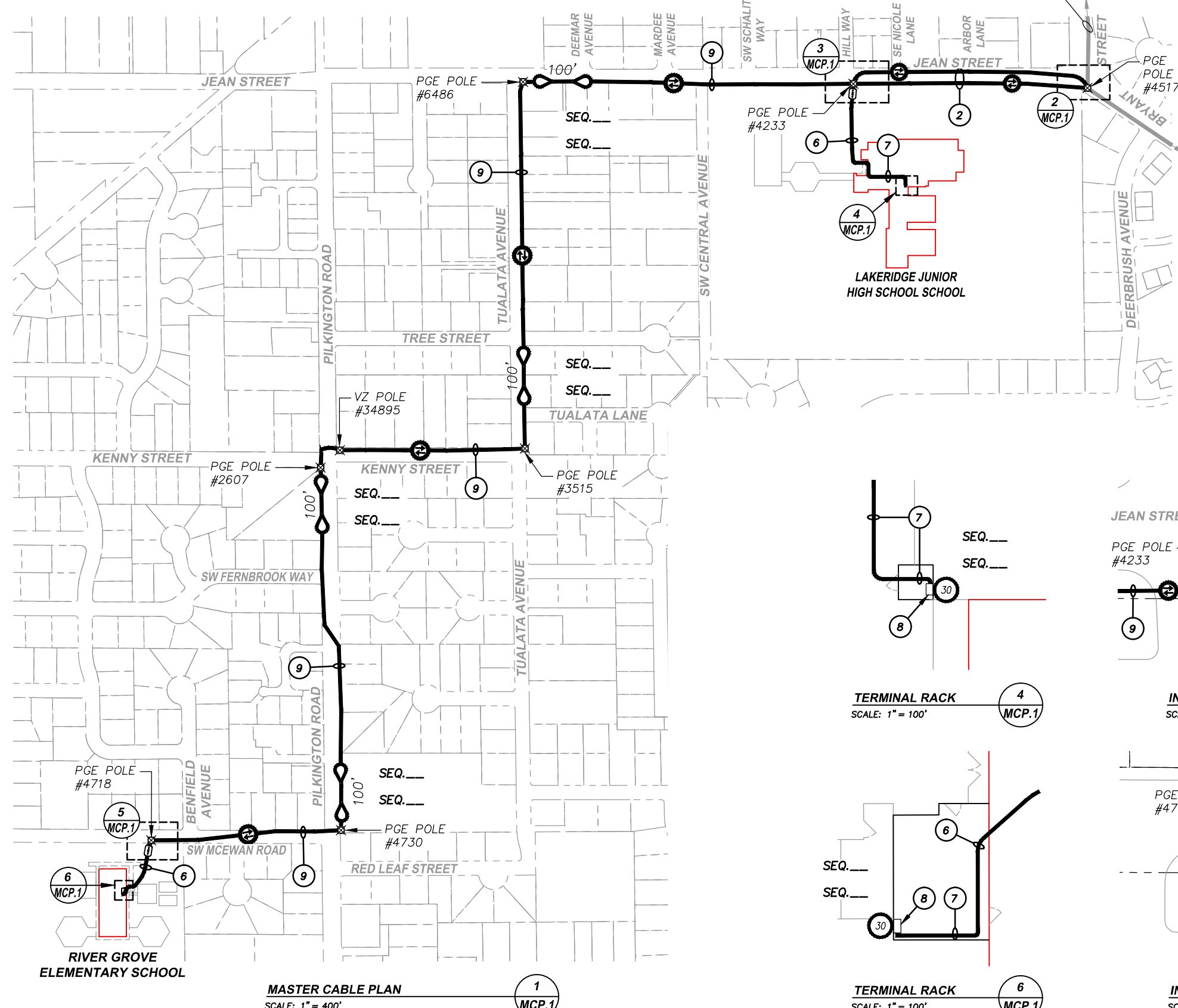
information at the speed of light

LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 10 - LAKERIDGE JR. HIGH SCHOOL & RIVER GROVE ELEMENTARY SCHOOL
BUILDING ENTRANCE PLAN

CITY: LAKE OSWEGO - TOWNSHIP 2 SOUTH RANGE 1 EAST SECTION: 17,18,19 COUNTY: CLACKAMAS CO., OREGON

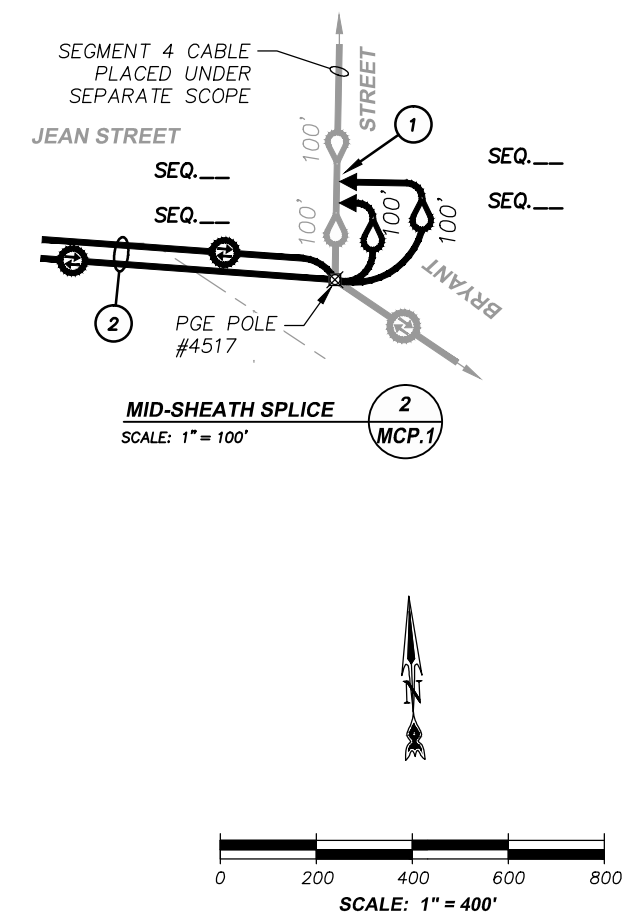
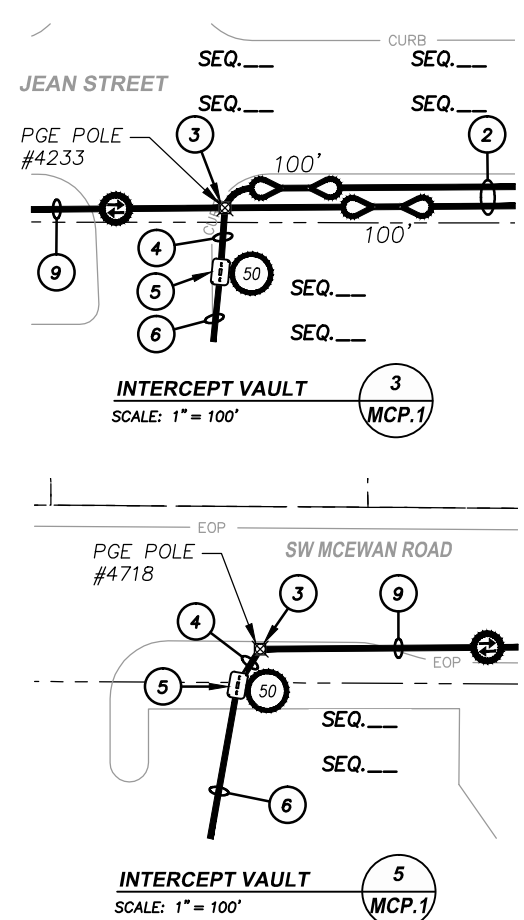
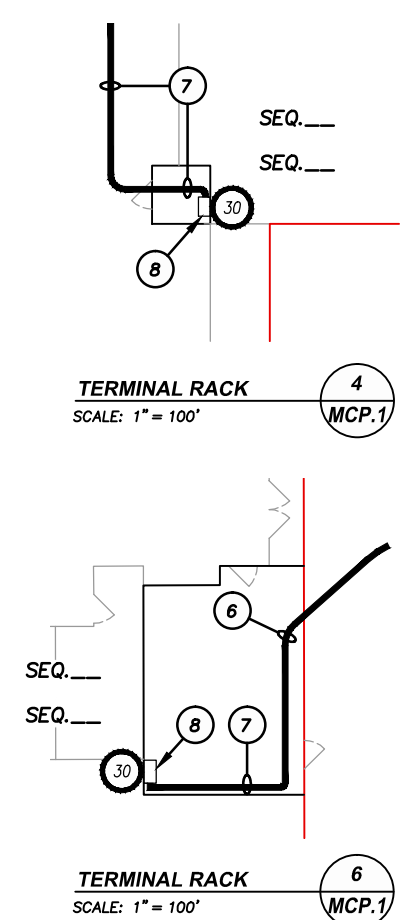
PLOT DATE: 2/21/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG - TAB_SHEET # LAKEO-S10-DE00.DWG - SP01_S.4	SHEET S.4
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CONSTRUCTION SET



- CONSTRUCTION NOTES**
- 1 PROPOSED MID-SHEATH SPLICE LOCATION
EXISTING 200' SLACK STORAGE IN 144F BACKBONE CABLE. (SEGMENT 4)
LEAVE 100' SLACK STORAGE IN NEW 24F LATERAL CABLE. (SEGMENT 10 LAKERIDGE JUNIOR HIGH SCHOOL)
LEAVE 100' SLACK STORAGE IN NEW 24F LATERAL CABLE. (SEGMENT 10 - RIVER GROVE ELEMENTARY SCHOOL)
 - 2 LASH TWO(2) NEW 24F CABLE TO NEW STRAND.
 - 3 PL NEW 24F CABLE THROUGH NEW 2" RISER.
 - 4 PL NEW 24F CABLE THROUGH NEW 2" CONDUIT.
 - 5 LEAVE 50' SLACK STORAGE IN NEW 24F CABLE COILED IN VAULT.
 - 6 PL NEW 24F CABLE THROUGH EXISTING 2" HDPE CONDUIT.
 - 7 PL NEW 24F CABLE THROUGH NEW 1 1/4" RISER FLEX CONDUIT.
 - 8 EXISTING RACK LOCATION - TERMINATION POINT.
LEAVE 30' SLACK IN NEW 24F CABLE FOR SPLICING.
 - 9 LASH NEW 24F CABLE TO NEW STRAND.

**MATERIAL / INSTALLATION RAKE-OFF
SEE JOB SCOPE - SHEET 1.1**



MASTER CABLE PLAN
SCALE: 1" = 400'

COMMS
STRUCTURE
CONSULTING, LLC

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REVISIONS				
REV	DESCRIPTION	DATE	BY	APP

Clackamas Broadband eXchange

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LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 10 - LAKERIDGE JR. HIGH SCHOOL & RIVER GROVE ELEMENTARY SCHOOL
MASTER CABLE PLAN

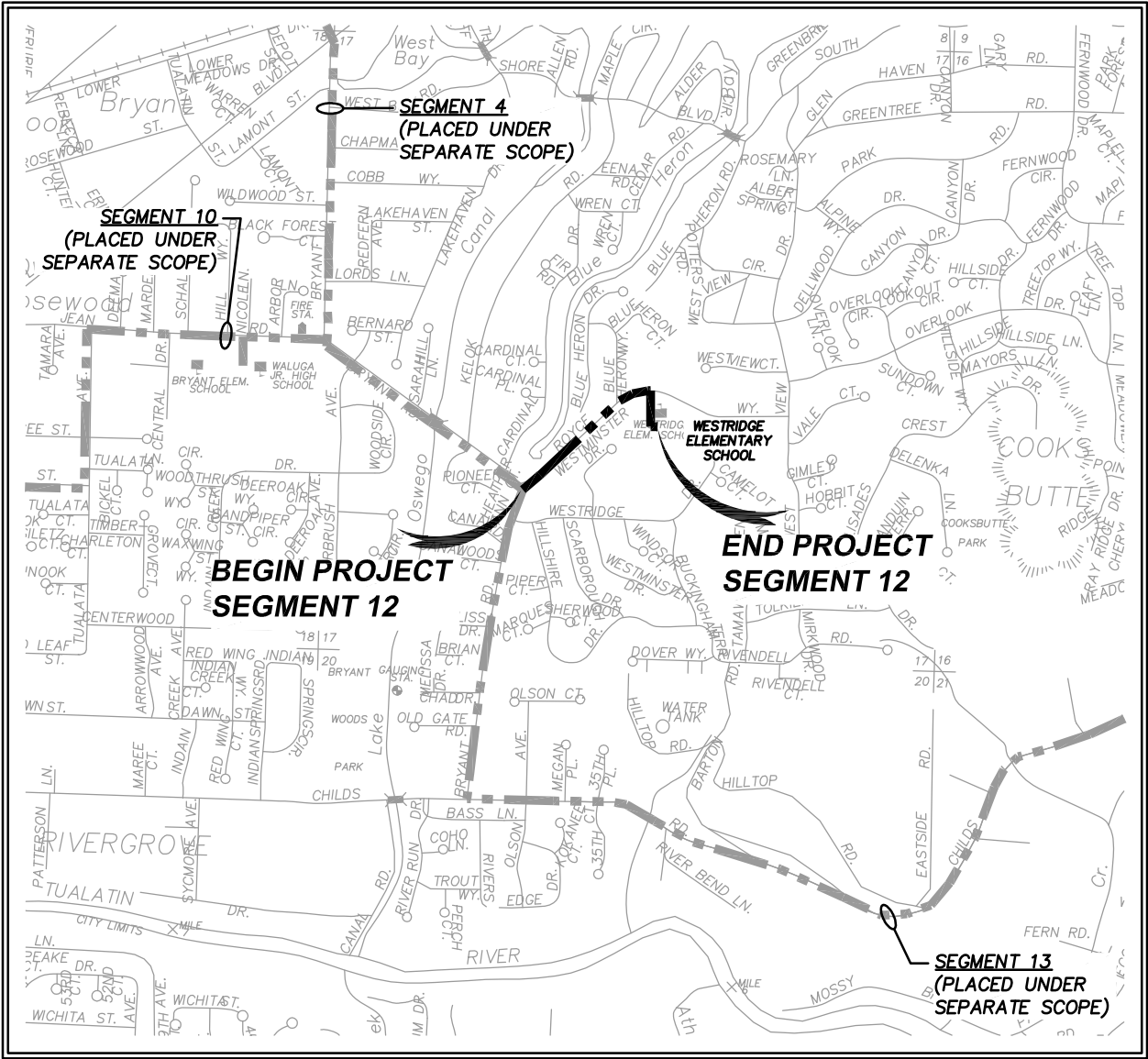
CITY: LAKE OSWEGO - TOWNSHIP 2 SOUTH RANGE 1 EAST SECTION: 17,18,19 COUNTY: CLACKAMAS CO., OREGON

PLOT DATE: 2/21/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG - TAB-SHEET # LAKEO-S10-DE00.DWG - CA01_MCP.1	SHEET MCP.1
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CLACKAMAS BROADBAND EXCHANGE

LAKE OSWEGO SCHOOL DISTRICT EXPANSION // SEGMENT 12 - WESTRIDGE ELEMENTARY SCHOOL

CITY OF LAKE OSWEGO, CLACKAMAS COUNTY, OREGON
TOWNSHIP 02 SOUTH , RANGE 01 EAST, SECTION 17
February 2017



SHEET INDEX

SHEET NAME	DESCRIPTION
1.0	COVER SHEET - VICINITY MAP
1.1	JOB SCOPE - MATERIAL TAKE-OFF
1.2	LEGEND
1.3	GENERAL NOTES
1.4	GENERAL NOTES
1.5	GENERAL NOTES
1.6	VAULT DETAILS
1.7	RISER DETAILS / LOCATE WIRE AND BONDING DETAILS
2.0	CONDUIT PLAN: ROYCE WAY
3.0	CONDUIT PLAN: ROYCE WAY
4.0	CONDUIT PLAN: ROYCE WAY
5.0	CONDUIT PLAN: ROYCE WAY
6.0	CONDUIT PLAN: ROYCE WAY
7.0	CONDUIT PLAN: ROYCE WAY
S.1	SITE PLAN: WESTRIDGE ELEMENTARY SCHOOL
S.2	BUILDING ENTRANCE PLAN: COMM ROOM
MCP.1	MASTER CABLE PLAN: SEGMENT 12

OWNER / APPLICANT

CLACKAMAS BROADBAND EXCHANGE
121 LIBRARY COURT
OREGON CITY, OR 97045
OFFICE: 503.655.8322

CONTACT: DUKE DEXTER; BROADBAND PROJECT COORDINATOR
OFFICE: 503.722.6663 CELL: 971.219.3339
E-MAIL: DDEXTER@CO.CLACKAMAS.ORG

DESIGN CONSULTANTS

COMMSTRUCTURE CONSULTING LLC
811 RAILROAD AVE., OREGON CITY, OR 97045
OFFICE: 503.343.4134

CONTACT: JAMES GREENWOOD EIT, OSP PROJECT MANAGER
DIRECT: 971.266.4424
E-MAIL: JAMES@COMMSTRUCTURECONSULTING.COM

CONTACT: TERENCE WALKER, PROJECT DESIGNER
DIRECT: 971.266.4429
E-MAIL: TERENCE@COMMSTRUCTURECONSULTING.COM



Know what's below.
Call before you dig.

OREGON ADMINISTRATIVE RULES 952-001-0020

PROJECT PLANS TO NOTIFY EXCAVATOR OF REQUIREMENTS OF LAW
ALL PROJECT PLANS SHALL CONTAIN THE FOLLOWING STATEMENT:

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 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).

STAT. AUTH.: SEC. 1 - 5 & 7, CH. 691, OL 1995
STATS. IMPLEMENTED:
HIST.: OUNC 1-1997, F. & CERT. EF. 4-17-97

VICINITY MAP

SCALE: NTS



Clackamas Broadband eXchange

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LAKE OSWEGO SCHOOL DISTRICT EXPANSION SEGMENT 12 - WESTRIDGE ELEMENTARY SCHOOL COVER SHEET - VICINITY MAP

CITY: LAKE OSWEGO - TOWNSHIP 02 SOUTH RANGE 01 EAST SECTION: 17		COUNTY: CLACKAMAS CO., OREGON	
PLOT DATE: 2/21/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG - TAB_SHEET # LAKEO-S12-CS00.DWG - CS01_1.0	SHEET 1.0

JOB SCOPE

LAKE OSWEGO, OREGON
CLACKAMAS COUNTY

TOWNSHIP 2S – RANGE 1E – SECTION 17

PROJECT SUMMARY

THIS PROJECT WILL PROVIDE BACKBONE INFRASTRUCTURE EXPANSION OF THE CLACKAMAS BROADBAND EXCHANGE (CBX) NETWORK IN LAKE OSWEGO, OREGON. SPECIFICALLY, THIS PROJECT WILL FACILITATE EXPANDED BROADBAND CONNECTIVITY FOR THE LAKE OSWEGO SCHOOL DISTRICT SITES AND FACILITIES IN THE AREA. THIS PROJECT IS DIVIDED INTO 10 SEPARATE BUT CONTINUOUS BACKBONE SEGMENTS WITH THE COMBINED ROUTE TOTALING APPROXIMATELY 70,000 FEET OF NEW AERIAL AND UNDERGROUND INFRASTRUCTURE. THE FOLLOWING IS THE SCOPE OF WORK AND SUMMARY FOR THIS SPECIFIC SEGMENT DESIGN PACKAGE.

LATERAL – SEGMENT 12

SEGMENT 12 WILL CREATE A NEW FIBER OPTIC LATERAL NETWORK CONNECTION WITH THE LAKE OSWEGO SCHOOL DISTRICT EXPANSION BACKBONE AND CONNECT SEGMENT 12 TO SEGMENTS 4 AND 13 AND EXISTING CBX FACILITIES.

BEGINNING AT PROPOSED SEGMENT 4 AND SEGMENT 12 AERIAL MID–SHEATH SPLICE LOCATED ADJACENT TO PGE RISER POLE #10 ON THE SE CORNER OF BRYANT RD AND ROYCE WAY, A NEW 24F CABLE WILL BE OVER LASHED TO EXISTING 144F AERIAL CABLE AND STRAND AND TRANSITION TO UNDERGROUND ON PGE RISER POLE #10. FROM THE RISER POLE A NEW UNDERGROUND CONDUIT PATHWAY WILL BE CONSTRUCTED EAST ON THE SOUTH SIDE OF ROYCE WAY FOR APPROXIMATELY 1500 FEET TO A NEW UTILITY VAULT THAT WILL INTERCEPT EXISTING BUILDING ENTRY CONDUIT. FROM THIS NEW VAULT THE EXISTING CONDUIT PATHWAY TRANSITIONS SOUTH ALONG THE EAST SIDE OF THE FACILITY FOR APPROXIMATELY 550 FEET TO THE EXISTING BUILDING ENTRANCE LOCATION. FROM THE BUILDING ENTRANCE LOCATION NEW RISER FLEX CONDUIT WILL BE PLACED THROUGH THE FACILITY INTERIOR TO THE EXISTING RACK AND PROPOSED CBX EQUIPMENT LOCATION IN THE WESTRIDGE ELEMENTARY SCHOOL COMM ROOM. THE NEW 24F CABLE WILL TRANSITION THROUGH THE NEW RISER, CONDUIT, EXISTING CONDUIT AND NEW FLEX CONDUIT PATHWAYS AND COIL AT THE PROPOSED CBX EQUIPMENT LOCATION FOR TERMINATION.

CONTRACTOR WILL BE RESPONSIBLE FOR COMPLIANCE WITH ALL APPLICABLE CITY, COUNTY, STATE AND PRIVATE AGENCY RIGHT OF WAY AND POLE ATTACHMENT PERMIT REQUIREMENTS INCLUDING TRAFFIC CONTROL, WORK HOUR RESTRICTIONS, NOTIFICATIONS AND RESTORATION. CABLE REEL LOCATIONS ALONG WITH SLACK STORAGE IN THE FIBER CABLE WILL BE PLACED AT AERIAL STORAGE AND VAULT LOCATIONS AS DESIGNATED IN THE CONSTRUCTION DRAWINGS AND FIBER OWNERSHIP TAGS WILL BE PLACED ON THE CABLE AT EVERY POLE AND EVERY VAULT LOCATION. THE CONTRACTOR WILL PLUG ALL VACATED HOLES FROM ABANDON OR RELOCATED ATTACHMENTS PER POLE OWNER SPECIFICATIONS. CONTRACTOR WILL TEST AND VERIFY THE EXISTING CONDUIT PRIOR TO INSTALLATION OF THE NEW FIBER OPTIC CABLE AND LOCATE WIRE. CONTRACTOR WILL CLEAN AND TAG FIBER COILS; PREP FOR SPLICE; PLACE LOCATE WIRE; TEST STATIONS; GROUND RODS; AND GROUND WIRE AS REQUIRED AND DETAILED IN THE CONSTRUCTION DRAWINGS WITH REPLACING ANY MISSING LOCATE WIRE WITHIN THE EXISTING CONDUIT PATHWAYS.


PERMITS

CITY OF LAKE OSWEGO: 1

MATERIAL & INSTALLATION SUMMARY

DESCRIPTION	UOM	TOTALS
MATERIAL RAKE OFF:		
AERIAL QUANTITY:		
2” CONDUIT RISER (10’ GRC REMAINING PVC):	FT	30
AERIAL SLACK STORAGE BRACKET (SNOW SHOE – QTY. 2):	EA	1
UNDERGROUND QUANTITY:		
2” SCH40 PVC OR SDR11 HDPE CONDUIT:	FT	1481
24X36X36 OPEN BOTTOM HAND HOLE:	EA	4
#12 AWG LOCATE WIRE:	FT	2031
LOCATE WIRE TEST STATION:	EA	4
5/8’ X 5’ GROUND ROD:	EA	4
INTERIOR QUANTITY:		
1–1/4” RISER FLEX CONDUIT:	FT	30
FIBER QUANTITY:		
24 CT ARMORED FIBER OPTIC CABLE:	FT	2091
24 CT ARMORED FIBER OPTIC CABLE SLACK:	FT	230
INSTALLATION RAKE OFF:		
AERIAL QUANTITY:		
PLACE NEW 2” CONDUIT RISER (10’ GRC REMAINING PVC):	EA	1
PLACE NEW AERIAL SLACK STORAGE BRACKET (SNOW SHOE – QTY. 2):	EA	1
UNDERGROUND QUANTITY:		
PLACE ONE(1) NEW 2” SCH40 PVC OR SDR11 HDPE CONDUIT:	FT	1481
PLACE NEW 24X36X36 OPEN BOTTOM HAND HOLE:	EA	4
PLACE NEW #12 AWG LOCATE WIRE (AS–REQUIRED):	FT	1481
PLACE NEW LOCATE WIRE TEST STATION (AS–REQUIRED):	EA	4
PLACE NEW 5/8’ X 5’ GROUND ROD (AS–REQUIRED):	EA	4
INTERIOR QUANTITY:		
PLACE NEW 1–1/4” RISER FLEX CONDUIT:	FT	30
FIBER QUANTITY:		
PLACE (LASH) NEW FIBER CABLE(S) TO EXISTING STRAND (OVERLASH):	FT	135
PULL NEW CABLE THROUGH EXISTING CONDUIT:	FT	550
PULL NEW CABLE THROUGH NEW CONDUIT:	FT	1541
PLACE NEW CABLE IN EXISTING CABLE TRAY:	FT	30
TOTAL POLES:	EA	1

*** NOTE:
FOOTAGES SHOWN ARE MEASURED IN LINEAR FEET.
TO ACCOMMODATE FOR SAG DISTANCE FROM POLE TO POLE,
ADD 2% TO TOTAL CABLE & STRAND.



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REVISIONS

✓	DESCRIPTION	DATE	BY	APP

Clackamas Broadband eXchange

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LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 12 - WESTRIDGE ELEMENTARY SCHOOL
JOB SCOPE - MATERIAL RAKE-OFF

CITY: LAKE OSWEGO – TOWNSHIP 02 SOUTH RANGE 01 EAST SECTION: 17		COUNTY: CLACKAMAS CO., OREGON	
PLOT DATE: 3/15/2017	SCALE: AS SHOWN	PROJECT NAME–FILENAME.DWG – TAB_SHEET # LAKEO–S12–CS00.DWG – CS02_1.1	SHEET 1.1

SPECIFICATION SET

SURFACE FEATURES / AERIAL UTILITIES - LINETYPES & SYMBOLS

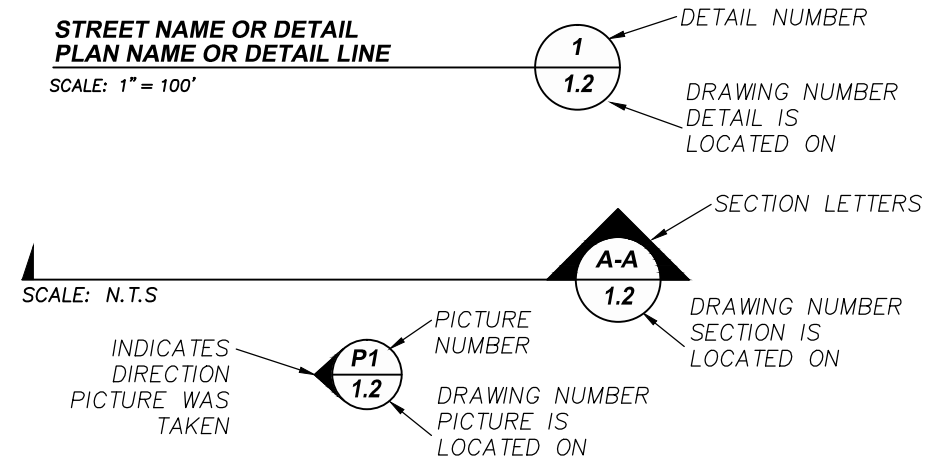
EXISTING	PROPOSED
<div>DESIGN</div> <div><div>CABLE</div><div>STRAND</div><div>CONDUIT</div><div>PLENUM / RISER RATED FLEX CONDUIT (AS SPECIFIED)</div></div>	<div>DESIGN</div> <div><div>CABLE</div><div>STRAND</div><div>CONDUIT</div><div>PLENUM / RISER RATED FLEX CONDUIT (AS SPECIFIED)</div></div>
<div>COMMUNICATIONS</div> <div>(OWNERS SPECIFIED ON PLANS)</div> <div>CATV CATV</div> <div>T TELEPHONE</div> <div>FO FIBER OPTIC</div>	
<div>POWER/ELECTRICAL</div> <div>(OWNERS SPECIFIED ON PLANS)</div> <div>P PRIMARY</div> <div>SL STREET LIGHT</div> <div>TS TRAFFIC SIGNAL</div>	
<div>OTHER UTILITIES</div> <div>G GAS</div> <div>SS SANITARY</div> <div>ST STORM</div> <div>W WATER</div>	
<div>TOPO FEATURES</div> <div>BOW BACK OF WALK/SIDEWALK</div> <div><div>BUILDING FOOTPRINT</div></div> <div>CULVERT</div> <div>CURB CURB</div> <div>EOC EDGE OF CONCRETE</div> <div>EOG EDGE OF GRAVEL</div> <div>EOP EDGE OF PAVEMENT</div> <div>DWY DRIVEWAY</div> <div>TOB TOP OF BANK</div> <div>FENCE STRIPING</div> <div>R/R TRACKS</div> <div>C/L RIGHT-OF-WAY CENTERLINE</div> <div>R/W RIGHT-OF-WAY</div> <div>P/L PROPERTY LINE</div> <div>EASEMENT</div> <div>WALL</div> <div>VEGETATION LINE</div>	<div>POLE TO POLE GUY</div> <div>CENTERLINE</div>

ABBREVIATIONS

E/W EQUIPPED WITH	N NORTH	AB ABANDONED	FS FIELD SIDE	RPL REPLACE
D/W DRIVEWAY	S SOUTH	BOC BACK OF CURB	FOC FACE OF CURB	SCA SIDE CABLE ARM
O/S OFFSET	E EAST	BOW BACK OF SIDEWALK	GRC GALVANIZED RIGID CONDUIT	SLP STREET LIGHT PROTECTED
R/W RIGHT OF WAY	W WEST	BP BORE PIT	HT HEIGHT	SLU STREET LIGHT UNPROTECTED
S/W SIDEWALK		DG DOWNGUY	HDG HOT DIPPED GALVANIZED	SL STREET LIGHT
N/O NORTH OF		FC FIBERGLASS CONDUIT	ID INNERDUCT	CATV CABLE TELEVISION
S/O SOUTH OF		FGA FIBERGLASS ARM	MGN MULTI-GROUNDED NEUTRAL	TEL TELEPHONE
E/O EAST OF		DOC DEPTH OF COVER	MIN MINIMUM	VGR VERTICAL GROUND ROD
W/O WEST OF		FDC FIBER DUCT IN CONCRETE	OD OUTSIDE DIAMETER	WT WEIGHT
		FO FIBER OPTIC	PL PLACE	W-W WALL TO WALL FOOTAGE
		NT NO TAG	PWR POWER	P-W POLE TO WALL FOOTAGE
		NV NOT VISIBLE	PUE PUBLIC UTILITY EASEMENT	BE BUILDING ENTRY
		BT BLANK TAG		

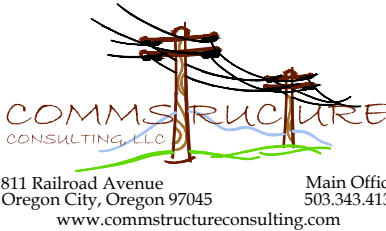
EXISTING	PROPOSED
<div>UTILITY POLE</div>	<div>UTILITY POLE</div>
<div>SPLICE</div>	<div>SPLICE</div>
<div>MID-SHEATH SPLICE</div>	<div>MID-SHEATH SPLICE</div>
<div>VAULT/BUILDING STORAGE</div>	<div>VAULT/BUILDING STORAGE</div>
<div>FIBER SYMBOL</div>	<div>FIBER SYMBOL</div>
<div>FT AERIAL STORAGE</div>	<div>FT AERIAL STORAGE</div>
<div>POWER ANCHOR & GUY</div>	<div>ANCHOR & GUY</div>
<div>POWER S/W ANCHOR & GUY</div>	<div>DOWNGUY TO EXISTING ANCHOR</div>
<div>COMM ANCHOR & GUY</div>	<div>S/W ANCHOR & GUY</div>
<div>COMM S/W ANCHOR & GUY</div>	<div>DOWNGUY TO EXISTING S/W ANCHOR</div>
<div>VGR GROUND</div>	<div>VGR GROUND</div>
<div>INTERIOR BOND</div>	<div>INTERIOR BOND</div>

DETAILS AND SECTIONS CALLOUT SYMBOLOGY



EXISTING	PROPOSED
<div>TELECOMM</div> <div>CABLE MARKER</div> <div>CABLE MARKER E/W GROUND LUGS</div> <div>LOCATE TERMINAL ACCESS POINT</div> <div>GROUND ROD</div> <div>CATV RISER</div> <div>TELECOMM MANHOLE</div>	<div>CABLE MARKER</div> <div>CABLE MARKER E/W GROUND LUGS</div> <div>LOCATE TERMINAL ACCESS POINT</div> <div>GROUND ROD</div> <div>SIGNAL CONTROLLER</div>
<div>POWER</div> <div>POWER TRANSFORMER</div> <div>POWER METER</div>	
<div>TRAFFIC</div> <div>CROSS WALK SIGNAL</div> <div>R/R CROSSING SIGNAL</div> <div>JUNCTION BOX</div> <div>TRAFFIC SIGNAL POLE</div> <div>SIGNAL CONTROLLER</div> <div>RAILROAD ARM</div> <div>SIGN</div>	
<div>STORM</div> <div>AREA DRAIN</div> <div>CATCH BASIN</div> <div>STORM SEWER</div>	
<div>WATER</div> <div>BLOW OFF</div> <div>FIRE CONNECTION</div> <div>FIRE HYDRANT</div> <div>IRRIGATION METER</div> <div>IRRIGATION VALVE</div> <div>WATER METER</div> <div>WATER VALVE</div> <div>WATER VAULT</div>	
<div>TOPO</div> <div>BOLLARD</div> <div>GAS VALVE</div> <div>GAS METER</div> <div>LUMINAIRE</div> <div>MAILBOX</div> <div>PROPERTY CORNER</div> <div>MONUMENT SURVEY</div> <div>PARKING METER</div> <div>SANITARY SEWER</div> <div>STEEL PILING</div> <div>TREE</div>	

45'/4/D(T)=POLE HT/CLASS/DISTRIBUTION(TRANSMISSION)
P.O.A.=_____ <-PROPOSED POINT OF ATTACHMENT



DESIGNED BY: CCLLC
CHECKED BY: CCLLC DRAWN BY: CCLLC

REVISIONS				
REV	DESCRIPTION	DATE	BY	APP

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CLACKAMAS BROADBAND EXPRESS
STANDARD PLANS FOR CONSTRUCTION
LEGEND

CITY: CITY – TOWNSHIP RANGE SECTION:				COUNTY: COUNTY CO., STATE	
PLOT DATE: 12/06/2016	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG – TAB_SHEET # CBX-DT00.DWG – LG01_1.2		SHEET	1.2

SPECIFICATION SET

SITE CONDITIONS:

THE LOCATIONS OF EXISTING UTILITIES SHOWN IN THIS PLAN ARE APPROXIMATE. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES. UTILITIES MAY EXIST IN THE AREA IN ADDITION TO THOSE SHOWN ON THE PLAN. THE CONTRACTOR SHALL CONTACT PROPERTY OWNERS WHEN WORKING WITHIN PRIVATE EASEMENTS FOR LOCATION OF UNDERGROUND TANKS, PIPELINES, DRAIN TILES, OR OTHER BURIED IMPROVEMENTS. THE CONTRACTOR SHALL ALSO NOTIFY THE UTILITY NOTIFICATION CENTER PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITIES.

THE CONTRACTOR MUST ASSUME ALL BURIED UTILITIES ENCOUNTERED ARE LIVE AND ACTIVE UNLESS SPECIFICALLY INSTRUCTED OTHERWISE BY THE OWNERS OR OPERATORS OF SAID UTILITIES. REPAIR OF ANY DAMAGED CONDUIT CONTAINING CABLE SHALL BE MADE BY USE OF PVC SPLIT DUCT OR MATCH EXISTING. DAMAGE TO SUB-SURFACE STRUCTURES IS THE SOLE RESPONSIBILITY OF THE PLACING CONTRACTOR.

THE CONTRACTOR SHALL PROTECT THE EXISTING TRAFFIC CONTROL LOOPS. IF EXISTING TRAFFIC CONTROL LOOPS ARE DAMAGED DURING CONSTRUCTION, THE ENTIRE LOOP WIRE FROM TERMINAL TO TERMINAL SHALL BE REPLACED IN ACCORDANCE WITH GOVERNING AGENCY STANDARDS AND REGULATIONS AT CONTRACTOR'S EXPENSE.

REMOVAL OF EXISTING ASPHALT PAVEMENT, CONCRETE CURBS, AND CONCRETE SIDEWALKS WILL BE "NEAT LINE" WITH SAW OR PAVEMENT CUTTER, PER REQUIREMENTS AND SPECIFICATIONS OF THE AGENCY OR DEPARTMENT RESPONSIBLE FOR EACH LOCATION. IF CONCRETE PAVEMENT IS ENCOUNTERED WHILE EXCAVATING CONDUIT TRENCHES, THE CONCRETE REMOVAL WILL BE "NEAT LINE" WITH A PAVEMENT SAW.

IF CONCRETE CURB RETURNS AND/OR SIDEWALKS ARE REPLACED DUE TO CONDUIT OR MANHOLE INSTALLATION, THE CONTRACTOR SHALL PLACE APPROVED HANDICAPPED SIDEWALK AND CURB ACCESS RAMPS IN CONFORMANCE WITH STATE STATUTES.

ALL MATERIALS NECESSARY FOR THE REPAIR OF STREETS, CURBS, SIDEWALKS, SANITARY SEWERS, STORM SEWERS, AND PUBLIC SERVICE UTILITIES, AND THE INSTALLATION OF SUCH MATERIALS SHALL BE IN CONFORMANCE WITH THE REQUIREMENTS AND SPECIFICATIONS OF THE AGENCY OR DEPARTMENT RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE REPAIRED FACILITY.

ALL OPEN TRENCH WILL BE CLEARLY MARKED WITH BARRICADES OR CONES. STEEL PLATES OR OTHER TYPES OF BRIDGING SHALL BE PROVIDED TO COVER OPEN TRENCH IN THE TRAVEL PORTION OF THE STREETS. THESE PLATES OR BRIDGING SHALL BE ADEQUATE TO SUPPORT THE NORMAL VEHICLE LOADS ANTICIPATED IN THIS AREA AND SHALL BE IN PLACE DURING ALL NON-WORKING AREAS.

ALL SURFACES TO BE RESTORED TO ORIGINAL CONDITION, AND BACKFILL TO BE COMPACTED AS SPECIFIED. TRENCH EXCAVATION IN SURFACES WHICH INCLUDE CONCRETE TREATED BASE SHALL FOLLOW LOCAL AREA SPECIFICATIONS.

ALL WORK SHALL CONFORM TO THE SPECIFICATIONS OF THE JURISDICTIONAL PERMIT AGENCY.

TEMPORARY BACKFILL:

THE CONTRACTOR SHALL BE REQUIRED TO MAINTAIN NORMAL TRAFFIC MOVEMENT DURING NON-WORK PERIODS FOR ALL CONSTRUCTION ACTIVITY WITHIN THE LIMITS OF CITY STREETS BY THE USE OF STEEL PLATES (DESIGNED FOR H-20 LOADING) OR BACKFILLING THE TRENCH. IF THE CONTRACTOR ELECTS TO BACKFILL THE TRENCH HE SHALL "CAP" THE TRENCH WITH A 2"(COMPACTED MINIMUM) DEPTH OF CLASS "C" ASPHALTIC CONCRETE COLD MIX. IF THE CONTRACTOR ELECTS TO PLATE THE TRENCH THE PLATES SHALL BE PINNED AT EACH CORNER AND THE EDGES SHALL BE "RAMPED" WITH CLASS "C" ASPHALTIC CONCRETE COLD MIX TO PREVENT "WHEEL SHOCK" ON IMPACT. COLD MIX SHALL BE COMPACTED AND SMOOTH IN EITHER TYPE OF INSTALLATION. TO PREVENT SKIDDING, TRAFFIC PLATES SHALL BE TREATED WITH WELD BEADS TO PROVIDE TRACTION. WELD BEADS SHALL BE LOCATED 4" ON CENTER AND EXTEND THROUGH THE TRAVEL PORTIONS OF THE PLATES. USE OF STEEL PLATES IN THE ROW TO BE APPROVED BY THE GOVERNING PERMIT AGENCY.

BACKFILL:

BACKFILL OF CONDUIT TRENCH OR MANHOLE EXCAVATION SHALL BE 3/4" – 0 CRUSHED ROCK PLACED IN 6" LIFTS AND COMPACTED WITH MECHANICAL VIBRATING TYPE COMPACTION EQUIPMENT TO 95% OF MAXIMUM DRY DENSITY (ASTM D-1550 OR AASHTO T-180) UNDER ALL PAVED SURFACES UNLESS OTHERWISE SPECIFIED.

BACKFILL OF CONDUIT TRENCH OR MANHOLE EXCAVATION IN NON-PAVED AREAS SHALL BE CLEAN SAND OR SILTY LOAM SOILS PLACED IN 1'-0" LIFTS COMPACTED BY MECHANICAL VIBRATING TYPE COMPACTION EQUIPMENT TO 95% OF MAXIMUM DRY DENSITY (ASTM D698 OR AASHTO T-99) UNLESS OTHERWISE SPECIFIED.

BACKFILL AROUND ALL VAULTS SHOULD CONSIST OF COMPACTED SELECT BACKFILL MATERIAL OR IN ACCORDANCE WITH AGENCY SPECIFIED BACKFILL. IN NO CASE SHALL THE MATERIAL BE SATURATED OR CONTAIN LARGE ROCKS OR CHUNKS. NO VOIDS SHALL REMAIN BETWEEN THE VAULT WALLS AND THE NATIVE SOIL. BACKFILL AROUND VAULTS SHALL NOT BE PLACED UNTIL THE ENTIRE VAULT STRUCTURE IS IN PLACE INCLUDING ALL LIDS AND RISERS, BEING SURE TO COMPACT FILL MATERIAL FROM BOTTOM TO TOP SURFACE.

SAND MAY BE WATER SETTLED IF THAT TYPE OF COMPACTION IS ALLOWED BY THE PERMITTING AGENCY IN EITHER PAVED OR NON-PAVED SITUATIONS. THE CONTRACTOR SHALL VERIFY THE TYPE OF COMPACTION ALLOWED PRIOR TO BEGINNING ANY BACKFILL ACTIVITY.

BACKFILL SHALL BE PLACED IN ACCORDANCE WITH THE SPECIFICATIONS AND REGULATIONS OF THE JURISDICTIONAL PERMIT AGENCY.

HAZARDOUS MATERIALS:

THE CONTRACTOR SHALL NOTIFY THE JURISDICTIONAL PERMIT AGENCY IMMEDIATELY IF ANY MATERIALS ARE ENCOUNTERED THAT MAY BE CONSIDERED HAZARDOUS BY THE EPA, DEQ, OR OSHA. IF POTENTIALLY HAZARDOUS MATERIALS ARE ENCOUNTERED THE CONTRACTOR SHALL SECURE THE SITE AND PREVENT ACCIDENTAL EXPOSURE TO THE PUBLIC OR THE CONTRACTOR'S PERSONNEL.

THE CONTRACTOR MAY EXCAVATE UP TO, BUT SHALL NOT DISTURB KNOWN HAZARDOUS MATERIALS SUCH AS ASBESTOS, OILS, ACID, ETC. THE REMOVAL OF ALL HAZARDOUS MATERIALS MUST BE DONE BY A LICENSED HAZARDOUS MATERIALS CONTRACTOR AND IN ACCORDANCE WITH JURISDICTIONAL AGENCY REQUIREMENTS.

LANDSCAPING:

TREE AND PLANT PROTECTION TO CONFORM WITH THE AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) SECTION A300 PART 1 –10 AS APPLICABLE. ANY DEVIATION FROM INDUSTRY APPROVED TREE AND PLANT CARE TO BE CLEARED WITH THE GOVERNING PERMIT AGENCY REPRESENTATIVE AND OR ADJOINING PROPERTY OWNER PRIOR TO ANY PRUNING OR EXCAVATION.

AT NO POINT IN TIME SHALL THE CONTRACTOR REMOVE ANY TREES OR SHRUBS WITH OUT PREVIOUS AUTHORITY FROM THE GOVERNING PERMIT AGENCY.

EXCAVATION IN LAWN AREAS SHALL BE "NEAT LINED" WITH A SOD CUTTER TO ENSURE A SMOOTH MATCH LINE FOR REPAIR WITH APPROVED SOD.

ALL LAWN RESTORATION SHALL BE DONE BY USING SOD PLACED TO THE GROWER/SUPPLIERS SPECIFICATIONS AND ADJACENT PROPERTY OWNER'S SPECIFICATIONS.

SOD USED TO REPAIR EXISTING LAWN AREA SHALL BE OF A BLEND THAT WILL MATCH THE ADJACENT UNDISTURBED LAWN AREA FOR BOTH COLOR AND TEXTURE.

PRIVATE IRRIGATION SYSTEMS ARE OCCASIONALLY LOCATED WITHIN THE PUBLIC RIGHT-OF-WAY OF ADJACENT STREET AREAS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR OPERATION AND REPAIR IF DAMAGE OCCURS DURING HIS CONSTRUCTION ACTIVITY. PRIVATE IRRIGATION SYSTEMS LOCATED ON PRIVATE PROPERTY DAMAGED BY CONSTRUCTION ACTIVITY SHALL BE REPAIRED IMMEDIATELY TO THE OWNER'S SATISFACTION AT NO COST TO THE OWNER.

IN DEVELOPED (PROFESSIONALLY) LANDSCAPED AREAS, NO WORK SHALL BE DONE WITHOUT THE OWNER'S WRITTEN PERMISSION OR AUTHORIZATION.

STRUCTURE PROTECTION:

VAULTS AND CONDUIT TO BE PLACED ADJACENT TO EXISTING STRUCTURES SUCH AS BRIDGE FOOTINGS, PIERS, BUILDING FOUNDATIONS, WALLS, POWER AND TELEPHONE POLES, AND OTHER UTILITIES SHALL MAINTAIN A MINIMUM CLEARANCE AS SHOWN. THE CONTRACTOR SHALL NOT UNDERMINE ANY ADJACENT STRUCTURE WITHOUT SPECIFIC WRITTEN PERMISSION FROM THE OWNER/OPERATOR OF SUCH STRUCTURE.

EXISTING UTILITIES EXPOSED DURING EXCAVATION SHALL BE 100% SUPPORTED BY BOTH TRENCH BRIDGING AND SUSPENSION OR BY THE USE OF LONGITUDINAL TRAYS OR PLATFORMS VERTICALLY SUPPORTED BY ADJUSTABLE BUILDING JACKS.

EXISTING SPLICE CASES AND CABLES SHALL BE SUPPORTED AT A MAXIMUM SPACING OF 4.0 FEET AND SHALL CONSIST OF A CANVAS SLING WITH NYLON BELTING OR ROPE. ALL CABLE SUPPORTS SHALL BE PLACED IN A MANNER THAT PREVENTS KINKS OR OTHER DAMAGE TO THE CABLE SHEATH.

AN ACCEPTABLE ALTERNATIVE TO CABLE SLINGS WOULD BE THE UTILIZATION OF A WIDE FLANGE "I" BEAM OR CHANNEL AS A "CABLE TRAY" WITH THE CABLES/CASES BANDED IN PLACE.

SHORING:

THE CONTRACTOR SHALL PROVIDE SHORING FOR CONDUIT TRENCH EXCAVATION 42" OR MORE IN DEPTH AS MEASURED FROM THE HIGH SIDE OF THE TRENCH AND FOR ALL MANHOLE EXCAVATION.

MANHOLE SHORING SHALL BE TIGHT-SHEETED.

ALL SHORING SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE JURISDICTIONAL PERMIT AGENCY AND THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA).

SHORING SHALL BE DESIGNED TO MEET H-20 HIGHWAY LOADING CRITERIA.

THE CONTRACTOR SHALL PROVIDE ALL SHORING AND DESIGN CALCULATIONS TO THE PERMIT ISSUING AGENCY PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITY.

EXISTING UTILITY SERVICES:

ANY UTILITY DAMAGED BY CONSTRUCTION ACTIVITY SHALL BE RETURNED TO FULL SERVICE IMMEDIATELY AND ANY COST OR EXPENSE CONSIDERED TO BE LOST BY THE UTILITY USER SHALL BE THE CONTRACTOR'S RESPONSIBILITY. IN THE EVENT OF ANY DAMAGE TO AN EXISTING UTILITY THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE UTILITY OWNER AND THE PROJECT MANAGER.

LANDSCAPE AREAS SERVED BY IRRIGATION SYSTEMS SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION BY THE UTILIZATION OF TEMPORARY SOURCES OF IRRIGATION WATER OR BY MAKING TEMPORARY REPAIRS TO THE DAMAGED SYSTEM TO ALLOW ITS SATISFACTORY OPERATION.

SPECIAL UTILITY CLEARANCES:

ALL WORK CONDUCTED ADJACENT TO WATER MAINS, STORM SEWERS, OR SANITARY SEWERS SHALL CONFORM TO THE FOLLOWING CONDITIONS, UNLESS OTHERWISE SPECIFIED BY THE GOVERNING PERMIT AGENCY:

- A. PARALLEL CONDUIT SHALL MAINTAIN A HORIZONTAL SEPARATION OF 5.0 FEET, MEASURED SURFACE TO SURFACE. (OUTSIDE EDGE TO OUTSIDE EDGE)
- B. PERPENDICULAR CONDUIT PASSING UNDER OR OVER UTILITIES MUST MAINTAIN 12" VERTICAL CLEAR SEPARATION.
- C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING THIS REQUIRED VERTICAL SEPARATION BY EITHER EXPOSING THE UTILITY EVERY 100 FEET IN THOSE AREAS WHERE HORIZONTAL SEPARATION IS LESS THAN 5.0 FEET OR BY UTILIZING KNOWN DEPTHS OF ADJACENT FACILITIES. IF THE CONTRACTOR UTILIZES THE ADJACENT FACILITIES TO DETERMINE DEPTH, HE SHALL CONTACT THE GOVERNING AGENCY AT EACH SUCH LOCATION AND THE AGENCY WILL DETERMINE THE NECESSARY DEPTH OF THE TOP OF THE CONDUIT AT THAT POINT.
- D. THE VERTICAL AND HORIZONTAL SEPARATION SHALL BE MAINTAINED AT ALL TIMES UNLESS SPECIFICALLY STATED OTHERWISE BY THE JURISDICTIONAL PERMIT AGENCY. ANY SPECIFIC DEVIATION IN VERTICAL AND HORIZONTAL SEPARATION FROM THOSE DESCRIBED SHALL BE REPORTED TO THE OWNER BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING VERTICAL AND HORIZONTAL SEPARATION AT ALL TIMES AND SHALL BE RESPONSIBLE FOR ANY AND ALL ENCROACHMENTS.

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information at the speed of light

CLACKAMAS BROADBAND EXPRESS
STANDARD PLANS FOR CONSTRUCTION
GENERAL NOTES

CITY: CITY – TOWNSHIP RANGE SECTION:			COUNTY: COUNTY CO., STATE
PLOT DATE: 12/06/2016	SCALE: AS SHOWN	PROJECT NAME--FILENAME.DWG – TAB_SHEET # CBX-DT00.DWG – GN01_1.3	SHEET 1.3

SPECIFICATION SET

PROTECTION OF EXISTING SURVEY MONUMENTS:

THE CONTRACTOR SHALL REPLACE ALL MONUMENTS THAT DEFINE PROPERTY OWNERSHIP SUCH AS IRON RODS, IRON PIPES, BRASS SCREWS, AND REFERENCE POINTS AS REQUIRED BY THE GOVERNING STATE STATUTES. ANY CORNER OR REFERENCE TO A CORNER OF A RECORD OF SURVEY SHALL BE REPLACED BY A LICENSED SURVEYOR WITHIN 90 DAYS OF ITS REMOVAL.

REPLACEMENT MONUMENTS SHALL CONFORM TO STATE STATUTES AS TO TYPE AND STYLE OF IDENTIFICATION WITH THE NECESSARY RECORD OF SURVEY IDENTIFYING WHAT WAS FOUND ORIGINALLY AND WHAT WAS SET AND THE DATE THE REPLACEMENT WAS SET. THE RECORD OF SURVEY SHALL BE COMPLETED IN CONFORMANCE WITH THE REGULATIONS OF THE RELEVANT STATE AND THE JURISDICTIONAL PERMIT AGENCY SURVEYOR.

IT IS THE CONTRACTORS RESPONSIBILITY TO UNDERSTAND AND COMPLY WITH THE JURISDICTIONAL STATUTES SET FORTH BY THE RELEVANT GOVERNING AGENCY.

CONSTRUCTION STAKING:

IN AREAS WHERE THE CONDUIT ALIGNMENT IS NOT CLEARLY DEFINED BY CURB LINES, FENCE LINES, OR OTHER EVIDENCE OF THE RIGHT-OF-WAY, IT IS RECOMMENDED THAT THE CONTRACTOR COORDINATE WITH A PROFESSIONAL SURVEYOR TO PROVIDE STAKING OR PAINT MARKS TO CLEARLY IDENTIFY THE PROPOSED ALIGNMENT.

IF ADDITIONAL FIELD STAKING OF PROPOSED CONDUIT ALIGNMENTS AND VAULT LOCATIONS IS REQUIRED, THE CONTRACTOR IS TO CONTACT THE INSPECTOR AND THE PROJECT DESIGNER TO SCHEDULE A FIELD MEET PRIOR TO CONSTRUCTION.

IF DISCREPANCIES BETWEEN PROFESSIONALLY SURVEYED RIGHT-OF-WAY AND THE PROPOSED ALIGNMENT ARE IDENTIFIED CONTRACTOR IS TO NOTIFY THE REGULATORY PERMIT AGENCY INSPECTOR AND THE PROJECT DESIGNER PRIOR TO CONSTRUCTION.

TRAFFIC CONTROL:

WORK ON ANY PUBLIC OR PRIVATE ROW WITH OR WITHOUT PERMIT THROUGH THE GOVERNING AGENCY MAY REQUIRE ADEQUATE TRAFFIC CONTROL TO PERFORM CONSTRUCTION ACTIVITIES.

TRAFFIC WARNING DEVICES AND SIGNS SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR STREETS AND HIGHWAYS (U.S. GOVERNMENT PRINTING OFFICE) AND TO THE GOVERNING AGENCY STANDARD SPECIFICATIONS. HIGH LEVEL WARNING TYPE DEVICES ARE TO BE USED AT ALL TIMES AND SPECIAL WARNING DEVICES MAY BE STIPULATED BY THE JURISDICTIONAL PERMIT AGENCY AT ANY TIME THE USE WILL ADD TO THE SAFETY AND PROTECTION OF TRAFFIC OR PEDESTRIANS IN THE CONSTRUCTION AREA.

A TRAFFIC CONTROL PLAN SHALL BE PREPARED BY THE CONTRACTOR AS REQUIRED AND SUBMITTED TO EACH PERMITTING AGENCY REQUESTING SUCH PLAN FOR REVIEW AND APPROVAL OR REVISION PRIOR TO COMMENCING ANY CONSTRUCTION ACTIVITY FOR THIS PROJECT. THE APPROVED PLAN SHALL BE SUBMITTED TO THE AGENCY AND A COPY OF THE PLAN SHALL BE KEPT AT THE CONSTRUCTION SITE AND MUST BE READILY AVAILABLE FOR REVIEW BY AGENCY REPRESENTATIVES.

PERMITS – FRANCHISES – EASEMENTS:

PHYSICAL WORK SHALL NOT BE STARTED UNTIL THE GOVERNING AGENCY INSPECTOR AND THE CONTRACTOR ARE IN POSSESSION OF AND HAVE CAREFULLY REVIEWED AND FULLY UNDERSTAND ALL CONDITIONS AND SPECIFICATIONS SET FORTH IN THE REQUIRED PERMITS, FRANCHISES, AND/OR EASEMENTS.

THE PLACING FOREMAN SHALL HAVE A COPY OF THE PERMITS/EASEMENTS ON SITE AT ALL TIMES.

ANY CONFLICT BETWEEN WORK PRINT SPECIFICATIONS AND SPECIFICATIONS SET FORTH UNDER RELATED PERMITS, FRANCHISES, AND/OR EASEMENTS MUST BE CLEARED BY PROPER COMPANY AUTHORITY BEFORE PROGRESSING WITH WORK INVOLVED.

AERIAL NOTES:

ALL AERIAL CONSTRUCTION IS TO BE PERFORMED TO INDUSTRY ACCEPTABLE STANDARDS.

ALL NEW OR EXISTING CABLE HEIGHTS OF ATTACHMENT TO BE DOCUMENTED AT TIME OF CONSTRUCTION.

6.6M STRAND TO BE USED WITH STANDARD 5/8"POLE LINE HARDWARE UNLESS OTHERWISE SPECIFIED. BOND STRAND TO POWER MGN WHERE APPLICABLE.

ALL EXTENSION ARMS TO BE PLACED WILL BE EPOXY ARMS UNLESS OTHERWISE NOTED OR APPROVED BY THE INSPECTOR.

PUPI ARMS TO BE TYPE TB2000 UNLESS OTHERWISE SPECIFIED AND ARE TO BE INSTALLED ACCORDING TO THE POLE OWNER SPECIFICATIONS OR MANUFACTURER SPECIFICATIONS. POLE OWNER SPECIFICATIONS MAY SUPERSEDE MANUFACTURER SPECIFICATION FOR INSTALLATION AS REQUIRED. TYPICAL INSTALLATION INCLUDES UTILIZING TWO (2) THROUGH BOLTS AND NO LAG BOLTS.

ALL ANCHORS TO BE USED WILL BE 3/4 SCREW IN TYPE.

ALL STRAPS WILL BE PLACED 4" BEFORE AND AFTER EVERY SUPPORTING CLAMP AT A MINIMUM OF 21" APART. REPAIR / REPLACE EXISTING LASHING WIRE IF DAMAGED, AND ADD ANY MISSING GROUNDS.

CONTRACTOR TO PLUG ALL VACATED HOLES FROM ABANDONED OR RELOCATED ATTACHMENTS PER POLE OWNER SPECIFICATIONS.

IT IS THE CONTRACTORS RESPONSIBILITY TO MAINTAIN AND FOLLOW NATIONAL ELECTRIC SAFETY CODE ALONG WITH APPLICABLE LOCAL AND REGIONAL GOVERNING AUTHORITIES. ANY DISCREPANCIES BETWEEN THESE AUTHORITIES AND OR THE CONSTRUCTION PRINTS IS TO BE VALIDATED WITH THE DESIGNER OR OWNER PRIOR TO CONSTRUCTION.

CONDUITS:

ALL DIRECT BURIED CONDUIT SHALL BE PVC HEAVY WALL (SCH 40) OR HDPE SDR11 DIRECT BURIAL UNLESS OTHERWISE SPECIFIED.

CONTRACTOR SUPPLIED MATERIALS SHALL CONFORM TO THE JURISDICTIONAL PERMIT AGENCY AND OWNER SPECIFICATIONS.

ALL CONTRACTOR SUPPLIED MATERIALS SHALL INCLUDE A CERTIFIED TEST REPORT CLEARLY STATING THAT THOSE SUPPLIED MATERIALS COMPLY WITH ANY SUCH SPECIFICATION.

ALL CONDUIT IS TO BE PLACED IN THE LOCATION SHOWN ON THE DESIGN PRINTS WITH MINIMUM COVER OF 36 INCHES OR AS NOTED ON THE DRAWINGS OR SPECIFIED BY THE REGULATORY PERMIT AGENCY.

THE TOTAL LENGTH OF TRENCH OPEN AT ANY ONE TIME IS TO BE KEPT TO A MINIMUM.

ALL HDPE CONDUITS ENTERING VAULTS SHALL HAVE A MINIMUM 5.0 FOOT STRAIGHT SECTION OF SCH 40 PVC CONDUIT SLEEVE. THIS STRAIGHT SECTION SHALL BE PERPENDICULAR TO THE WALL OF SAID MANHOLE AND SHALL BE SMOOTH AND FREE OF ALL BURRS AND OTHER FEATURES THAT MAY DAMAGE CABLES. PLUGS SHALL BE UTILIZED TO ORGANIZE, SECURE AND SEAL THE HDPE CONDUITS WITHIN THE SLEEVE AS THEY ENTER THE VAULT.

ALL PVC OR HDPE CONDUITS ARE TO BE PLUGGED WITH COMPRESSION STYLE PLUGS. ANY CONDUITS CONTAINING FIBER CABLES WILL REQUIRE SIMPLEX COMPRESSION PLUGS SEALING THE CONDUIT AROUND THE CABLE.

CASINGS:

ANY REQUIRED STEEL CASING PIPE SHALL BE 100% FILET WELD (3/16") OR THREADED COUPLING. IF WELDED THE CONTRACTOR SHALL PROVE THE INTERIOR DIMENSION BY PULLING A MANDREL COMPLETELY THROUGH THE WELDED JOINT IN BOTH DIRECTIONS. PIPE JOINTS SHALL BE STEEL BRUSHED AND PAINTED WITH A ZINC RICH FLAT BLACK METAL PRIMER PAINT.

VAULTS / HANDHOLES:

ALL VAULTS TO BE UTILITY VAULT PRECAST TYPE 444--LA UNLESS OTHERWISE SPECIFIED. 444--LA VAULTS ARE TO BE FULLY EQUIPPED WITH LADDERS, CABLE RACKS, SUPPORTS, AND PULLING IRONS AS SHOWN BELOW:

(4) "L" BRACKETS
(4) 8 HOLE – 113/4" CUT RACKS
(4) SPRING NUT & SCREWS – (1/2" NUT, 1/2" X 1 1/4" PLATED CAP SCREW)

MOUNT BRACKETS ON 2' GALVANIZED "C" CHANNELS, 2 EA. SIDE, 18" APART

ALL VAULTS SHALL HAVE A SUMP CAST IN PLACE FOR DE--WATERING

GROUND COVER OVER ALL VAULTS SHOULD BE 36" MINIMUM DEPTH BELOW FINISHED STREET OR SIDEWALK ELEVATION UNLESS OTHERWISE SPECIFIED IN THE VAULT DETAILS OR ON ANY RIGHT-OF-WAY PERMIT ISSUED. IN ADDITION, DEPTH OF COVER OVER MANHOLES SHALL NOT EXCEED 60" OF COVER TO THE TOP OF THE VAULT OR PER VAULT MANUFACTURER'S SPECIFICATIONS.

EXCAVATION OVER VAULTS IS CONSIDERED PART OF THE TOTAL VAULT INSTALLATION.

IF ANY FIELD SLOTTING OF PRECAST CONCRETE VAULTS IS REQUIRED TO PROVIDE ACCESS FOR CABLES AND CONDUIT NOT PROVIDED WITH A BLOCKOUT FOR THAT PURPOSE; THE FIELD SLOT SHALL BE REPAIRED BY SPLICING ANY REINFORCING REBAR THAT HAS BEEN CUT TO ALLOW CABLE ENTRY AND SHALL BE SEALED WITH NON--SHRINK CONCRETE GROUT. THE CONTRACTOR SHALL NOTIFY OWNER IMMEDIATELY IF IT BECOMES EVIDENT FIELD SLOTTING WILL BE NECESSARY. FIELD SLOTS SHALL BE SAWCUT (SCORED INSIDE AND OUT) AND BRUSH HAMMER TO PROVIDE A ROUGHENED SURFACE FOR GROUT BONDING AND TO MINIMIZE REINFORCING SPLICES.

EXCAVATION FOR ALL PRECAST VAULTS AND HANDHOLES MUST ALLOW FOR OVERALL ASSEMBLED HEIGHT OF THE VAULT PLUS ADDED HEIGHT OF RISERS AND BEDDING MATERIAL CONSISTING OF 6" OF COMPACTED SAND OR GRAVEL, GRADED LEVEL. A MINIMUM EXCAVATION CLEARANCE OF 4" AROUND THE SIDEWALLS OF THE VAULT IS REQUIRED FOR EASE OF INSTALLATION.


BACKFILL AROUND ALL VAULTS SHOULD CONSIST OF COMPACTED SELECT BACKFILL MATERIAL OR IN ACCORDANCE WITH AGENCY SPECIFIED BACKFILL. IN NO CASE SHALL THE MATERIAL BE SATURATED SOIL, OR CONTAIN LARGE ROCKS OR CHUNKS. NO VOIDS SHOULD REMAIN BETWEEN THE VAULT WALLS AND NATIVE SOIL OF EXCAVATION. BACKFILLING SHOULD NOT BE DONE UNTIL THE VAULT IS COMPLETELY ASSEMBLED MAKING CERTAIN TO COMPACT THE BACKFILL PROGRESSIVELY IN 12" LIFTS FROM THE BOTTOM TO THE TOP SURFACE. WHEN USING MECHANICAL VIBRATORY EQUIPMENT TO OBTAIN 95% COMPACTION NEAR COMPOSITE VAULTS AND HANDHOLES, CONTRACTOR IS TO PLACE INTERNAL CROSS--BRACING PER MANUFACTURER SPECIFICATIONS.

ALL BACKFILLING IS THE RESPONSIBILITY OF THE CONTRACTOR.

ALL GROUTING OF RISERS, COVERS, CONDUIT, OR SPECIFIC SECTIONS OF VAULTS IS THE RESPONSIBILITY OF THE CONTRACTOR. NON--SHRINK CONCRETE GROUT WILL BE USED TO SEAL ALL JOINTS AND APPLIED IN A MANNER TO ENSURE COMPLETE FILLING OF VOIDS IN THE JOINT BEING SEALED.

ACCESS DOORS SHALL BE CONSTRUCTED OF STEEL, ALUMINUM, OR CONCRETE WITH AN APPROVED NON--SLIP SURFACE HAVING A STATIC COEFFICIENT OF FRICTION BETWEEN 0.60 AND 1.00 AS DETERMINED BY ASTM DESIGNATION C 1028--89. ACCESS DOORS ON INCLINED SURFACES GREATER THAN 4 % SHALL HAVE A COEFFICIENT OF FRICTION BETWEEN 0.80 AND 1.00.

OWNERS ARE RESPONSIBLE TO MAINTAIN THE NON--SLIP CHARACTERISTICS OF THE ACCESS DOOR OVER ITS LIFE IN THE SIDEWALK AREA.



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CLACKAMAS BROADBAND EXPRESS
STANDARD PLANS FOR CONSTRUCTION
GENERAL NOTES

CITY: CITY – TOWNSHIP RANGE SECTION:

COUNTY: COUNTY CO., STATE

PLOT DATE:
12/06/2016

SCALE:
AS SHOWN

PROJECT NAME--FILENAME.DWG – TAB_SHEET #
CBX--DT00.DWG – GN02_1.4

SHEET
1.4

SPECIFICATION SET

EXISTING MANHOLE ACCESS:

THE CONTRACTOR SHALL CORE DRILL EXISTING CONCRETE WALLS TO PROVIDE ACCESS FOR CONDUIT AS SHOWN IN THE PLANS. CORE DRILLING SHALL PROVIDE A MINIMUM 1 INCH LARGER DIAMETER HOLE THAN THE SIZE OF CONDUIT BEING PLACED. THE CONTRACTOR SHALL SEAL THE VOID BETWEEN THE CONDUIT AND THE CONCRETE WITH NON-SHRINK EPOXY GROUT.

THE CONTRACTOR SHALL REPAIR ANY STRUCTURAL REINFORCING DAMAGED BY CORE DRILLING. REINFORCING REPAIR SHALL BE IN CONFORMANCE WITH THE REQUIREMENTS AND SPECIFICATIONS OF CRSI (CONCRETE REINFORCED STEEL INSTITUTE).

IF THE CONTRACTOR ELECTS TO ADJUST AN ACCESS HOLE IN WHICH REINFORCING WAS FOUND TO AVOID DAMAGE TO THE REINFORCING STEEL HE SHALL FULLY EXPOSE THE SURFACE OF THE REBAR AND FIELD COAT THE BAR WITH A ZINC RICH PAINT BEFORE PLACING NON-SHRINK EPOXY GROUT TO REPAIR DAMAGE.

LOCATORS AND MARKERS:

THE CONTRACTOR IS RESPONSIBLE FOR PLACING APPROPRIATE MARKERS TO INSURE THAT OTHER UTILITIES WORKING IN THE AREA OF OWNER FACILITIES ARE AWARE OF THEIR PRESENCE BEFORE DAMAGE CAN OCCUR. MARKING WILL BE MADE BY USE OF "WARNING TAPE" AND "POST MARKERS" FOR CONDUIT, AND 3M ELECTRONIC MARKER SYSTEM (EMS) LOCATORS FOR VAULTS AND HANDHOLES.

"WARNING TAPE" SHOULD BE PLACED A MINIMUM OF 12" ABOVE ANY CONDUIT ALONG THE ENTIRE TRENCH ROUTE, WHILE ADDITIONALLY "POST MARKERS" SHOULD BE PLACED EVERY 500' IN SUBURBAN AREAS AND 1000' IN RURAL AREAS.

BOTH VAULTS AND HANDHOLES ARE TO BE EQUIPPED WITH EMS LOCATORS. VAULTS AND HANDHOLES SHALL HAVE EMS MARKERS INSTALLED SECURED ON THE WALL AT THE TOP TO EASE LOCATING.

LOCATE WIRE AND BONDING:

ALL UNDERGROUND TELECOMMUNICATIONS INFRASTRUCTURE CONDUIT SHALL HAVE A #12 AWG HDPE 30 MIL COPPER STRANDED LOCATE WIRE PLACED INSIDE OR ALONG THE CONDUIT ALIGNMENT UNLESS SPECIFIED OTHERWISE BY THE GOVERNING PERMIT AGENCY.

ALL LOCATE WIRE SHALL BE EFFECTIVELY GROUNDED PER INDUSTRY ACCEPTABLE STANDARDS. T-3 LOCATE WIRE ACCESS TERMINALS OR APPROVED EQUIVALENT SHALL BE INSTALLED AT VAULT/HANDHOLE LOCATIONS FOR TERMINATION OF LOCATE WIRE AND HAVE SUFFICIENT ACCESS FOR THE EASE OF LOCATING FACILITIES. LOCATE WIRE TERMINALS ARE TO BE MOUNTED ON AN ACCESSORY ANGLE BRACKET ON THE INTERIOR RISER / WALL OF A CONCRETE VAULT OR INTERIOR WALL OF A FIBERGLASS / COMPOSITE VAULT.

ALL NEW UTILITY VAULT OR HANDHOLE INSTALLATIONS SHALL REQUIRE THE INSTALLATION OF A 5/8" COPPER CLAD GROUND ROD IN OR THROUGH THE BOTTOM OF THE VAULT USING CAUTION NOT TO DAMAGE EXISTING SUBSTRUCTURE. GROUND ROD SHALL BE OF PROPER LENGTH AND PLACEMENT TO ACHIEVE AN EFFECTIVE ELECTRICAL GROUND PER NEC / NESC AND THE GOVERNING PERMIT AGENCY. #6 AWG COPPER WIRE IS TO BE PLACED FROM THE GROUND ROD TO THE GROUND LUG ON THE T-3 LOCATE WIRE TERMINAL. ALL #12 AWG LOCATE WIRE ENTERING VAULTS OR HANDHOLES SHALL BE TERMINATED TO THE T-3 LOCATE WIRE ACCESS TERMINAL USING MANUFACTURER SUPPLIED BINDING POSTS. BONDING STRAPS ARE TO BE INSTALLED BETWEEN ALL #12 BINDING POSTS AND THE #6 GROUND LUG EFFECTIVELY GROUNDING ALL LOCATE WIRE WITHIN THE STRUCTURE.

LOCATE WIRE PLACED THROUGH CONDUIT RISERS WHEN TRANSITIONING FROM UNDERGROUND TO AERIAL ON UTILITY POLES SHALL BE BONDED TO THE MGN ON THE POLE NEAR THE TOP OF THE RISER. IF NO MGN IS PRESENT A NEW #6 AWG VERTICAL GROUND AND 5/8" COPPER CLAD GROUND ROD SHALL BE PLACED PER NESC / NEC GUIDELINES TO ACCOMMODATE EFFECTIVE GROUNDING.

PRIOR TO TOUCHING, WORKING OR CONNECTING LOCATING EQUIPMENT TO LOCATE WIRE, THE SYSTEM MUST BE TESTED FOR INDUCED VOLTAGE. INSTALL FILTER PROTECTOR / ARRESTOR AS REQUIRED ON ONE OR BOTH LOCATE WIRES IF INDUCED VOLTAGE EXCEEDS 50VAC.

*ALL LOCATE WIRE TERMINATION AND BONDING OF CONDUCTIVE MATERIALS TO BE IN ACCORDANCE WITH THE LATEST VERSION OF THE NATIONAL ELECTRIC SAFETY CODE AND THE NATIONAL ELECTRIC CODE.

BUILDING CONSTRUCTION:

ALL WORK SHALL BE DONE IN A "NEAT AND WORKMAN" LIKE MANNER, IN CONFORMITY WITH LOCAL, STATE AND FEDERAL BUILDING CODES. ALL WORK MUST COMPLY WITH APPLICABLE DATA SYSTEM STANDARDS AND NATIONAL ELECTRIC CODE STANDARD SPECIFICATIONS. STANDARDS INCLUDE, BUT ARE NOT LIMITED TO, EIA/TIA 568-B COMMERCIAL BUILDING WIRING STANDARDS AND EIA/TIA 569-A COMMERCIAL BUILDING STANDARD FOR TELECOMMUNICATIONS PATHWAYS AND SPACES.

AS-BUILT DATA – METHOD OF PROCEDURE:

UPON NOTIFICATION OF COMPLETION OF THE WORK AND ACCEPTANCE BY THE OWNER, THE CONTRACTOR SHALL PROVIDE THE PROJECT MANAGER WITH A SET OF NEAT AND ACCURATE "AS-BUILT" DRAWINGS WITHIN 10 BUSINESS DAYS OF COMPLETION OF THE PROJECT.

AS-BUILT DATA SHALL BE UPDATED AND MAINTAINED DAILY ON FIELD COPY DRAWINGS FOR THE DURATION OF CONSTRUCTION. UPON COMPLETION OF THE PROJECT, THE AS-BUILT DATA SHALL BE TRANSFERRED TO A CLEAN SET OF CONSTRUCTION DRAWINGS FOR SUBMITTAL TO THE PROJECT MANAGER.

THE AS-BUILT DATA SHALL BE DETAILED ON THE DRAWINGS IN EITHER COLORED INK OR COLORED PENCIL ACCORDING TO THE FOLLOWING COLOR CODES:

RED: WORK PLACED ACCORDING TO DESIGN AND CHANGES TO THE DESIGN
GREEN: WORK NOT PLACED ACCORDING TO THE DESIGN; OMIT FROM DESIGN
BLUE: EXISTING UTILITIES, FACILITIES, COMMENTS AND NOTES

- 1) WORK PERFORMED ACCORDING TO THE DESIGN SHALL BE HIGHLIGHTED OR LOCATED IN RED.
- 2) WORK PERFORMED ACCORDING TO APPROVED CHANGES OR VARIATIONS TO THE DESIGN SHALL BE NEATLY DRAWN AND DETAILED ON THE DRAWINGS SHOWING HOW THE CHANGES WERE CONSTRUCTED IN THE FIELD.
- 3) WORK THAT WAS DESIGNED BUT NOT PERFORMED AS SHOWN ON THE DRAWINGS SHALL BE HIGHLIGHTED OR LOCATED IN GREEN TO SHOW THAT THE WORK FUNCTION WAS NOT CONSTRUCTED AS DESIGNED.
- 4) EXISTING FACILITIES OR UTILITIES ENCOUNTERED; CONSTRUCTION NOTES; ADDITIONAL CONSTRUCTION RELATED INFORMATION IDENTIFIED IN THE FIELD SHALL BE NEATLY DRAWN AND DETAILED IN BLUE.

COLORED HIGHLIGHTER PENS ACCORDING TO THE COLOR CODES AS DETAILED ABOVE ARE ACCEPTABLE. FLUORESCENT YELLOW HIGHLIGHTER PENS ARE NOT AN ACCEPTABLE FORM OF AS-BUILT COLORING.

AS-BUILT DRAWINGS SHALL CONTAIN THE FOLLOWING DATA AT A MINIMUM FOR EACH OF THE FOLLOWING WORK FUNCTIONS:

AERIAL SEGMENTS:

- 1) POINT OF ATTACHMENT HEIGHT FROM THE GROUND TO THE CABLE AND/OR STRAND ON ALL POLES.
- 2) CABLE FOOTAGE (SEQUENTIAL) MARKINGS AT ALL CABLE ENDS; START AND END OF SLACK STORAGE AND CONDUIT ENTRANCE / EXIT POINTS.
- 3) LOCATION OF ALL SLACK STORAGE AND CABLE SPLICE POINTS.
- 4) ANCHOR AND DOWN GUY SIZE PLACED AND LEAD LENGTH BETWEEN THE ANCHOR AND THE POLE.

UNDERGROUND SEGMENTS:

- 1) DEPTH OF CONDUIT MEASURED EVERY 25 FEET AND AT EVERY CHANGE IN DIRECTION ALONG THE CONDUIT ALIGNMENT.
- 2) OFFSET DISTANCE MEASURED EVERY 25 FEET AND AT EVERY CHANGE IN DIRECTION FROM THE ALIGNMENT TO A CURB, EDGE OF PAVEMENT OR OTHER PHYSICAL REFERENCE OBJECT.
- 3) LOCATION AND DEPTH OF VAULTS, HAND HOLES AND JUNCTION BOXES PLACED.
- 4) DEPTH, TYPE AND DIRECTION OF ANY EXISTING UTILITY ENCOUNTERED CROSSING THE CONDUIT ROUTE.
- 5) LOCATION OF MAGNETIC LOCATING TARGETS PLACED.
- 6) CABLE FOOTAGE (SEQUENTIAL) MARKINGS AT ALL CABLE ENDS, START AND END OF SLACK STORAGE, CONDUIT ENTRANCE / EXIT POINTS.
- 7) ACTUAL QUANTITY OF CABLE SLACK STORAGE LEFT IN VAULT LOCATIONS.
- 8) ACTUAL WALL TO WALL MEASUREMENTS OF CONDUIT SEGMENTS BETWEEN VAULTS.
- 9) PROVIDE DETAILED VAULT BUTTERFLY DRAWINGS INCLUDING CONDUIT ENTRY AND EXIT LOCATIONS; CONDUIT SIZE & TYPE; CABLE ROUTING; CABLE COILS; SPLICE CASES; RACKING; LOCATE WIRES; LOCATE TERMINALS; GROUND RODS; GROUNDING; AND GENERAL ORIENTATION.

AS-BUILT DATA – METHOD OF PROCEDURE:

DIRECTIONAL BORING:

- 1) DEPTH OF CONDUIT MEASURED EVERY 10 FEET WITH A RUNNING LINE OFFSET DISTANCE FROM A CURB, EDGE OF PAVEMENT OR OTHER PHYSICAL REFERENCE OBJECT.
- 2) BORE PLAN AND PROFILE DRAWING REFLECTING THE DEPTH AND RUNNING LINE OFFSET MEASUREMENT EVERY 10 FEET THROUGHOUT THE ENTIRE LENGTH OF THE BORE; DETAIL BORE PROFILES WITH DEPTH AND LOCATION OF ALL VISUALLY VERIFIED UTILITIES (I.E. ALL POT-HOLED UTILITIES EXPOSED ALONG THE BORE ALIGNMENT)

- 3) AS-BUILT DRAWINGS SHALL HAVE THE WORDS "AS-BUILT" WITH THE NAME OF THE CONTRACTOR AND THE DATE STAMPED ON EVERY SHEET IN THE DRAWING PACKAGE.

ANY CHANGES OR DEVIATIONS FROM THE CONSTRUCTION DRAWINGS MUST BE APPROVED BY THE PROJECT MANAGER OR THE OWNER PRIOR TO MAKING ANY OF THE SAID CHANGES OR DEVIATIONS.

PHOTO DOCUMENTATION:


ALL UNDERGROUND VAULTS; JUNCTION BOXES, CONDUIT INFRASTRUCTURE; TRENCHES; EXCAVATIONS; AND RESTORATION TO BE CLEARLY PHOTOGRAPHED BEFORE, DURING AND AFTER CONSTRUCTION TO VERIFY THAT CONSTRUCTION PROCEDURES ARE MET. FACILITY ENTRANCES, PULL BOXES, CABLE RACEWAYS, SPLICE CASES, SPLICE TRAYS, TERMINATION RACKS AND OTHER EQUIPMENT OR ELECTRONICS INSTALLED BY CONTRACTOR TO BE PHOTOGRAPHED AT THE TIME OF INSTALLATION TO ENSURE PROPER PROCEDURES ARE MET AND TO PROVIDE ADEQUATE DOCUMENTATION TO SERVE AS ASBUILT RECORD.

GENERAL SPECIFICATIONS DISCLAIMER

THE INFORMATION CONTAINED IN THESE SPECIFICATIONS PROVIDES GENERAL GUIDELINES NECESSARY TO FACILITATE THE INSTALLATION OF COMMUNICATIONS INFRASTRUCTURE. ANY DISCREPANCIES BETWEEN THESE SPECIFICATIONS AND THE LOCAL GOVERNING AUTHORITY OR PERMIT AGENCY IS TO BE VALIDATED WITH THE DESIGNER OR OWNER PRIOR TO CONSTRUCTION. WHERE DETAILS ARE SHOWN, THEY ARE PROVIDED AS A REFERENCE FOR PLACEMENT OF COMMUNICATIONS INFRASTRUCTURE AND ACCEPTABLE INDUSTRY STANDARDS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE INSTALLATION OF ALL INFRASTRUCTURE MEETS THE APPLICABLE LOCAL, REGIONAL AND NATIONAL BUILDING CODES AND SAFETY STANDARDS. COMMSTRUCTURE CONSULTING, LLC. DOES NOT ASSUME LIABILITY FOR THE NEGLIGENCE OF THE INSTALLATION CONTRACTOR AND THEIR ABILITY TO PERFORM ANY ASPECT OF THE WORK HEREIN ACCORDING TO THESE STANDARDS.

REFERENCES:

- EIA/TIA COMMERCIAL BUILDING WIRING STANDARD, 606 AND ALL RECOGNIZED TSBS.
- NATIONAL ELECTRIC SAFETY CODE
- UNDERWRITER’S LABORATORIES (UL): APPLICABLE LISTINGS AND RATINGS
- 1) ALL CONDUIT PLACED ON PRIVATE PROPERTY IS TO BE SCH 40 PVC IF PLACED OUTSIDE THE BUILDING AND EMT IF PLACED WITHIN THE BUILDING. RISER CONDUIT ON THE EXTERIOR OF BUILDING IS TO BE GRC UNLESS OTHERWISE SPECIFIED.
- 2) ALL CONDUIT IS TO BE EQUIPPED WITH INNERDUCT AS SPECIFIED.
- 3) 90 BENDS ARE TO BE "SWEEP" BENDS, 3' RADIUS, UNLESS OTHERWISE SPECIFIED.
- 4) CONDUIT PATHWAYS WITHIN BUILDING INTERIORS SHALL BE SUPPORTED WITH APPROPRIATE HARDWARE SPECIFIC TO THE EXISTING MATERIAL OR STRUCTURE.
- 5) ALL EXTERIOR WALL PENETRATIONS ARE TO BE RESEALED PER BUILDING AND FIRE CODE.
- 6) ALL INTERIOR WALL PENETRATIONS ARE TO COMPLY WITH PERTINENT BUILDING AND FIRE CODES AND ARE TO BE CONSTRUCTED IN SUCH A MANNER AS TO INSURE THE INTEGRITY OF THE PENETRATED WALL.
- 7) ALL PULL BOXES ARE TO BE NEMA TYPE 3R OR EQUIVALENT.
- 8) NOTIFY THE "BUILDING CONTACT" PERSON A MINIMUM OF 48 HOURS PRIOR TO COMMENCING ANY WORK ON THE PREMISES.



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REV	DESCRIPTION	DATE	BY	APP

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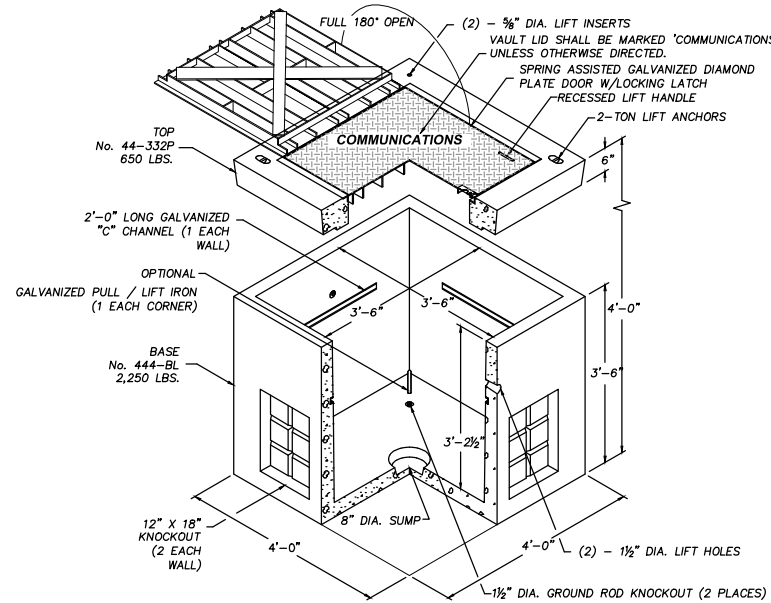
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CLACKAMAS BROADBAND EXPRESS
STANDARD PLANS FOR CONSTRUCTION
GENERAL NOTES

CITY: CITY – TOWNSHIP RANGE SECTION: COUNTY: COUNTY CO., STATE

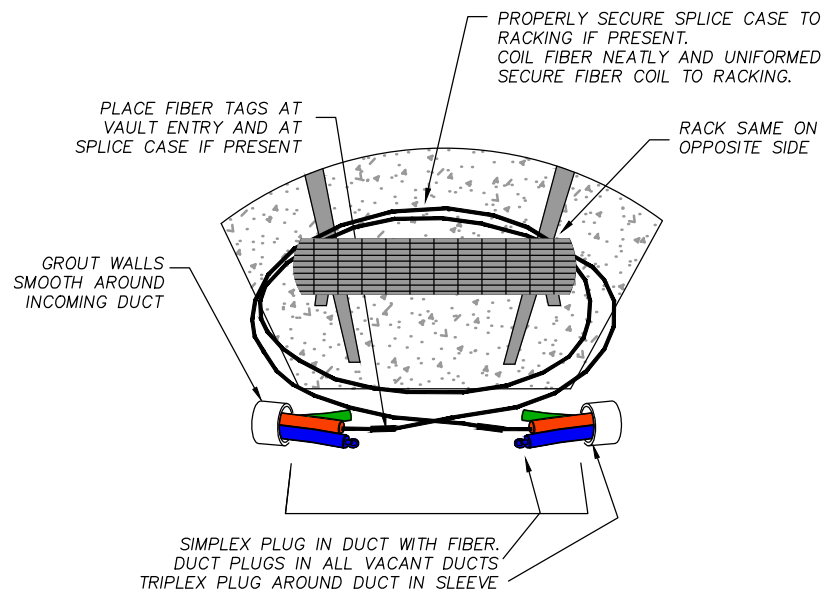
PLOT DATE: 12/06/2016	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG – TAB_SHEET # CBX-DT00.DWG – GN03_1.5	SHEET 1.5
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SPECIFICATION SET



(SIDEWALK / INCIDENTAL TRAFFIC LOC.)
UTILITY VAULT PRE-CAST 444-LA

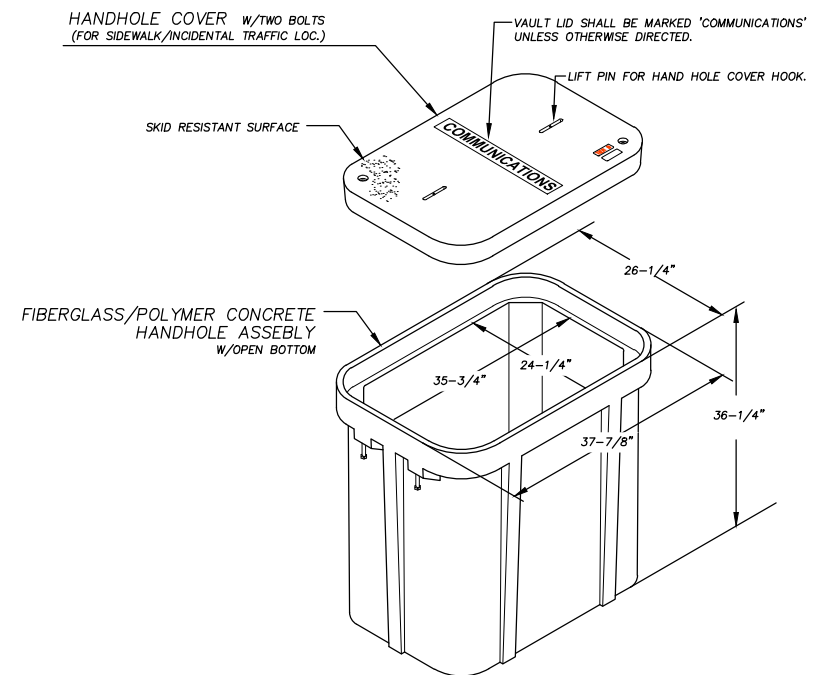
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VAULT SHALL BE FREE OF DIRT AND DEBRIS.

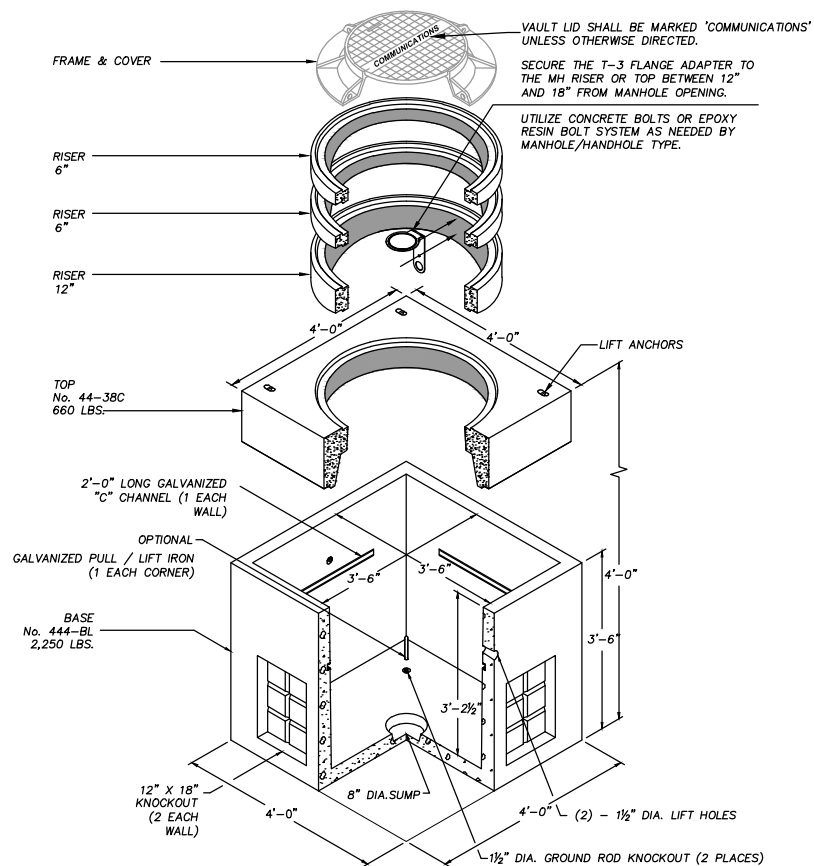
TYPICAL VAULT INTERIOR DETAIL

SCALE: 1" = N.T.S.



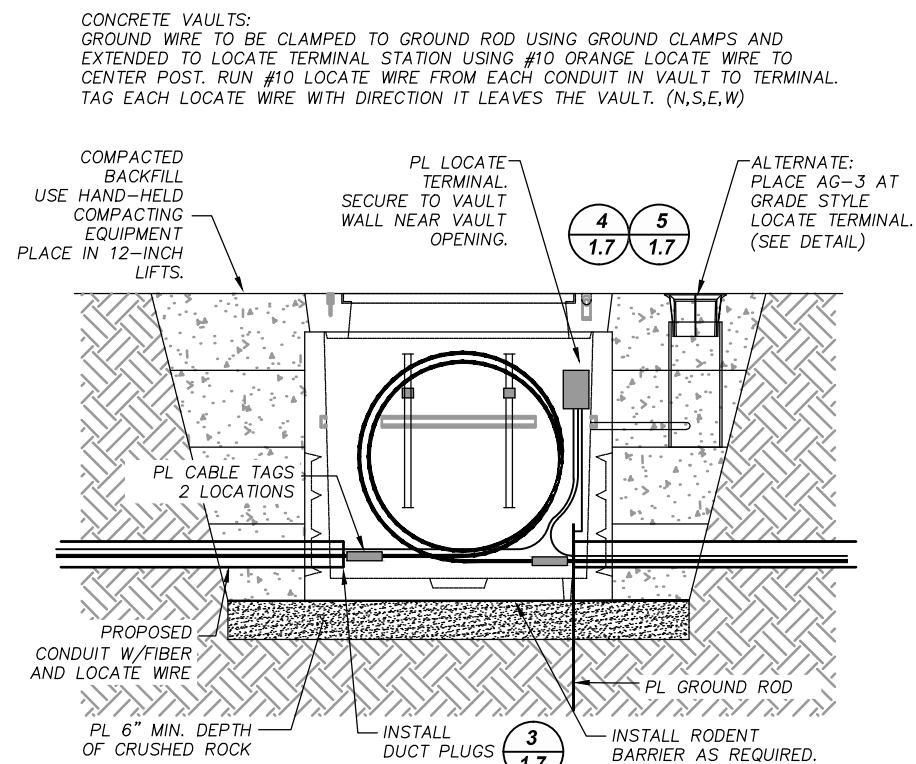
OPEN BOTTOM HANDHOLE

SCALE: (ADDITIONAL DETAILS SEE 3.1/1.6)



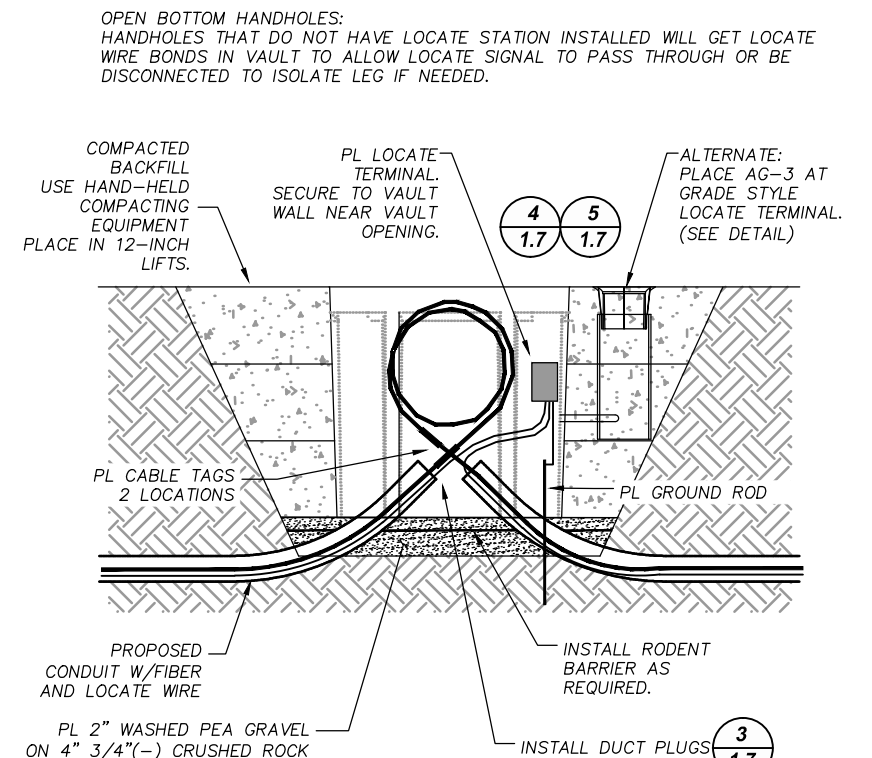
(ROADWAY / SUSTAINED TRAFFIC LOC.)
UTILITY VAULT PRE-CAST 444-LA

SCALE: (ADDITIONAL DETAILS SEE 1.1/1.6 & 4/1.6)



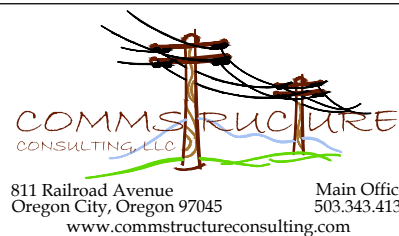
**VAULT SECTION INTERIOR DETAIL
UTILITY VAULT PRE-CAST MANHOLE**

SCALE: (ADDITIONAL DETAILS SEE 4/1.7 & 5/1.7)



**VAULT SECTION INTERIOR DETAIL
OPEN BOTTOM HANDHOLE**

SCALE: (ADDITIONAL DETAILS SEE 4/1.7 & 5/1.7)

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CLACKAMAS BROADBAND EXPRESS STANDARD PLANS FOR CONSTRUCTION VAULT DETAILS

CITY: CITY - TOWNSHIP RANGE SECTION:

PLOT DATE:
12/06/2016

SCALE:

AS SHOWN

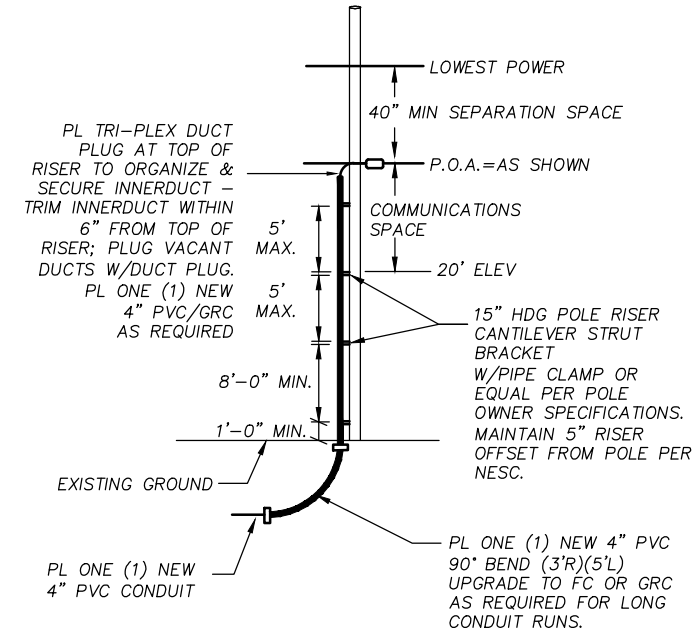
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CBX-DT00.DWG - DT01 1.6

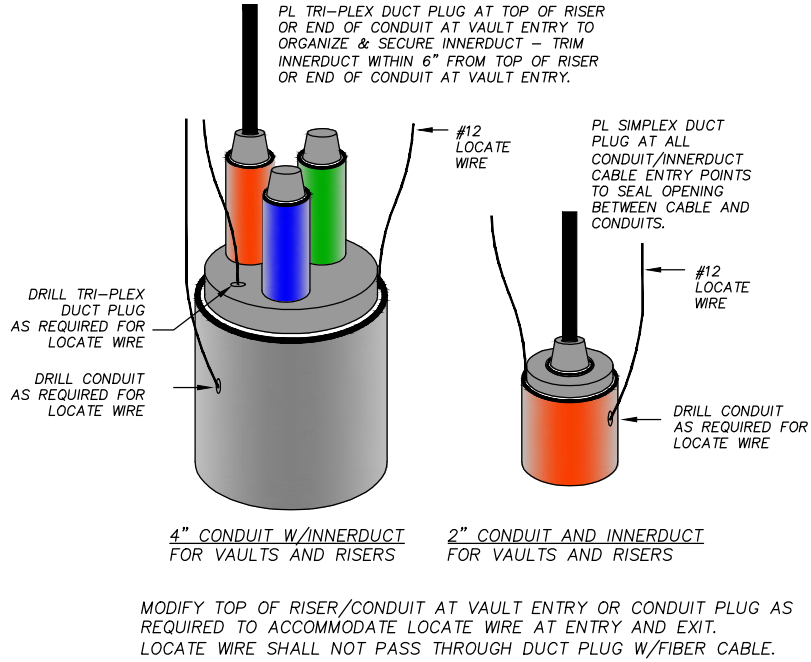
COUNTY: COUNTY CO., STATE

1.6

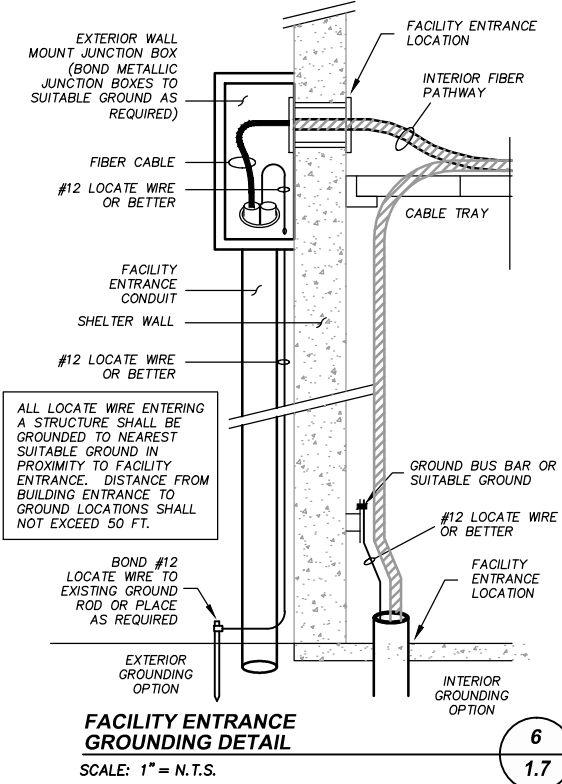
SPECIFICATION SET



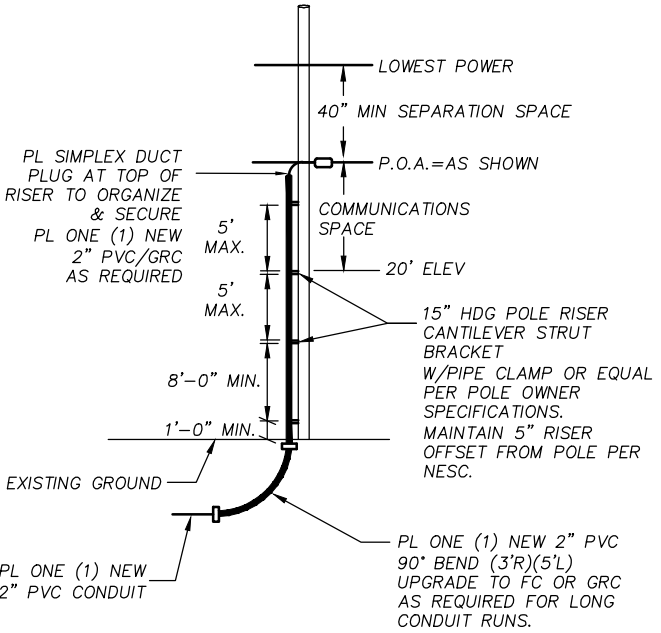
4" RISER DETAIL 1 SCALE: (ADDITIONAL DETAILS SEE 3/1.7 & 5/1.7) 1.7



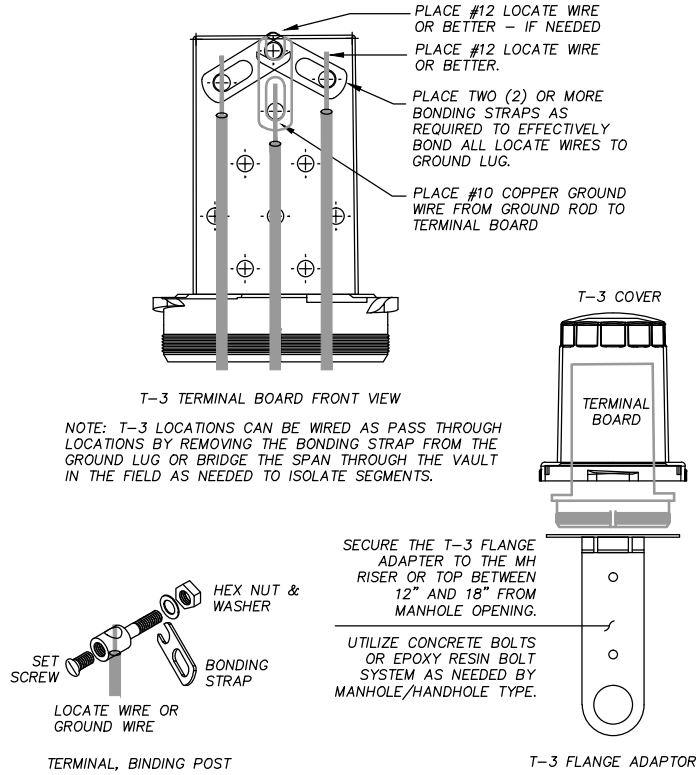
SIMPLEX DUCT PLUG DETAIL AND TRI-PLEX DUCT PLUG DETAILS 5 SCALE: 1" = N.T.S. 1.7



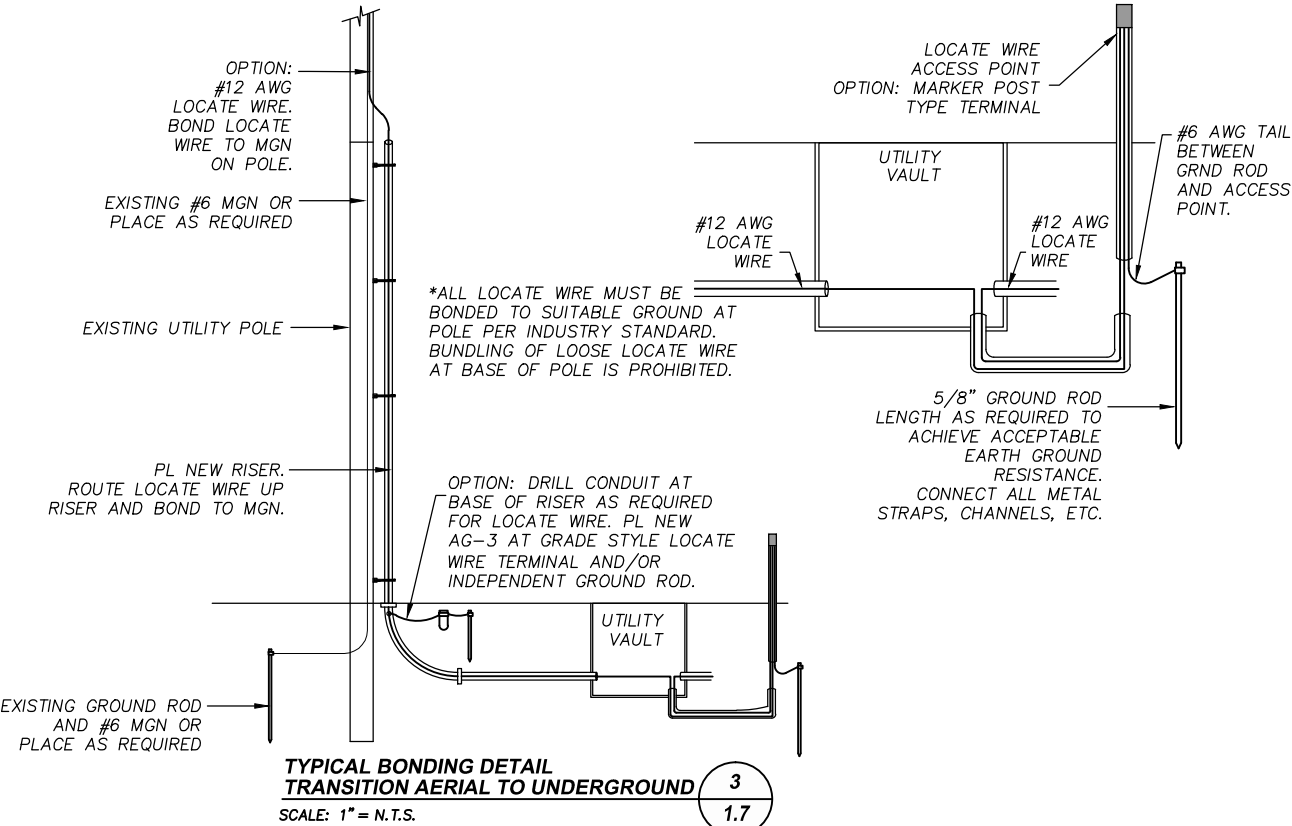
FACILITY ENTRANCE GROUNDING DETAIL 6 SCALE: 1" = N.T.S. 1.7



2" RISER DETAIL 2 SCALE: (ADDITIONAL DETAILS SEE 3/1.7 & 5/1.7) 1.7



T-3 LOCATE TEST STATION WITH FLANGE ADAPTOR 4 SCALE: 1" = N.T.S. 1.7



TYPICAL BONDING DETAIL TRANSITION AERIAL TO UNDERGROUND 3 SCALE: 1" = N.T.S. 1.7



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REV	DESCRIPTION	DATE	BY APP

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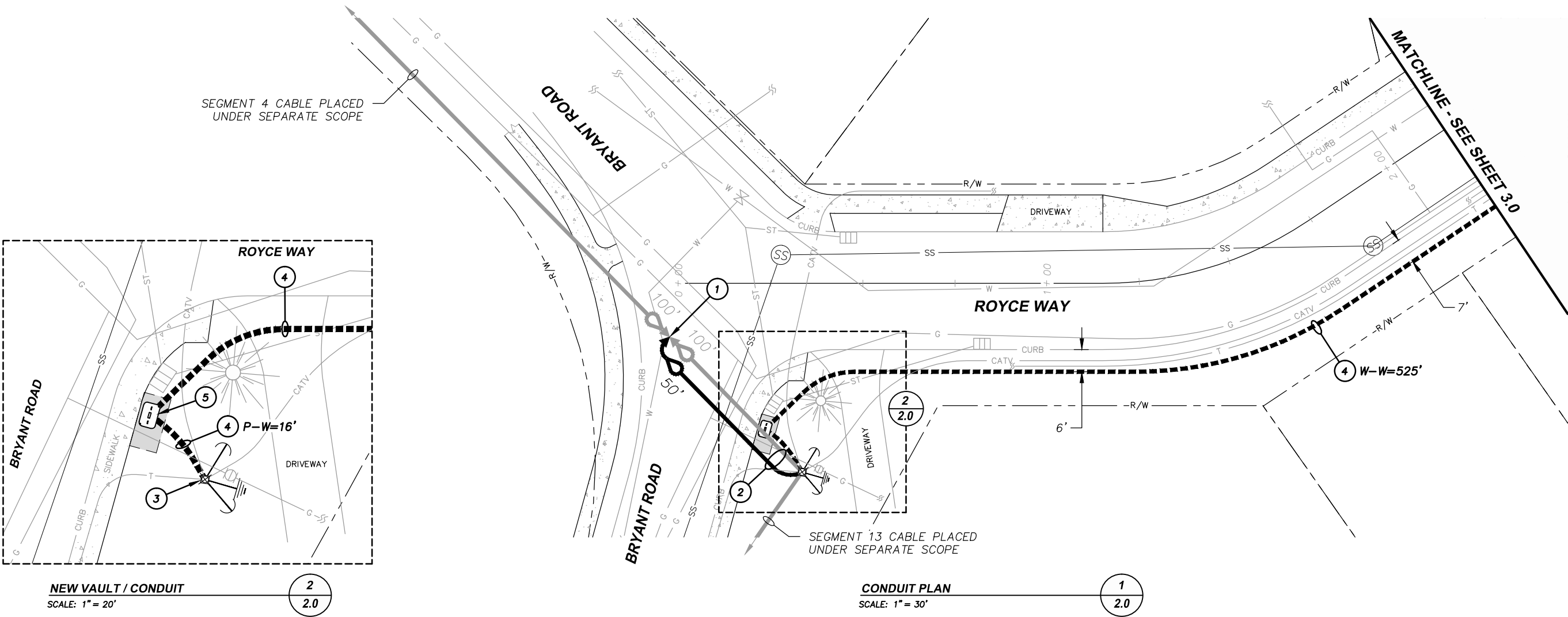
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CLACKAMAS BROADBAND EXPRESS
STANDARD PLANS FOR CONSTRUCTION
RISER DETAILS AND LOCATE WIRE / BONDING DETAILS

CITY: CITY - TOWNSHIP RANGE SECTION: COUNTY: COUNTY CO., STATE

PLOT DATE: 12/06/2016 SCALE: AS SHOWN PROJECT NAME-FILENAME.DWG - TAB_SHEET # CBX-DT00.DWG - DT02_1.7 SHEET 1.7

CONSTRUCTION SET

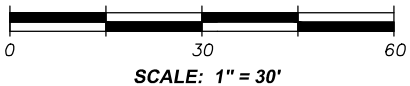


CONSTRUCTION NOTES

- 1 PROPOSED MID-SHEATH SPLICE LOCATION
EXISTING 100' SLACK STORAGE IN NEW 144F BACKBONE CABLE. (SEGMENT 4)
LEAVE 100' SLACK STORAGE IN NEW 24F LATERAL CABLE. (SEGMENT 1)
PROPOSED 100' SLACK STORAGE IN NEW 144F BACKBONE CABLE. (SEGMENT 13)
- 2 EXISTING 144F CABLE AND 6.6M STRAND.
LASH NEW 24F CABLE TO EXISTING CABLE AND STRAND.
- 3 EXISTING POLE #10. PL NEW 2" PVC CONDUIT RISER (10' GRC) ON NEW STANDOFF BRACKETS.
PL #6 VERTICAL GROUND ON POLE AS REQUIRED - BOND LOCATE WIRE TO MGN ON POLE.
PL NEW 24F CABLE AND #12 AWG LOCATE WIRE THROUGH NEW RISER AND TRANSITION TO UNDERGROUND.
- 4 PL NEW 2" SCH-40 PVC CONDUIT.
PL NEW 24F CABLE AND #12 AWG LOCATE WIRE THROUGH CONDUIT.
- 5 PL NEW 24X36X36 OPEN BOTTOM UTILITY VAULT WITH HEAVY DUTY TWO BOLT LID - PROPOSED BORE PIT LOCATION.
PL NEW GROUND ROD, LOCATE WIRE ACCESS POINT AND GROUND WIRE IN VAULT.
BOND #12 AWG LOCATE WIRE TO ACCESS POINT.
PL NEW #6 AWG TAIL BETWEEN GROUND ROD AND TEST STATION GROUND LUG.
LEAVE 50' SLACK STORAGE IN NEW 24F CABLE COILED IN

PGE POLE #10 - RISER QUADRANT DETAIL

SCALE: (SEE RISER DETAIL SHEET 1.7)



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CHECKED BY:	<u>J. GREENWOOD</u>	DRAWN BY:	<u>T. BRADLEY</u>	
REVISIONS				
REV	DESCRIPTION	DATE	BY	APP

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information at the speed of light

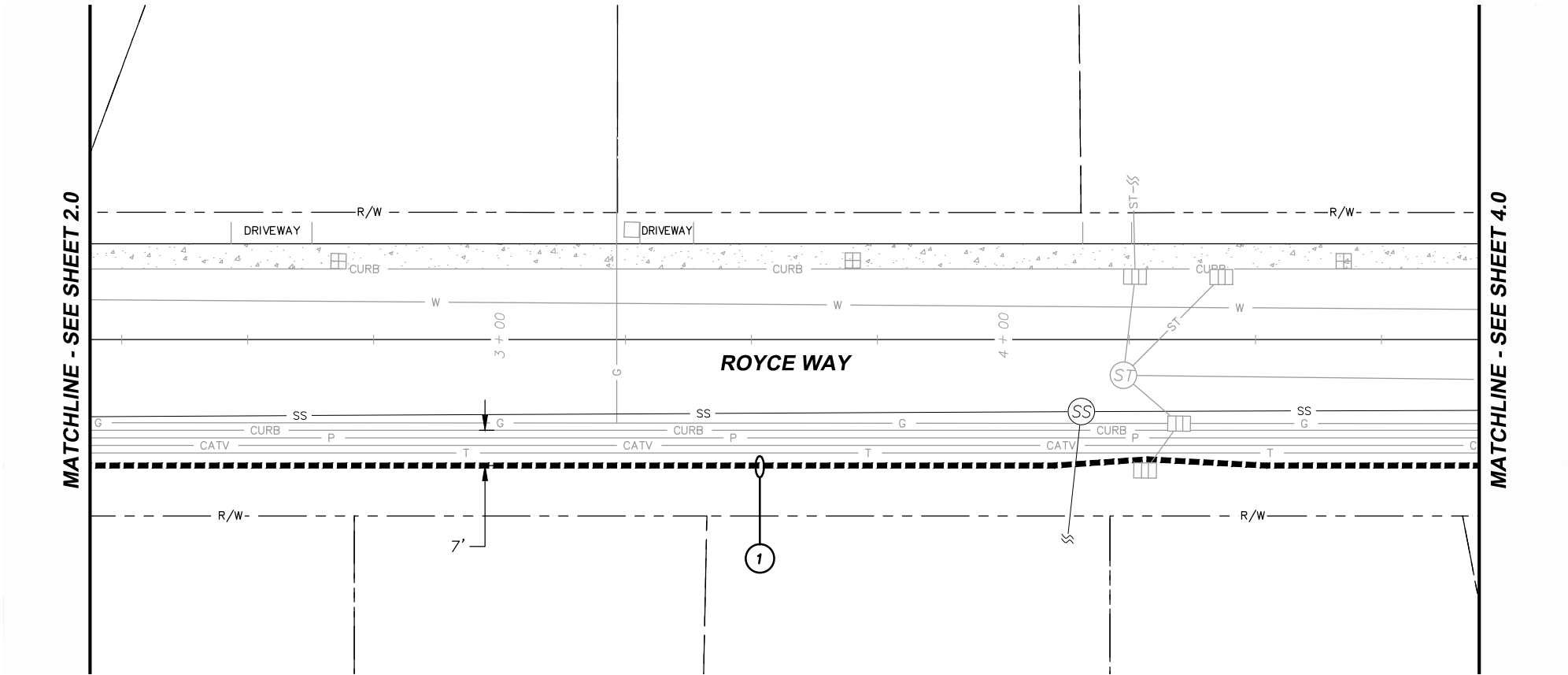
LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 12 - WESTRIDGE ELEMENTARY SCHOOL

CONDUIT PLAN

CITY: LAKE OSWEGO - TOWNSHIP 2 SOUTH RANGE 1 EAST SECTION: 17 COUNTY: CLACKAMAS CO., OREGON

PLOT DATE: 2/17/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG - TAB_SHEET # LAKEO-S12-CP00.DWG - CP01_2.0	SHEET 2.0
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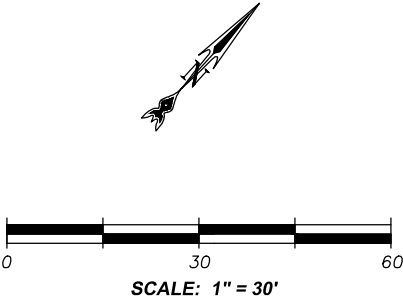
CONSTRUCTION SET



CONDUIT PLAN
SCALE: 1" = 30'

CONSTRUCTION NOTES

- 1 PL NEW 2" SCH-40 PVC CONDUIT FROM VAULT TO VAULT.
PL NEW 24F CABLE AND #12 AWG LOCATE WIRE THROUGH CONDUIT.



Plot Date: 17 Feb 2017, 10:55am By User: Tom
Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 12\LAKEO-S12-CP00.DWG Layout (If Any): CP01_3.0



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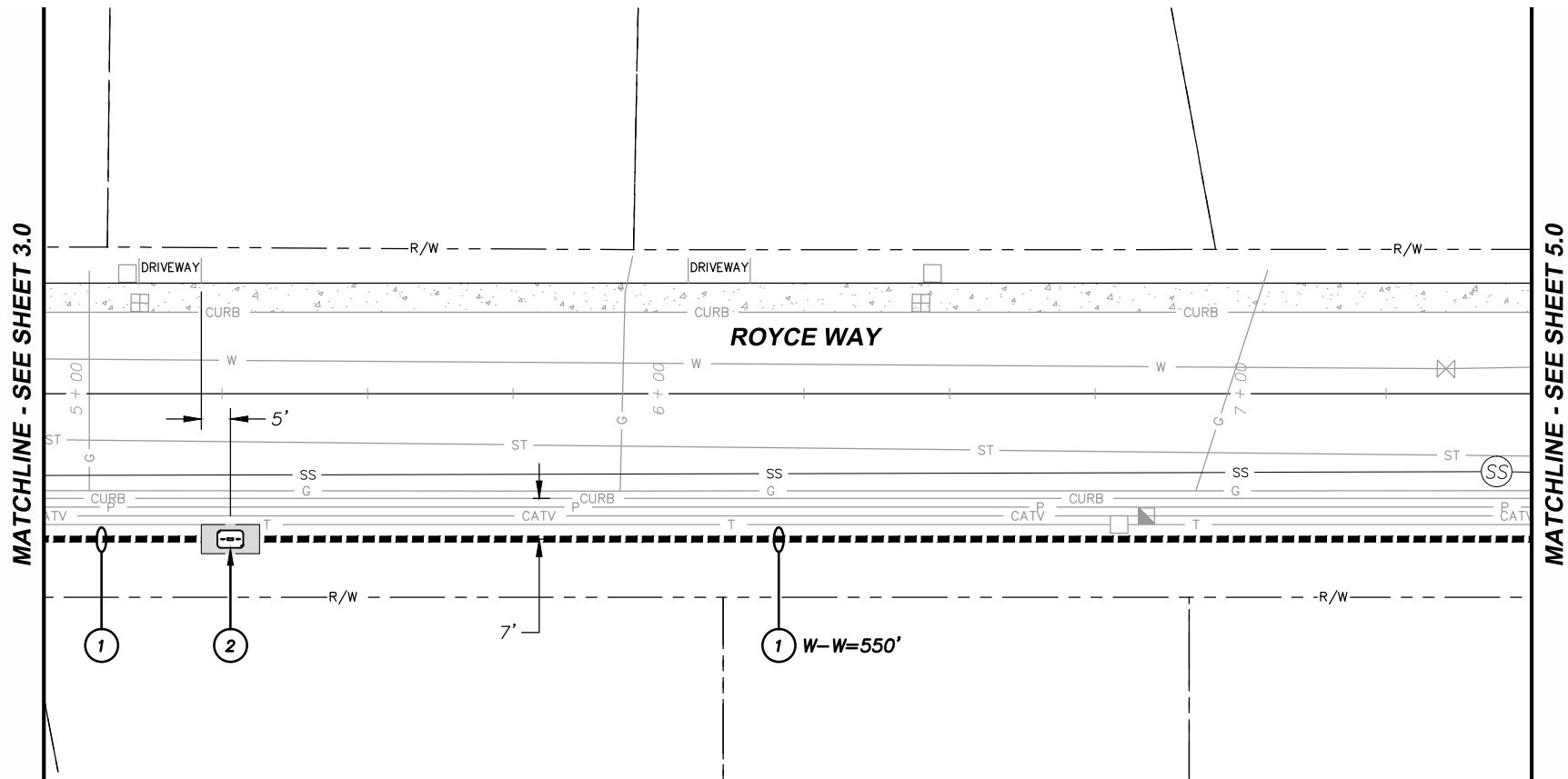
information at the speed of light

LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 12 - WESTRIDGE ELEMENTARY SCHOOL

CONDUIT PLAN

CITY: LAKE OSWEGO – TOWNSHIP 2 SOUTH RANGE 1 EAST SECTION: 17		COUNTY: CLACKAMAS CO., OREGON		
PLOT DATE: 2/17/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG – TAB_SHEET # LAKEO-S12-CP00.DWG – CP01_3.0	SHEET 3.0	

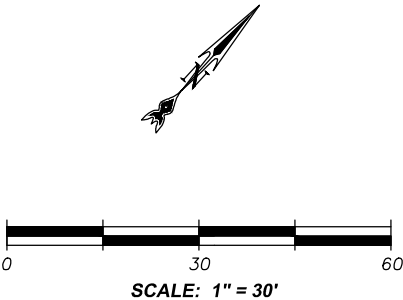
CONSTRUCTION SET



CONDUIT PLAN
SCALE: 1" = 30'

CONSTRUCTION NOTES

- 1 PL NEW 2" SCH-40 PVC CONDUIT FROM VAULT TO VAULT.
PL NEW 24F CABLE AND #12 AWG LOCATE WIRE THROUGH CONDUIT.
- 2 PL NEW 24X36X36 OPEN BOTTOM UTILITY VAULT WITH HEAVY DUTY TWO BOLT LID - PROPOSED BORE PIT LOCATION.
PL NEW GROUND ROD, LOCATE WIRE ACCESS POINT AND GROUND WIRE IN VAULT.
BOND #12 AWG LOCATE WIRE TO ACCESS POINT.
PL NEW #6 AWG TAIL BETWEEN GROUND ROD AND TEST STATION GROUND LUG.
LEAVE 50' SLACK STORAGE IN NEW 24F CABLE COILED IN VAULT.
RESTORE AREA AND LANDSCAPE TO "LIKE NEW" CONDITIONS.



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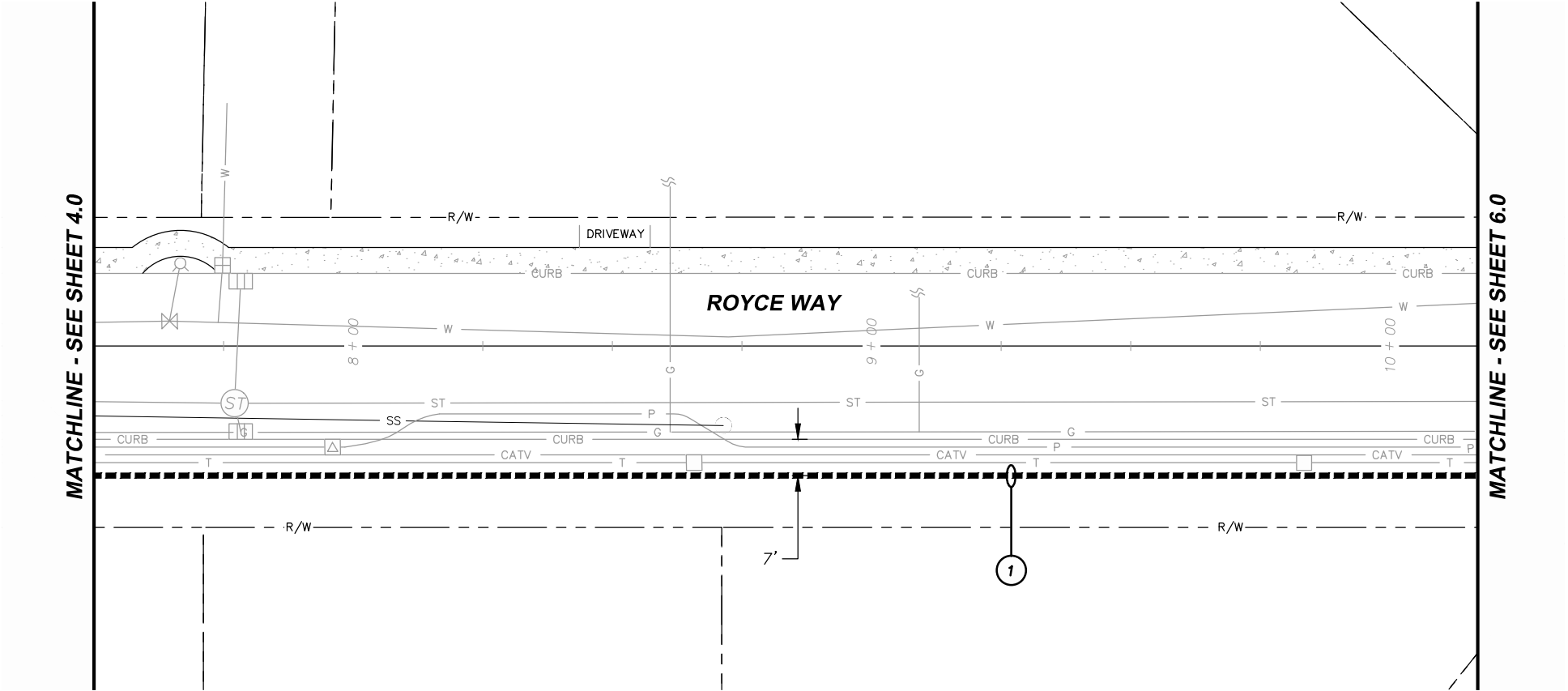
information at the speed of light

LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 12 - WESTRIDGE ELEMENTARY SCHOOL

CONDUIT PLAN

CITY: LAKE OSWEGO - TOWNSHIP 2 SOUTH RANGE 1 EAST SECTION: 17		COUNTY: CLACKAMAS CO., OREGON	
PLOT DATE: 2/17/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG - TAB_SHEET # LAKEO-S12-CP00.DWG - CP01_4.0	SHEET 4.0

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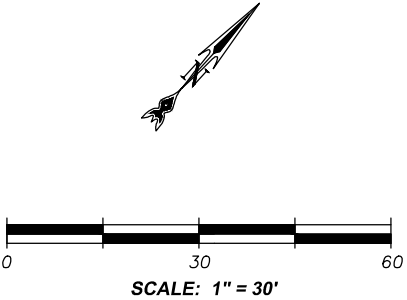


CONDUIT PLAN
SCALE: 1" = 30'

1
5.0

CONSTRUCTION NOTES

- 1 PL NEW 2" SCH-40 PVC CONDUIT FROM VAULT TO VAULT.
PL NEW 24F CABLE AND #12 AWG LOCATE WIRE THROUGH CONDUIT.



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Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 12\LAKEO-S12-CP00.DWG Layout (If Any): CP01_5.0

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REVISIONS				
REV	DESCRIPTION	DATE	BY	APP

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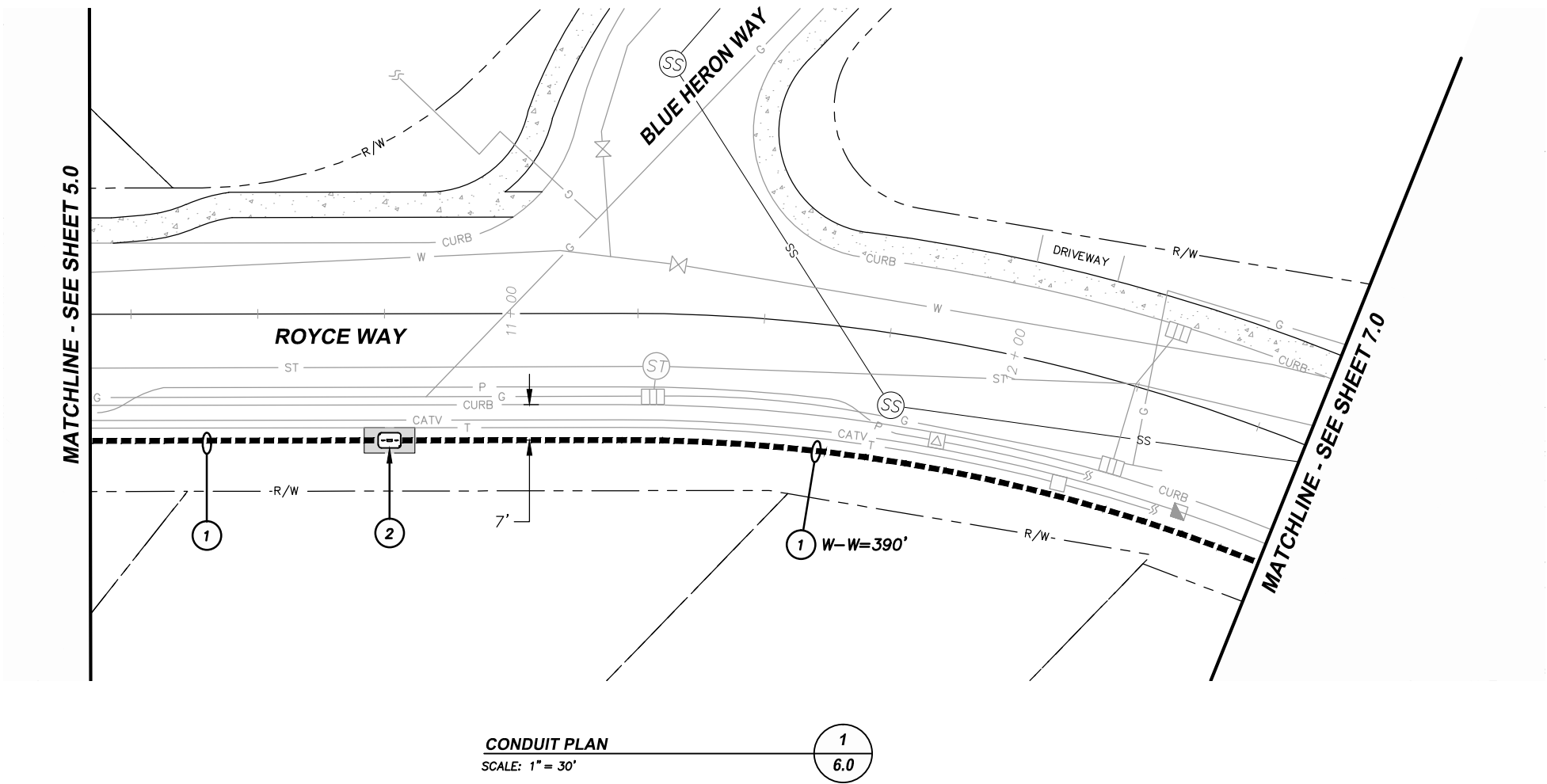
information at the speed of light

LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 12 - WESTRIDGE ELEMENTARY SCHOOL

CONDUIT PLAN

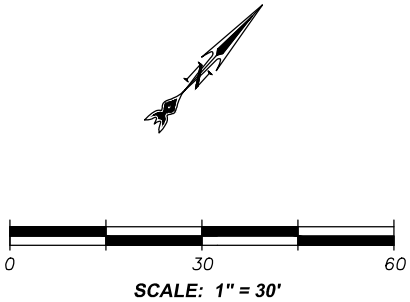
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CONSTRUCTION SET



CONSTRUCTION NOTES

- 1 PL NEW 2" SCH-40 PVC CONDUIT FROM VAULT TO VAULT.
PL NEW 24F CABLE AND #12 AWG LOCATE WIRE THROUGH CONDUIT.
- 2 PL NEW 24X36X36 OPEN BOTTOM UTILITY VAULT WITH HEAVY DUTY TWO BOLT LID - PROPOSED BORE PIT LOCATION.
PL NEW GROUND ROD, LOCATE WIRE ACCESS POINT AND GROUND WIRE IN VAULT.
BOND #12 AWG LOCATE WIRE TO ACCESS POINT.
PL NEW #6 AWG TAIL BETWEEN GROUND ROD AND TEST STATION GROUND LUG.
LEAVE 50' SLACK STORAGE IN NEW 24F CABLE COILED IN VAULT.
RESTORE AREA AND LANDSCAPE TO "LIKE NEW" CONDITIONS.



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REVISIONS				
REV	DESCRIPTION	DATE	BY	APP

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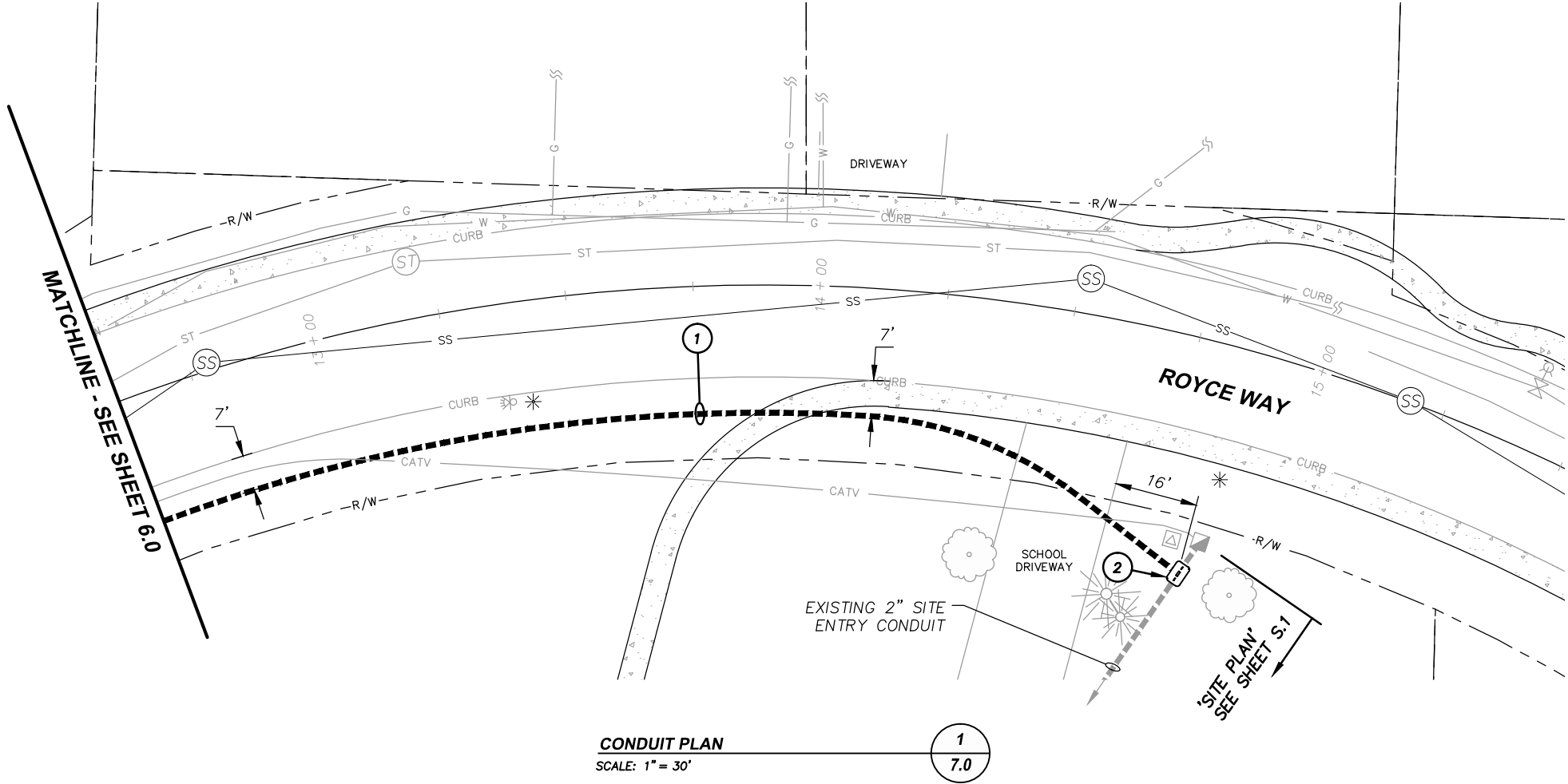
information at the speed of light

LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 12 - WESTRIDGE ELEMENTARY SCHOOL

CONDUIT PLAN

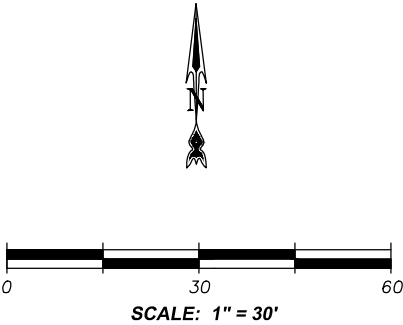
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PLOT DATE: 2/17/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG - TAB_SHEET # LAKEO-S12-CP00.DWG - CP01_6.0	SHEET 6.0

CONSTRUCTION SET



CONSTRUCTION NOTES

- 1 PL NEW 2" SCH-40 PVC CONDUIT FROM VAULT TO VAULT.
PL NEW 24F CABLE AND #12 AWG LOCATE WIRE THROUGH CONDUIT.
- 2 PL NEW 24X36X36 OPEN BOTTOM UTILITY VAULT W/ HEAVY DUTY TWO-BOLT LID - INTERCEPT VAULT.
INTERCEPT EXISTING 2" HDPE BUILDING ENTRY CONDUIT.
PL NEW GROUND ROD, LOCATE WIRE ACCESS POINT AND GROUND WIRE IN VAULT.
BOND #12 AWG LOCATE WIRE TO ACCESS POINT.
PL NEW #6 AWG TAIL BETWEEN GROUND ROD & TEST STATION GROUND LUG.
LEAVE 50' SLACK STORAGE IN NEW 24F CABLE COILED IN VAULT.
RESTORE AREA AND LANDSCAPE TO "LIKE NEW" CONDITIONS.
CAUTION EXISTING TELCO CABLE IN EXISTING CONDUIT



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REVISIONS			
REV	DESCRIPTION	DATE	BY APP

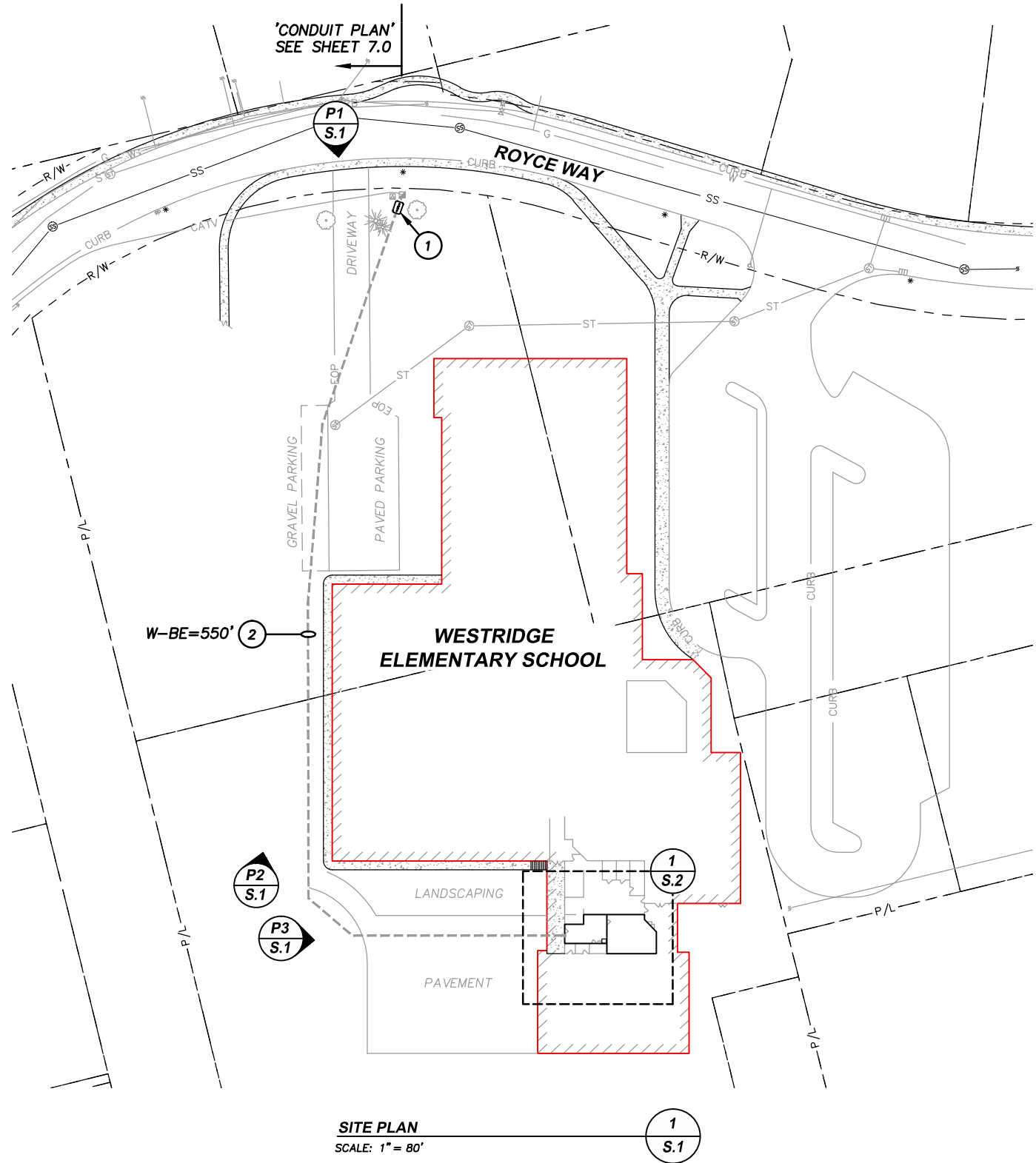
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LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 12 - WESTRIDGE ELEMENTARY SCHOOL
CONDUIT PLAN

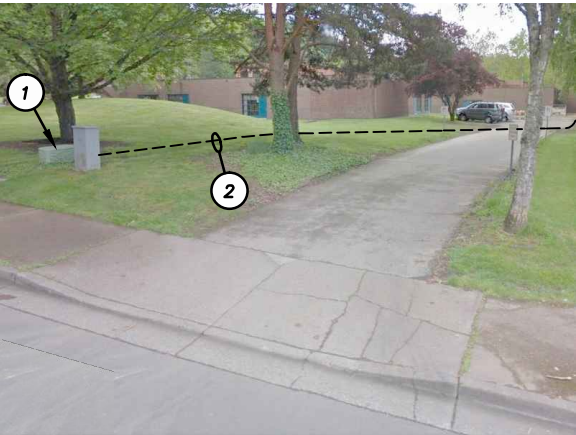
CITY: LAKE OSWEGO - TOWNSHIP 2 SOUTH RANGE 1 EAST SECTION: 17		COUNTY: CLACKAMAS CO., OREGON	
PLOT DATE: 2/17/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG - TAB_SHEET # LAKEO-S12-CP00.DWG - CP01_7.0	SHEET 7.0

CONSTRUCTION SET

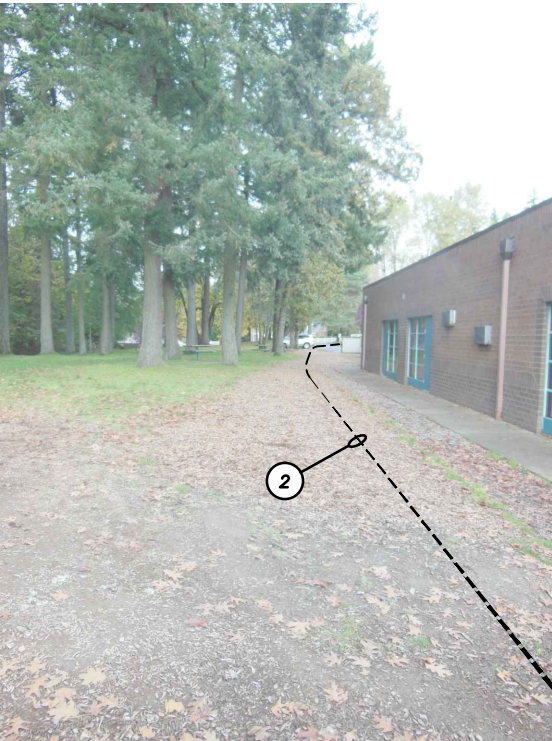


CONSTRUCTION NOTES

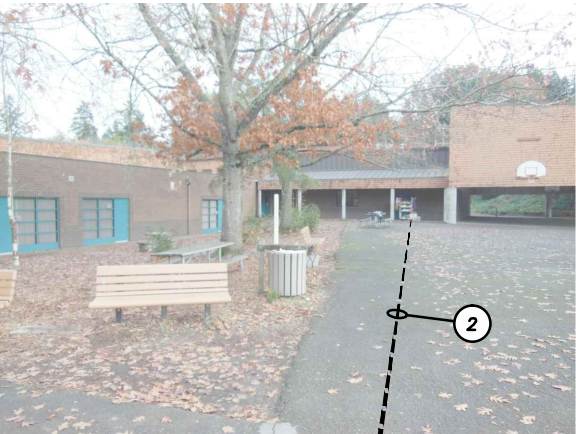
- 1 PL NEW 24X36X36 OPEN BOTTOM UTILITY VAULT W/ HEAVY DUTY TWO-BOLT LID – INTERCEPT VAULT. INTERCEPT EXISTING 2" HDPE BUILDING ENTRY CONDUIT. PL NEW GROUND ROD, LOCATE WIRE ACCESS POINT AND GROUND WIRE IN VAULT. BOND #12 AWG LOCATE WIRE TO ACCESS POINT. PL NEW #6 AWG TAIL BETWEEN GROUND ROD & TEST STATION GROUND LUG. LEAVE 50' SLACK STORAGE IN NEW 24F CABLE COILED IN VAULT. RESTORE AREA AND LANDSCAPE TO "LIKE NEW" CONDITIONS. *CAUTION EXISTING TELCO CABLE IN EXISTING CONDUIT*
- 2 EXISTING 2" SITE ENTRY CONDUIT FROM NEW CBX INTERCEPT VAULT TO WESTRIDGE ELEMENTARY SCHOOL COMM ROOM. PL NEW 24F CABLE AND #12 AWG LOCATE WIRE IN EXISTING CONDUIT.



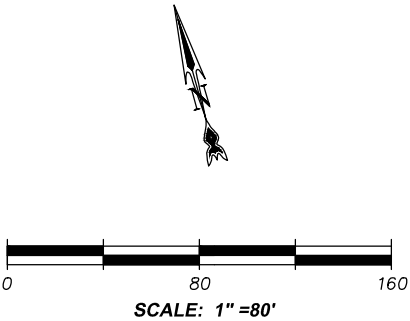
NEW INTERCEPT VAULT
SCALE: N.T.S.
P1
S.1



EXISTING 2" CONDUIT
SCALE: N.T.S.
P2
S.1



EXISTING 2" CONDUIT / BUILDING ENTRANCE
SCALE: N.T.S.
P3
S.1



Plot Date: 17 Feb 2017, 10:56am By User: Tom
Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 12\LAKEO-S12-CP00.DWG Layout (If Any): SP01_S.1

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REV	DESCRIPTION	DATE	BY	APP

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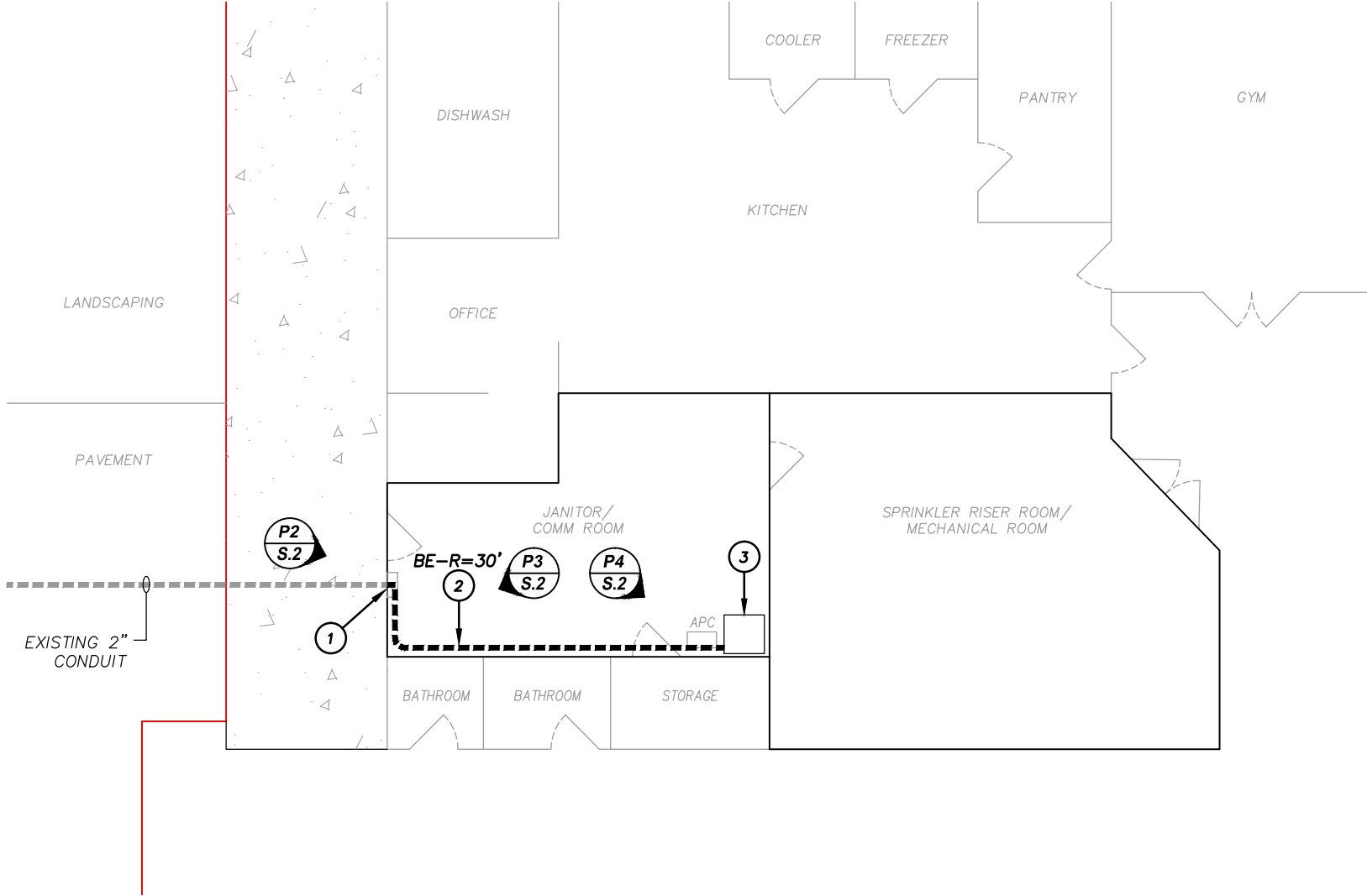
information at the speed of light

LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 12 - WESTRIDGE ELEMENTARY SCHOOL

SITE PLAN

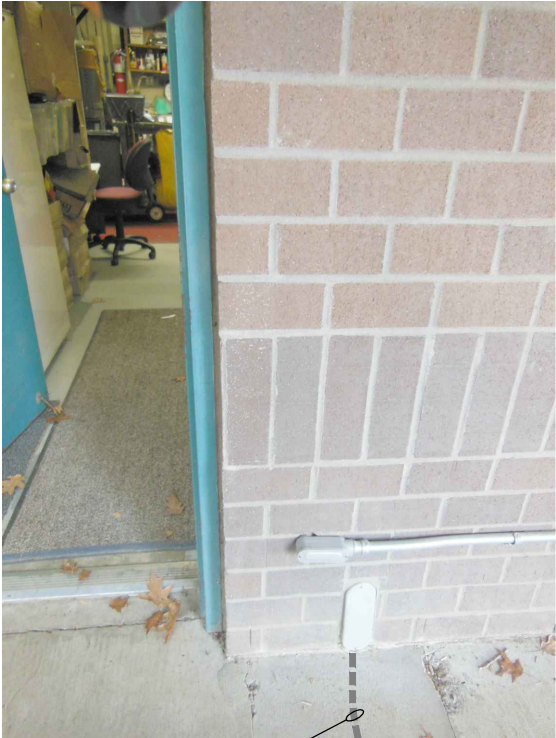
CITY: LAKE OSWEGO – TOWNSHIP 2 SOUTH RANGE 1 EAST SECTION: 17		COUNTY: CLACKAMAS CO., OREGON	
PLOT DATE: 2/17/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG – TAB_SHEET # LAKEO-S12-CP00.DWG – SP01_S.1	SHEET S.1

CONSTRUCTION SET



BUILDING ENTRANCE PLAN
SCALE: 1" = 10'

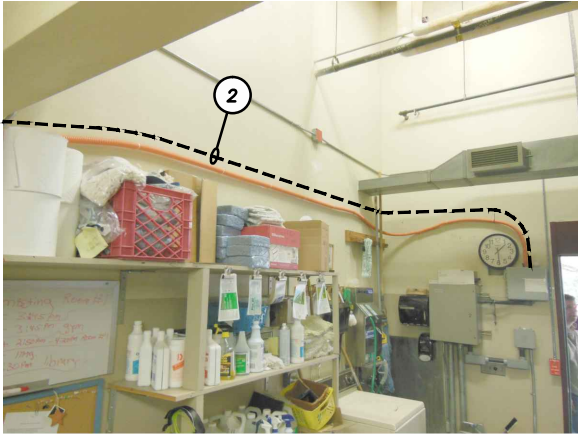
1
S.2



EXISTING 2" CONDUIT

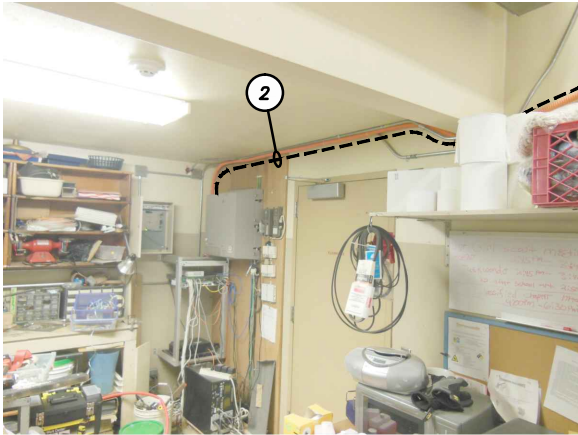
BUILDING ENTRANCE
SCALE: N.T.S.

P2
S.2



COMM ROOM
SCALE: N.T.S.

P3
S.2

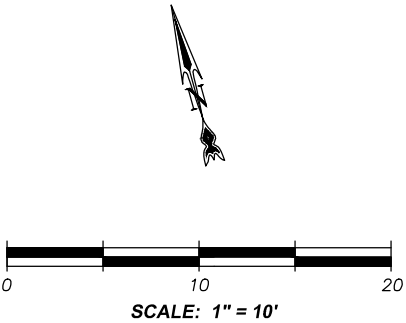


COMM ROOM
SCALE: N.T.S.

P4
S.2

CONSTRUCTION NOTES

- 1 EXISTING BUILDING ENTRY LOCATION W/LB-BOX ON EXTERIOR. PL NEW 24F CABLE AND #12 AWG LOCATE WIRE THROUGH BUILDING ENTRY CONDUIT AND TRANSITION TO INTERIOR. BOND LOCATE WIRE TO NEAREST BUILDING GROUND PER NEC.
- 2 PL NEW 1-1/4" RISER FLEX CONDUIT FROM BUILDING ENTRY TO RACK LOCATION. SECURE TO NEW D-RINGS ON INTERIOR WALLS. PL NEW 24F CABLE THROUGH NEW FLEX CONDUIT.
- 3 EXISTING RACK - PROPOSED CBX EQUIPMENT LOCATION. LEAVE 30' SLACK IN NEW 24F CABLE AT RACK FOR SPLICING.



Plot Date: 17 Feb 2017, 10:56am By User: Tom
Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 12\LAKEO-S12-CP00.DWG Layout (If Any): SP01_S.2

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	DESCRIPTION	DATE	BY	APP

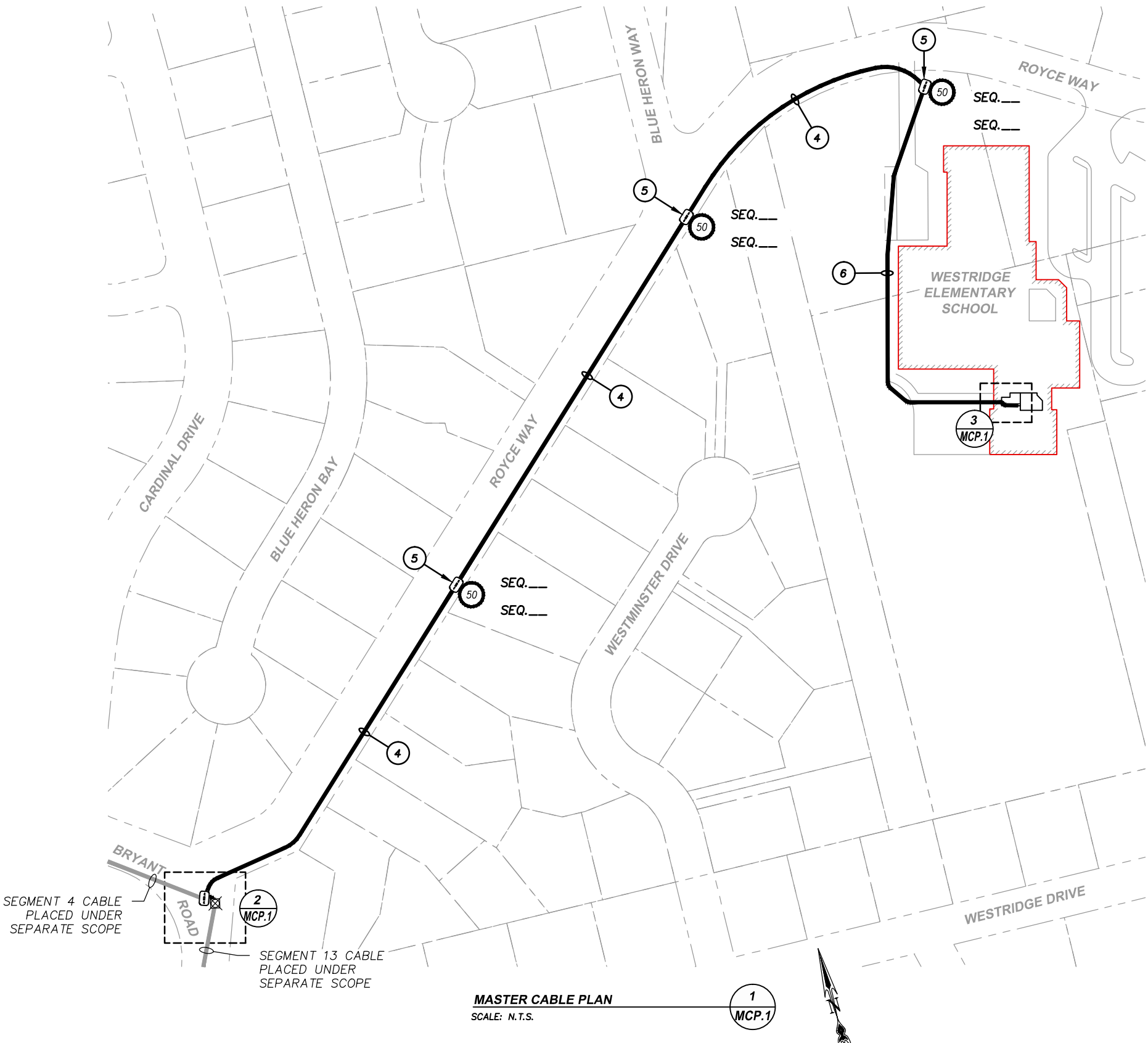
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LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 12 - WESTRIDGE ELEMENTARY SCHOOL
BUILDING ENTRANCE PLAN

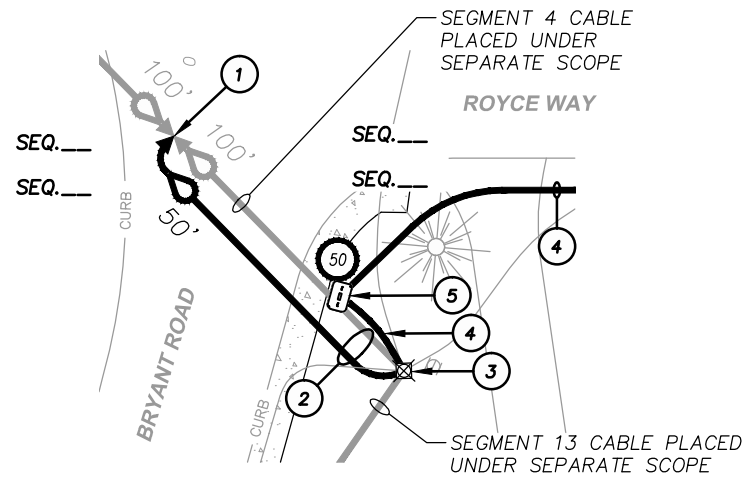
CITY: LAKE OSWEGO - TOWNSHIP 2 SOUTH RANGE 1 EAST SECTION: 17		COUNTY: CLACKAMAS CO., OREGON	
PLOT DATE: 2/17/2017	SCALE: AS SHOWN	PROJECT NAME-FILENAME.DWG - TAB_SHEET # LAKEO-S12-CP00.DWG - SP01_S.2	SHEET S.2

CONSTRUCTION SET

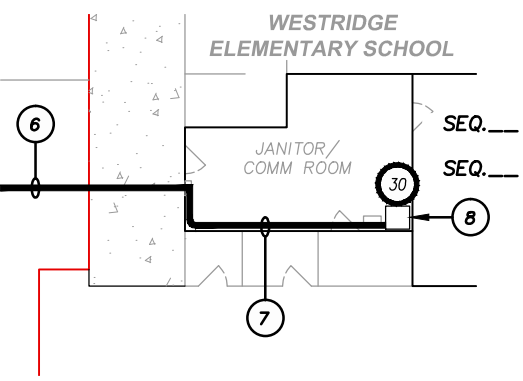


CONSTRUCTION NOTES

- 1 PROPOSED MID-SHEATH SPLICE LOCATION. EXISTING 100' SLACK STORAGE IN NEW 144F BACKBONE CABLE (SEGMENT 4 - PLACED UNDER SEPARATE SCOPE). LEAVE 50' SLACK STORAGE IN NEW 24F LATERAL CABLE - (SEGMENT 12).
- 2 OVERLASH NEW 24F CABLE TO EXISTING CABLE AND STRAND.
- 3 PL NEW 24F CABLE THROUGH NEW 2" RISER.
- 4 PL NEW 24F CABLE THROUGH NEW 2" CONDUIT.
- 5 LEAVE 50' SLACK STORAGE IN NEW 24F CABLE COILED IN VAULT.
- 6 PL NEW 24F CABLE THROUGH EXISTING 2" HDPE CONDUIT.
- 7 PL NEW 24F CABLE THROUGH NEW 1 1/4" RISER FLEX CONDUIT.
- 8 EXISTING RACK LOCATION - TERMINATION POINT. LEAVE 30' SLACK IN NEW 24F CABLE FOR SPLICING.



SPLICE / NEW VAULT
SCALE: N.T.S.



TERMINATION RACK
SCALE: N.T.S.

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CHECKED BY: <u>J. GREENWOOD</u>				
REVISIONS				
REV	DESCRIPTION	DATE	BY	APP

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LAKE OSWEGO SCHOOL DISTRICT EXPANSION
SEGMENT 12 - WESTRIDGE ELEMENTARY SCHOOL
MASTER CABLE PLAN

CITY: LAKE OSWEGO - TOWNSHIP 2 SOUTH RANGE 1 EAST SECTION: 17

COUNTY: CLACKAMAS CO., OREGON

PLOT DATE: 2/17/2017

SCALE: AS SHOWN

PROJECT NAME-FILENAME.DWG - TAB_SHEET #
LAKEO-S12-CP00.DWG - CP01_MCP.1

SHEET
MCP.1

Plot Date: 17 Feb 2017, 10:56am By User: Tom
Drawing Name: Z:\CLACKAMAS BROADBAND EXCHANGE\LAKE OSWEGO SCHOOL DISTRICT EXPANSION\CAD\SEGMENT 12\LAKEO-S12-CP00.DWG Layout (If Any): CP01_MCP.1