

NORWOOD PUMP STATION

PROJECT NO. 7056

60% SUBMITTAL
JULY / 2021

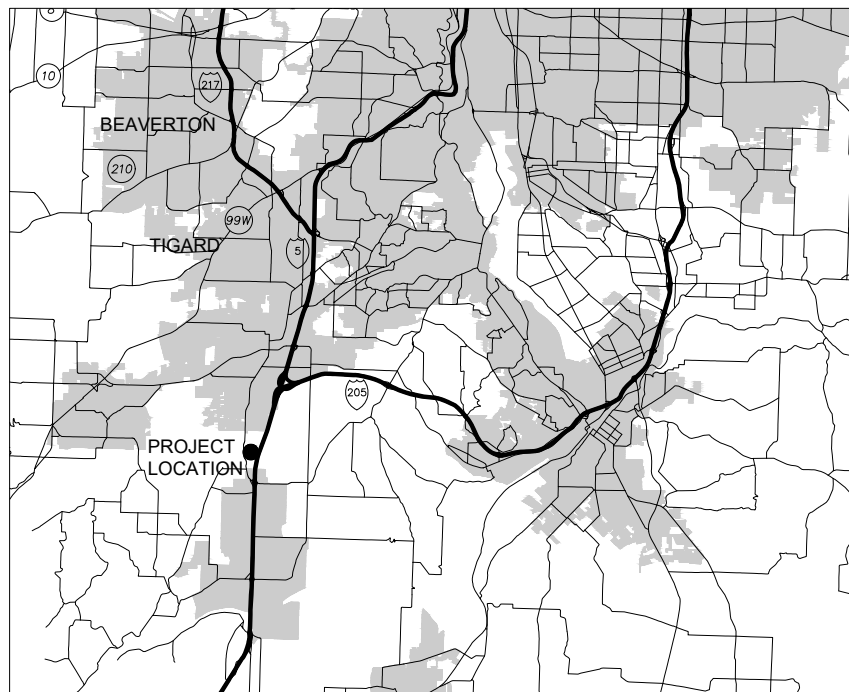
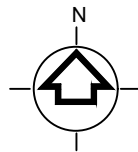
Drawing Index

| SHEET | DWG | DRAWING TITLE |
|-------|------|---|
| 1 | G01 | TITLE, LOCATION, VICINITY AND DRAWINGS INDEX |
| 2 | G02 | LEGEND, ABBREVIATIONS AND GENERAL NOTES |
| 3 | G03 | SYSTEM CURVE AND DESIGN DATA |
| * 4 | G04 | EROSION AND SEDIMENT CONTROL PLAN |
| 5 | G05 | EROSION AND SEDIMENT CONTROL NOTES AND DETAILS |
| 6 | C01 | EXISTING SITE AND DEMO PLAN |
| 7 | C02 | PUMP STATION SITE PLAN |
| 8 | C03 | PUMP STATION GRADING PLAN |
| 9 | C04 | CIVIL DETAILS - 1 |
| 10 | C05 | CIVIL DETAILS - 2 |
| 11 | C06 | CIVIL DETAILS - 3 |
| 12 | C07 | CIVIL DETAILS - 4 |
| 13 | M01 | PUMP STATION MECHANICAL PLAN |
| 14 | M02 | PUMP STATION MECHANICAL SECTIONS |
| 15 | M03 | MECHANICAL DETAILS - 1 |
| 16 | M04 | MECHANICAL DETAILS - 2 |
| 17 | M05 | MECHANICAL DETAILS - 3 |
| 18 | M06 | MECHANICAL DETAILS - 4 |
| 19 | E00 | ELECTRICAL ABBREVIATIONS & SYMBOLS |
| 20 | E01 | ELECTRICAL ONE LINE DIAGRAM |
| 21 | E02 | ELECTRICAL PUMP STATION SITE PLAN |
| 22 | E03 | ELECTRICAL INTERIOR ENCLOSURE - 01 |
| 23 | E04 | ELECTRICAL UTILITY RACK |
| 24 | E05 | ELECTRICAL CONTROL PANEL DETAILS |
| 25 | E06 | ELECTRICAL PUMP SEQUENCE CONTROL PANEL DIAGRAM |
| 26 | E06A | ELECTRICAL PUMP #1 MOTOR STARTER SCHEMATICS |
| 27 | E06B | ELECTRICAL PUMP #2 MOTOR STARTER SCHEMATICS |
| 28 | E07 | ELECTRICAL ENCLOSURE AND RAIN HOOD DETAIL REFERENCE |
| 29 | E08 | ELECTRICAL INTRINSICALLY SAFE EXAMPLE |
| 30 | E09 | ELECTRICAL MECHANICAL DETAILS |
| 31 | E10 | ELECTRICAL DISCONNECT AIR-GAP JUNCTION BOX DETAIL |
| 32 | E11 | ELECTRICAL DETAILS |
| 33 | E12 | ELECTRICAL MISSION RTU INTERCONNECTION DIAGRAM |
| * 34 | L1 | LANDSCAPING PLAN (BY CWS) |
| * 35 | L2 | LANDSCAPING DETAILS (BY CWS) |

* INDICATES DRAWING NOT INCLUDED IN SUBMITTAL

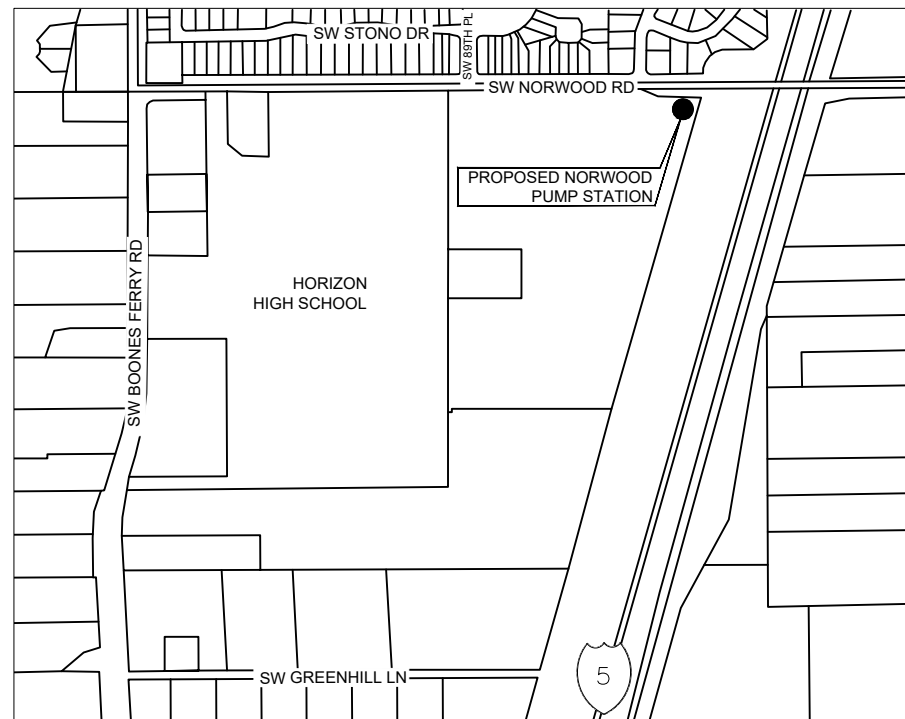
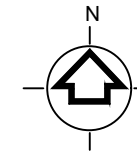
Location Map

(NOT TO SCALE)



Vicinity Map

(NOT TO SCALE)



NOTICE TO EXCAVATORS:

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

POTENTIAL UNDERGROUND FACILITY OWNERS

Dig Safely.

Call the Oregon One-Call Center
DIAL 811 or 1-800-332-2344

EMERGENCY TELEPHONE NUMBERS

| | |
|-----------------------------------|--------------|
| CLEAN WATER SERVICES | 503-681-1520 |
| CITY OF CORNELIUS PUBLIC WORKS | 503-357-3011 |



| | |
|---------|----------------------|
| DRN: - | ORIG DATE: JULY 2021 |
| DSN: - | DWG #: G01 |
| CHK: - | CAD FILE #: G01 |
| APPD: - | SCALE: |

THIS BAR IS ONE INCH
WHEN DRAWING IS FULL
SCALE.

| REV # | DATE | DRN | APPD | DESCRIPTION |
|-------|------|-----|------|-------------|
| | | | | |
| | | | | |
| | | | | |
| | | | | |



2550 SW Hillsboro Highway Hillsboro, Oregon 97123

| |
|------------------------------------|
| PROJ NAME: NORWOOD PUMP STATION |
|------------------------------------|

| |
|---|
| SHEET TITLE: TITLE LOCATION VICINITY AND DRAWING INDEX |
|---|

| |
|----------------------|
| SHEET: 1 OF: 35 |
| PLOT DATE: JULY 2021 |
| PLC #: |
| CWS PROJ #: 7056 |

| |
|----------------------|
| DWG #: G01 |
|----------------------|

7/16/2021 12:45:25 PM - O:\PROJECTS\SEATTLE\47230\200-47230-2\1020\CAD\DWG\FILES\G01 TITLE SHEET.DWG - NORDHOLM, ERIK

GENERAL NOTES

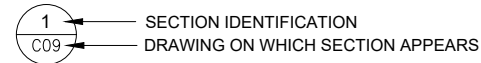
- ALL WORK SHALL BE IN CONFORMANCE WITH CLEAN WATER SERVICES DESIGN AND CONSTRUCTION STANDARDS AND THE OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY "OREGON STANDARDS FOR THE DESIGN AND CONSTRUCTION OF WASTEWATER PUMP STATIONS".
- CONTRACTOR SHALL PROTECT EXISTING MONUMENTS, BENCH MARKS, PROPERTY CORNERS, AND GOVERNMENT MONUMENTS.
- EROSION CONTROL MEASURES ARE REQUIRED OF THIS PROJECT. ALL WORK MUST COMPLY WITH THE APPROVED EROSION CONTROL PLANS FOR THE SITE AND STORM WATER CONSERVATION ACTIVITIES PERMIT FROM CWS.
- CONTRACTOR SHALL OBTAIN ALL PERMITS AND LICENSES PRIOR TO BEGINNING CONSTRUCTION.
- CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE 2019 EDITION OF THE OREGON STRUCTURAL SPECIALTY CODE.

DRAWING REFERENCE

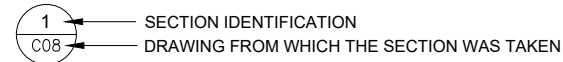
NOTE:
THE SYMBOLS LISTED ON THIS SHEET ARE TYPICAL SYMBOLS THAT MAY OR MAY NOT BE USED IN THIS SET OF PLANS. SPECIAL SYMBOLS WILL BE NOTED ON THE SHEETS THAT THEY APPLY TO.

- DRAWINGS ARE CROSS REFERENCED IN THE FOLLOWING MANNER:

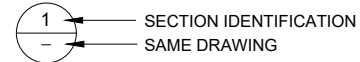
(a) SECTION CUT ON DRAWING C08:



(b) ON DRAWING C09 THE SECTION IS IDENTIFIED AS:



(c) SECTION CUT AND SHOWN ON SAME DRAWING:



- PLANS, DETAILS AND ELEVATIONS ARE CROSS REFERENCED IN A SIMILAR MANNER.
- SECTION REFERENCED IN TEXT, "SEE 5/C06" MEANS SEE SECTION 5 OR DETAIL 5 ON DRAWING NUMBER C06.

SPECIAL INSPECTION

INSPECTION SHALL CONFORM TO SECTION 1705 OF THE 2019 EDITION OF THE OREGON STRUCTURAL SPECIALTY CODE (OSSC) AND OWNER-ELECTED INSPECTION. LABORATORIES FOR MATERIAL TESTING AND/OR AGENCIES FOR TESTING SERVICES SHALL BE SELECTED BY, ENGAGED BY, AND RESPONSIBLE TO THE OWNER / OWNERS REPRESENTATIVE.

THE FOLLOWING ITEMS REQUIRE INSPECTION PER OSSC CHAPTER 17 THESE INSPECTIONS SHALL BE PERFORMED BY A QUALIFIED SPECIAL INSPECTOR.

| ITEM | DESCRIPTION |
|---|---|
| INSPECTION OF REINFORCING STEEL, INCLUDING PLACEMENT | FREQUENCY: PERIODIC REFERENCE: OSSC TABLE 1705.3 |
| INSPECTION OF ANCHORS CAST IN CONCRETE | FREQUENCY: PERIODIC REFERENCE: OSSC TABLE 1705.3 |
| INSPECTION OF ANCHORS POST-INSTALLED IN HARDENED CONCRETE MEMBERS | FREQUENCY: PERIODIC REFERENCE: OSSC TABLE 1705.3 |
| VERIFYING USE OF REQUIRED DESIGN MIX | FREQUENCY: PERIODIC REFERENCE: OSSC TABLE 1705.3 |
| PRIOR TO CONCRETE PLACEMENT, FABRICATE SPECIMENS FOR STRENGTH TESTS, PERFORM SLUMP AND AIR CONTENT TESTS, AND DETERMINE THE TEMPERATURE OF THE CONCRETE | FREQUENCY: CONTINUOUS REFERENCE: OSSC TABLE 1705.3 |
| INSPECTION OF FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS | FREQUENCY: PERIODIC REFERENCE: OSSC TABLE 1705.3 |
| CONCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES | FREQUENCY: CONTINUOUS REFERENCE: OSSC TABLE 1705.3 |
| VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUE | FREQUENCY: PERIODIC REFERENCE: OSSC TABLE 1705.3 |
| INSPECTION OF FORMWORK FOR SHAPE, LOCATION AND DIMENSIONS | FREQUENCY: PERIODIC REFERENCE: OSSC TABLE 1705.3 |
| VERIFY MATERIALS BELOW SHALLOW FOUNDATIONS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY | FREQUENCY: PERIODIC REFERENCE: OSSC TABLE 1705.6 |
| VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL | FREQUENCY: PERIODIC REFERENCE: OSSC TABLE 1705.6 |
| PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS | FREQUENCY: PERIODIC REFERENCE: OSSC TABLE 1705.6 |
| VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESS DURING PLACEMENT AND COMPACTION OF COMPACTED FILL | FREQUENCY: CONTINUOUS REFERENCE: OSSC TABLE 1705.6 |
| PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PROPERLY PREPARED | FREQUENCY: PERIODIC REFERENCE: OSSC TABLE 1705.6 |

ABBREVIATIONS

| | | | |
|------------|--|---------|------------------------------|
| AASHTO | AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS | MAX | MAXIMUM |
| AC | ASPHALTIC CONCRETE | MH | MANHOLE |
| AGG | AGGREGATE | MIN | MINIMUM |
| ASTM | AMERICAN SOCIETY FOR TESTING AND MATERIALS | N | NORTH |
| ATS | AUTOMATIC TRANSFER SWITCH | NIC | NOT IN CONTRACT |
| BC | BOTTOM OF CURB | OD | OUTSIDE DIAMETER |
| CB | CATCHBASIN | PNT | POINT |
| CL OR t | CENTERLINE | PL | PROPERTY LINE / PLATE |
| CLR | CLEAR | PSI | POUNDS PER SQUARE INCH |
| CONC | CONCRETE | PUE | PUBLIC UTILITY EASEMENT |
| CWS | CLEAN WATER SERVICES | PVC | POLYVINYL CHLORIDE |
| D | DRAIN | R | RADIUS / RADII |
| DI | DUCTILE IRON | ROW | RIGHT OF WAY |
| DIA | DIAMETER | RT | RIGHT |
| DWG | DRAWING | S | SOUTH / SLOPE |
| E | EAST | SCH | SCHEDULE |
| EL OR ELEV | ELEVATION | SD | STORM DRAIN |
| EOP | EDGE OF PAVEMENT | SQ. | SQUARE |
| EXIST | EXISTING | SST, SS | STAINLESS STEEL |
| FC | FINAL CURE | ST | STREET |
| FH | FIRE HYDRANT | STA | STATION |
| FM | FORCE MAIN | T | TELEPHONE |
| GLV | GALVANIZED | TC | TOP OF CURB |
| IE | INVERT ELEVATION | TOC | TOP OF CONCRETE / TOP CENTER |
| L | LENGTH | TYP | TYPICAL |
| LT | LEFT | V | VENT |
| LF | LINEAL FEET | W/ | WITH |
| | | W | WATER / WEST |

LEGEND

EXISTING

| | | |
|-----|------|----------------------------|
| --- | SAN | SANITARY SEWER |
| --- | STM | STORM DRAIN |
| --- | WAT | WATER MAIN |
| --- | GAS | NATURAL GAS |
| --- | PWR | UNDERGROUND POWER |
| --- | OHU | OVERHEAD UTILITY |
| --- | COM | COMMUNICATION |
| --- | | FENCE |
| --- | | ROW / PROPERTY LINE |
| --- | 3.31 | CONTOUR |
| ○ | | MANHOLE |
| ⊗ | | VALVE |
| ⊙ | | FIRE HYDRANT |
| ⊖ | | UTILITY POLE |
| ★ | 24" | CONIFEROUS TREE & DIAMETER |
| ● | 16" | DECIDUOUS TREE & DIAMETER |

PROPOSED

| | | |
|-----|----|------------------------|
| --- | | GRAVITY SANITARY SEWER |
| --- | FM | FORCE MAIN |
| --- | SD | STORM DRAIN |
| --- | W | WATER LINE |
| --- | X | FENCE |
| --- | | CONCRETE CURB |
| ○ | | MANHOLE |
| ⊗ | | PLUG VALVE |
| ⊗ | | GATE VALVE |
| N | | CHECK VALVE |
| ■ | | CATCH BASIN |
| ⊙ | | BOLLARD |
| ★ | | YARD LIGHT |
| ★ | | REMOVE TREE |
| ■ | | AC SURFACING |

7/16/2021 2:55:20 PM - C:\PROJECTS\SEATTLE\47238\200-47238-2\1002\CAD\SHEETFILES\G02 LEGEND ABBREV & NOTES.DWG - NORDHOLM, ERIK



| | |
|---------|----------------------|
| DRN: -- | ORIG DATE: JULY 2021 |
| DSN: -- | DWG #: G02 |
| CHK: | CAD FILE #: G02 |
| APPD: | SCALE: |

THIS BAR IS ONE INCH WHEN DRAWING IS FULL SCALE.

| REV # | DATE | DRN | APPD | DESCRIPTION |
|-------|------|-----|------|-------------|
| | | | | |

2550 SW Hillsboro Highway Hillsboro, Oregon 97123

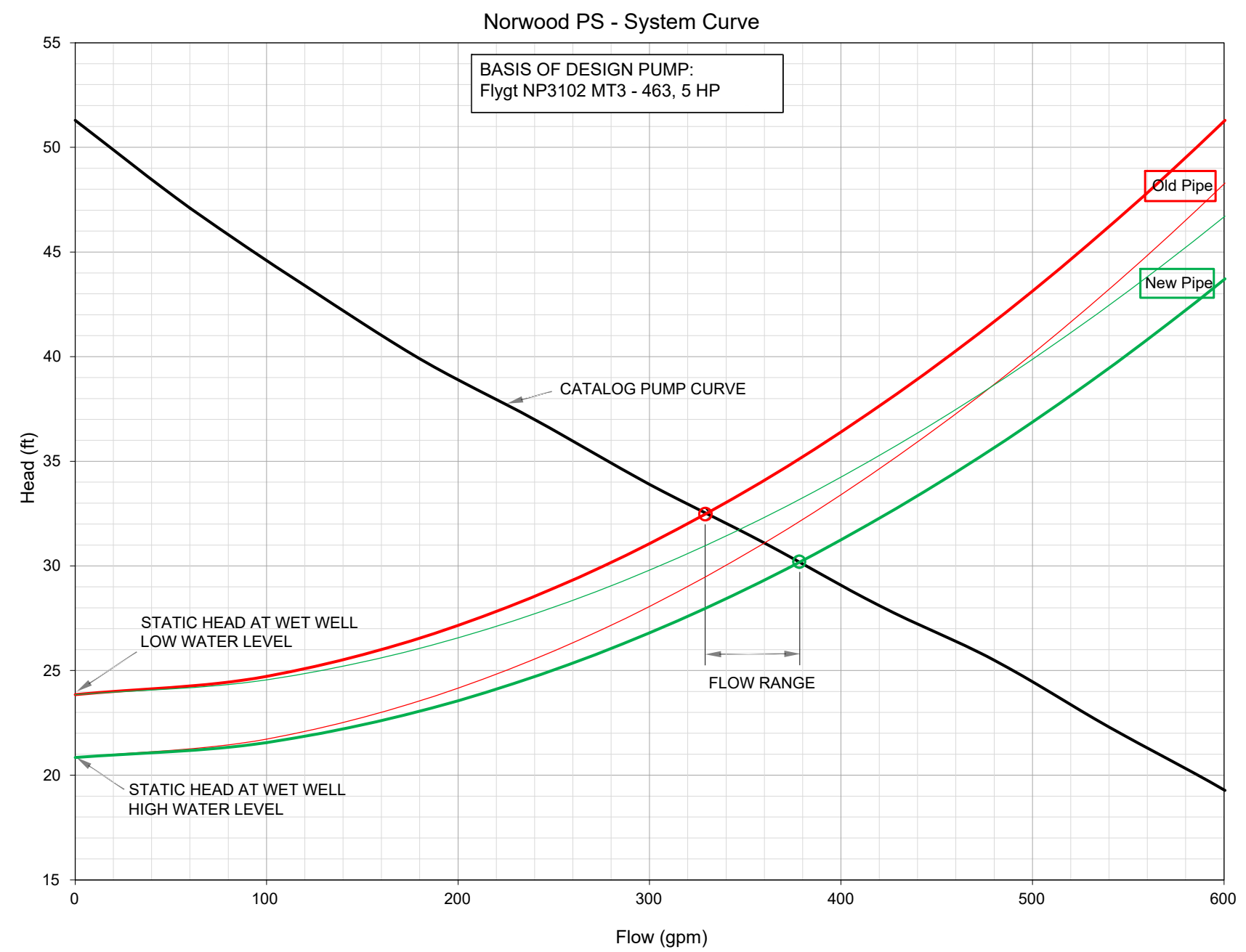
PROJ NAME:
NORWOOD PUMP STATION

SHEET TITLE:
LEGEND, ABBREVIATIONS AND GENERAL NOTES

SHEET: 2 OF: 35
PLOT DATE: JULY 2021
PLC #:
CWS PROJ #: 7056

DWG #:
G02

7/16/2021 3:07:32 PM - C:\PROJECTS\SEATTLE\47238\200-47238-21002\CAD\SHEETFILES\G03 - SYSTEM CURVE.DWG - NORDHOLM, ERIK



| DESIGN DATA | |
|--|---|
| BASIN CHARACTERISTICS | |
| LOCATION | ADDRESS NOT ISSUED |
| SERVICE AREA | 76 ACRES |
| EQUIVALENT DWELLING UNITS (EDU) | 567 (AT BUILDOUT) |
| SERVICE POPULATION | 1,332 (AT BUILDOUT) |
| AVERAGE DAILY FLOW (1-YEAR) | 8 GPM |
| AVERAGE DAILY FLOW (BUILDOUT) | 67 GPM |
| PEAK HOURLY FLOW - 25 YR DESIGN | 287 GPM |
| PEAK HOURLY FLOW - BUILD-OUT | 412 GPM |
| PUMP STATION | |
| TYPE OF STATION | DUPLEX SUBMERSIBLE |
| CAPACITY (PER PUMP) | 335 GPM @ 33 FEET TDH (STATIC HEAD= 24 FT) |
| NUMBER OF PUMPS | 2 |
| BASIS OF DESIGN | FLYGT MODEL NP 3102 MT3-Adaptive 463 |
| HORSE POWER, HP | 5 HP EACH |
| MOTOR DATA | 460 VOLT, 3 PH, 60 HZ |
| FIRM CAPACITY OF PUMP STATION | 335 GPM |
| MAXIMUM PUMP STARTS PER HOUR | 16.3 (WITH ONE PUMP OUT OF SERVICE) |
| WET WELL VOLUME | 1,130 GALLONS (PUMPS OFF TO LEAD PUMP ON) |
| LEVEL CONTROL TYPE | SUBMERGED PRESSURE TRANSDUCER & BACK UP FLOATS |
| OVERFLOW POINT | WET WELL; ELEV = 330.0 |
| OVERFLOW LOCATION | DRAINAGE SWALE SOUTH OF PUMP STATION |
| AVERAGE TIME OF OVERFLOW | 90 MIN AT 67 GPM AVERAGE INFLUENT FLOW |
| TELEMETRY | MISSION RTU |
| TRANSFER SWITCH | AUTOMATIC |
| STANDBY POWER TYPE | 50 kW STATIONARY DIESEL-POWERED STANDBY GENERATOR |
| FUEL TANK CAPACITY | 24 HRS |
| EPA RELIABILITY CLASS | 1 |
| FLOW METER | 8" ELECTROMAGNETIC |
| CONTROL | CONSTANT SPEED |
| BYPASS MANHOLE | |
| DIAMETER (INSIDE) | 4 FEET |
| TOP ELEV. | 333.00 |
| SEWER INVERT IN ELEV. | 317.06 |
| SEWER OUTLET IN ELEV | 316.86 |
| FORCE MAIN | |
| TYPE AND LENGTH | 290 FEET 6-INCH PVC C-900, DR 25 OR HDPE DR21 |
| FORCEMAIN VELOCITY | 3.4 - 3.9 FEET PER SECOND |
| PROFILE | CONTINUOUSLY ASCENDING |
| AIR RELEASE VALVE | 1 EA - 2" COMBINATION AIR VALVES LOCATED AT PUMP STATION SITE |
| DISCHARGE LOCATION | |
| AVERAGE DETENTION TIME | SW NORWOOD RD AT SW VERMILLION DR |
| SULFIDE CONTROL SYSTEM | 74 MIN @ 8 GPM ADF |
| A PROTETIVE COATING SHALL BE PROVIDED IN THE FORCE MAIN DISCHARGE MANHOLE. STRONG SEAL QSR OR EQUAL. | |
| OPERATING LEVELS - WET WELL | |
| DIAMETER (INSIDE) | 8.0 FEET |
| OPERATING ELEVATIONS | |
| TOP OF WET WELL | 333.00 |
| OVERFLOW EL | 333.00 |
| OVERFLOW ALARM | 331.50 (FLOAT) |
| HIGH WATER ALARM | 317.50 (FLOAT CONTROL BACKUP) |
| INFLUENT SEWER INVERT | 316.82 |
| LAG PUMP ON | 316.82 (PRESSURE TRANSDUCER) 10.0 FT |
| LEAD PUMP ON | 316.32 (PRESSURE TRANSDUCER) 9.5 FT |
| BOTH PUMPS OFF | 313.32 (PRESSURE TRANSDUCER) 4.5 FT |
| WET WELL FLOOR ELEV | 310.32 |
| BACKUP LEVEL CONTROL (ALARMS) | |
| ALARMS | HIGH WATER FLOAT SWITCH BEACON LIGHT AT PUMP STATION & REMOTE TERMINAL UNIT |
| LANDSCAPING | |
| LANDSCAPE AREA | TBD |
| IRRIGATION SYSTEM | TBD |
| CONTROL VALVES | TBD |
| BACKFLOW DEVICE | 1-IN REDUCED PRESSURE BACKFLOW PREVENTER |



| | |
|----------|----------------------|
| DRN: -- | ORIG DATE: JULY 2021 |
| DSN: -- | DWG #: G03 |
| CHK: -- | CAD FILE #: G03 |
| APPD: -- | SCALE: |

THIS BAR IS ONE INCH WHEN DRAWING IS FULL SCALE.

| REV # | DATE | DRN | APPD | DESCRIPTION |
|-------|------|-----|------|-------------|
| | | | | |

2550 SW Hillsboro Highway
Hillsboro, Oregon 97123

PROJ NAME:
NORWOOD PUMP STATION

SHEET TITLE:
SYSTEM CURVE AND DESIGN DATA

SHEET: 3 OF 35
PLOT DATE: JULY 2021
PLC #:
CWS PROJ #: 7056

DWG #:
G03

EROSION CONTROL NOTES

1. WHEN RAINFALL AND RUNOFF OCCURS DAILY INSPECTIONS OF THE EROSION AND SEDIMENT CONTROLS AND DISCHARGE OUTFALLS MUST BE PROVIDED BY SOME ONE KNOWLEDGEABLE AND EXPERIENCED IN THE PRINCIPLES, PRACTICES, INSTALLATION, AND MAINTENANCE OF EROSION AND SEDIMENT CONTROLS WHO WORKS FOR THE PERMITTEE.
2. CONSTRUCTION ACTIVITIES MUST AVOID OR MINIMIZE EXCAVATION AND CREATION OF BARE GROUND FROM OCTOBER 1 THROUGH MAY 31 EACH YEAR.
3. DURING WET WEATHER PERIOD, TEMPORARY STABILIZATION OF THE SITE MUST OCCUR AT THE END OF EACH WORK DAY.
4. SEDIMENT CONTROLS MUST BE INSTALLED AND MAINTAINED ON ALL DOWN GRADIENT SIDES OF THE CONSTRUCTION SITE AT ALL TIMES DURING CONSTRUCTION. THEY MUST REMAIN IN PLACE UNTIL PERMANENT VEGETATION OR OTHER PERMANENT COVERING OF EXPOSED SOIL IS ESTABLISHED.
5. ALL ACTIVE INLETS MUST HAVE SEDIMENT CONTROLS INSTALLED AND MAINTAINED AT ALL TIMES DURING CONSTRUCTION. UNLESS OTHERWISE APPROVED, A SURFACE MOUNTED AND ATTACHABLE, U-SHAPED FILTER BAG IS REQUIRED FOR ALL CURB INLET CATCH BASINS.
6. SIGNIFICANT AMOUNTS OF SEDIMENT WHICH LEAVES THE SITE MUST BE CLEANED UP WITHIN 24 HOURS AND PLACED BACK ON THE SITE AND STABILIZED OR PROPERLY DISPOSED. THE CAUSE OF THE SEDIMENT RELEASE MUST BE FOUND AND PREVENTED FROM CAUSING A RECURRENCE OF THE DISCHARGE WITHIN THE SAME 24 HOURS. ANY IN-STREAM CLEAN UP OF SEDIMENT SHALL BE PERFORMED ACCORDING TO THE OREGON DEPARTMENT OF STATE LANDS REQUIRED TIME FRAME.
7. SEDIMENT MUST NOT BE INTENTIONALLY WASHED INTO STORM SEWERS, DRAINAGE WAYS, OR WATER BODIES.
8. SEDIMENT MUST BE REMOVED FROM BEHIND ALL SEDIMENT CONTROL MEASURES WHEN IT HAS REACHED A HEIGHT OF 1/3RD THE BARRIER HEIGHT, AND PRIOR TO THE CONTROL MEASURES REMOVAL.
9. CLEANING OF ALL STRUCTURES WITH SUMPS MUST OCCUR WHEN THE SEDIMENT RETENTION CAPACITY HAS BEEN REDUCED BY 50% AND AT COMPLETION OF PROJECT.
10. ANY USE OF TOXIC OR OTHER HAZARDOUS MATERIALS MUST INCLUDE PROPER STORAGE, APPLICATION, AND DISPOSAL.
11. THE PERMITTEE MUST PROPERLY MANAGE HAZARDOUS WASTES, USED OILS, CONTAMINATED SOILS, CONCRETE WASTE, SANITARY WASTE, LIQUID WASTE, OR OTHER TOXIC SUBSTANCES DISCOVERED OR GENERATED DURING CONSTRUCTION.
12. THE APPLICATION RATE OF FERTILIZERS USED TO REESTABLISH VEGETATION MUST FOLLOW MANUFACTURER'S RECOMMENDATIONS. NUTRIENT RELEASES FROM FERTILIZERS TO SURFACE WATERS MUST BE MINIMIZED. TIME RELEASE FERTILIZERS SHOULD BE USED AND CARE SHOULD BE MADE IN APPLICATION OF FERTILIZERS WITHIN ANY WATER WAY RIPARIAN ZONE.
13. OWNER OR DESIGNATED PERSON SHALL BE RESPONSIBLE FOR PROPER INSTALLATION AND MAINTENANCE OF ALL EROSION AND SEDIMENT CONTROL MEASURES. IN ACCORDANCE WITH CURRENT CLEAN WATER SERVICES STANDARDS AND STATE, AND FEDERAL REGULATIONS.
14. PRIOR TO ANY LAND DISTURBING ACTIVITIES, THE BOUNDARIES OF THE CLEARING LIMITS, VEGETATED BUFFERS, AND ANY SENSITIVE AREAS SHOWN ON THIS PLAN SHALL BE CLEARLY DELINEATED IN THE FIELD. UNLESS OTHERWISE APPROVED, NO DISTURBANCE IS PERMITTED BEYOND THE CLEARING LIMITS. THE OWNER/PERMITTEE MUST MAINTAIN THE DELINEATION FOR THE DURATION OF THE PROJECT. NOTE: VEGETATED CORRIDORS TO BE DELINEATED WITH ORANGE CONSTRUCTION FENCE OR APPROVED EQUAL.
15. PRIOR TO ANY LAND DISTURBING ACTIVITIES, THE BMPS THAT MUST BE INSTALLED ARE GRAVEL CONSTRUCTION ENTRANCE, PERIMETER SEDIMENT CONTROL, AND INLET PROTECTION. THESE BMPS MUST BE MAINTAINED FOR THE DURATION OF THE PROJECT.
16. IF VEGETATIVE SEED MIXES ARE SPECIFIED, SEEDING MUST TAKE PLACE NO LATER THAN SEPTEMBER 1ST; THE TYPE AND PERCENTAGES OF SEED IN THE MIX ARE AS IDENTIFIED ON THE PLANS OR AS SPECIFIED BY THE DESIGN ENGINEER.
17. WATER-TIGHT TRUCKS MUST BE USED TO TRANSPORT SATURATED SOILS FROM THE CONSTRUCTION SITE. AN APPROVED EQUIVALENT IS TO DRAIN THE SOIL ON SITE AT A DESIGNATED LOCATION USING APPROPRIATE BMPS; SOIL MUST BE DRAINED SUFFICIENTLY FOR MINIMAL SPILLAGE.
18. ALL PUMPING OF SEDIMENT LADEN WATER MUST BE DISCHARGED OVER AN UNDISTURBED, PREFERABLY VEGETATED AREA, AND THROUGH A SEDIMENT CONTROL BMP (I.E. FILTER BAG).
19. THE ESC PLAN MUST BE KEPT ONSITE. ALL MEASURES SHOWN ON THE PLAN MUST BE INSTALLED PROPERLY TO ENSURE THAT SEDIMENT LADEN WATER DOES NOT ENTER A SURFACE WATER SYSTEM, ROADWAY, OR OTHER PROPERTIES.
20. THE ESC MEASURES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE MEASURES SHALL BE UPGRADED AS NEEDED TO MAINTAIN COMPLIANCE WITH ALL REGULATIONS.
21. WRITTEN ESC LOGS ARE SUGGESTED TO BE MAINTAINED ONSITE AND AVAILABLE TO DISTRICT INSPECTORS UPON REQUEST.
22. IN AREAS SUBJECT TO WIND EROSION, APPROPRIATE BMPS MUST BE USED WHICH MAY INCLUDE THE APPLICATION OF FINE WATER SPRAYING, PLASTIC SHEETING, MULCHING, OR OTHER APPROVED MEASURES.
23. ALL EXPOSED SOILS MUST BE COVERED DURING WET WEATHER PERIOD.

7/16/2021 1:06:27 PM - C:\PROJECTS\SEATTLE\47238\200-47238-2\100\CAD\SHEETFILES\G05 ESC NOTES AND DETAILS.DWG - NORDHOLM, ERIK



| | |
|--------|----------------------|
| DRN: — | ORIG DATE: JULY 2021 |
| DSN: — | DWG #: G05 |
| CHK: | CAD FILE #: G05 |
| APPD: | SCALE: |

THIS BAR IS ONE INCH WHEN DRAWING IS FULL SCALE.

| REV # | DATE | DRN | APPD | DESCRIPTION |
|-------|------|-----|------|-------------|
| | | | | |

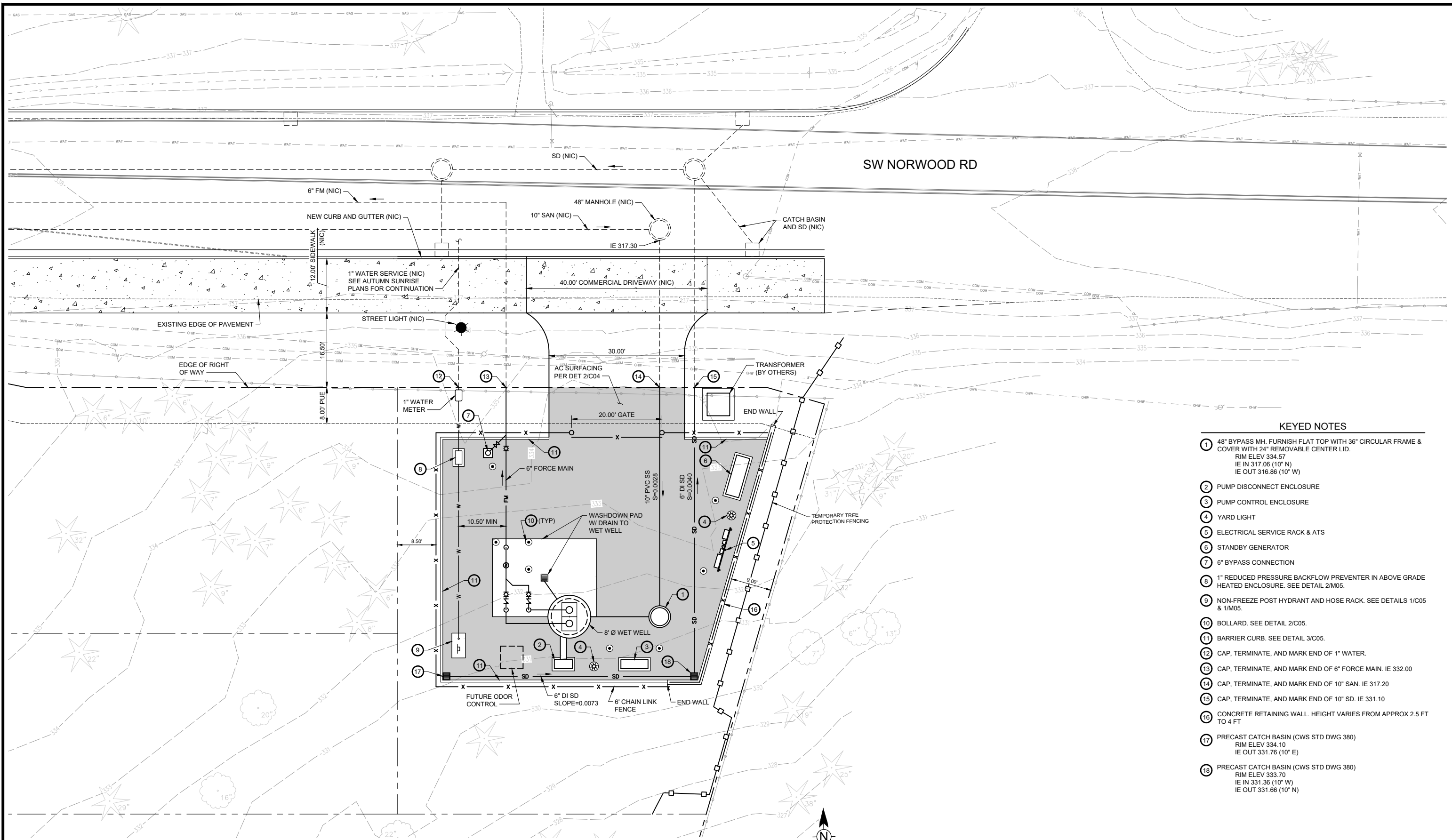
2550 SW Hillsboro Highway Hillsboro, Oregon 97123

PROJ NAME:
NORWOOD PUMP STATION

SHEET TITLE:
EROSION AND SEDIMENT CONTROL NOTES AND DETAILS

SHEET: 5 OF: 35
PLOT DATE: JULY 2021
PLC #:
CWS PROJ #: 7056

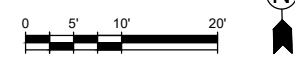
DWG #:
G05



KEYED NOTES

- ① 48" BYPASS MH. FURNISH FLAT TOP WITH 36" CIRCULAR FRAME & COVER WITH 24" REMOVABLE CENTER LID.
RIM ELEV 334.57
IE IN 317.06 (10" N)
IE OUT 316.86 (10" W)
- ② PUMP DISCONNECT ENCLOSURE
- ③ PUMP CONTROL ENCLOSURE
- ④ YARD LIGHT
- ⑤ ELECTRICAL SERVICE RACK & ATS
- ⑥ STANDBY GENERATOR
- ⑦ 6" BYPASS CONNECTION
- ⑧ 1" REDUCED PRESSURE BACKFLOW PREVENTER IN ABOVE GRADE HEATED ENCLOSURE. SEE DETAIL 2/M05.
- ⑨ NON-FREEZE POST HYDRANT AND HOSE RACK. SEE DETAILS 1/C05 & 1/M05.
- ⑩ BOLLARD. SEE DETAIL 2/C05.
- ⑪ BARRIER CURB. SEE DETAIL 3/C05.
- ⑫ CAP, TERMINATE, AND MARK END OF 1" WATER.
- ⑬ CAP, TERMINATE, AND MARK END OF 6" FORCE MAIN. IE 332.00
- ⑭ CAP, TERMINATE, AND MARK END OF 10" SAN. IE 317.20
- ⑮ CAP, TERMINATE, AND MARK END OF 10" SD. IE 331.10
- ⑯ CONCRETE RETAINING WALL. HEIGHT VARIES FROM APPROX 2.5 FT TO 4 FT
- ⑰ PRECAST CATCH BASIN (CWS STD DWG 380)
RIM ELEV 334.10
IE OUT 331.76 (10" E)
- ⑱ PRECAST CATCH BASIN (CWS STD DWG 380)
RIM ELEV 333.70
IE IN 331.36 (10" W)
IE OUT 331.66 (10" N)

1 SITE PLAN
SCALE: 1" = 10'



7/16/2021 3:19:56 PM - C:\PROJECTS\SEATTLE\47238\200-47238-21002\CAD\SHEETFILES\C-02.PS-SITE-PLAN.DWG - NORDHOLM, ENK



| | |
|--------|----------------------|
| DRN: - | ORIG DATE: JULY 2021 |
| DSN: - | DWG #: C02 |
| CHK: | CAD FILE #: C02 |
| APPD: | SCALE: |

THIS BAR IS ONE INCH WHEN DRAWING IS FULL SCALE.

| REV # | DATE | DRN | APPD | DESCRIPTION |
|-------|------|-----|------|-------------|
| | | | | |

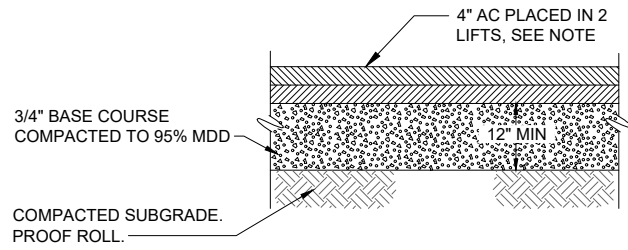
2550 SW Hillsboro Highway Hillsboro, Oregon 97123

PROJ NAME:
NORWOOD PUMP STATION

SHEET TITLE:
PUMP STATION SITE PLAN

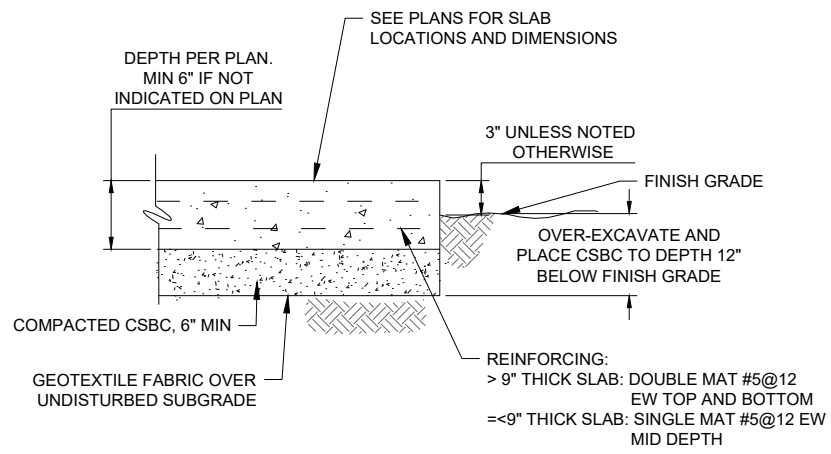
SHEET: 7 OF: 35
PLOT DATE: JULY 2021
PLC #:
CWS PROJ #: 7056

DWG #:
C02



NOTE:
1. RESURFACING TO BE LEVEL 3, 1/2" DENSE GRADE HMAC COMPACTED TO 91% OF MAX. DENSITY (RICE).

2 AC PAVING DETAIL
SCALE: NONE



NOTE: SEE SITE PLAN FOR PAD DIMENSIONS

3 TYPICAL EQUIPMENT PAD DETAIL
SCALE: NONE

DRAWING NO. 740

CHAIN LINK FENCE AND GATE

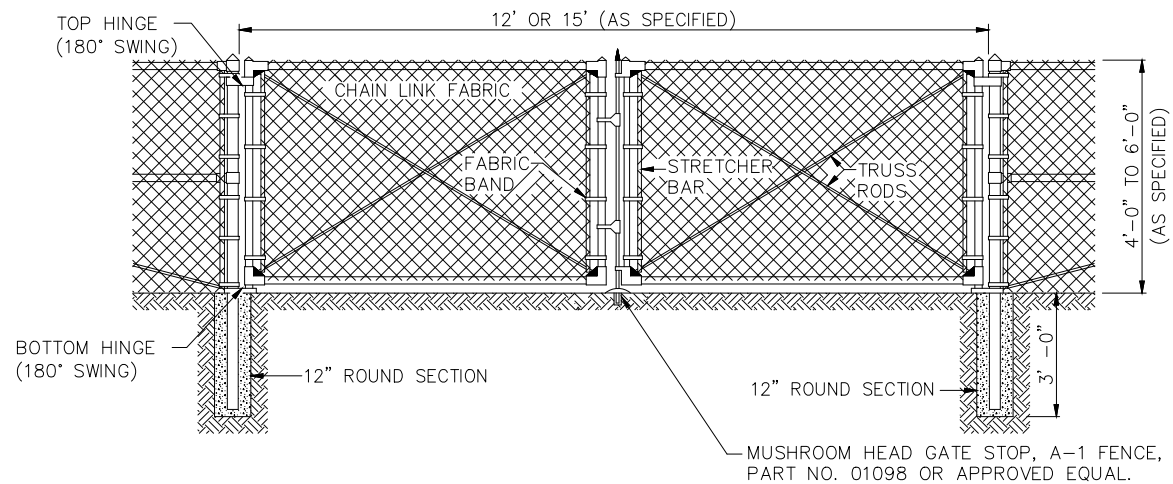
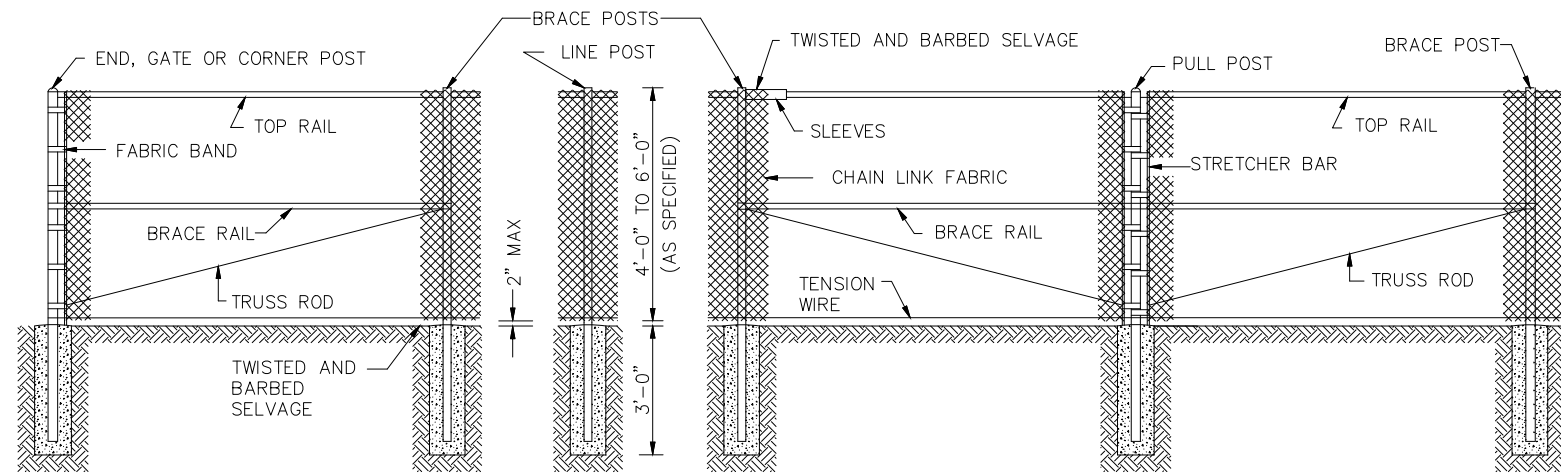
REVISED 12-06



| MEMBER | NOMINAL DIA (IN) | MATERIAL | |
|-------------------|-------------------|----------------------------|------------------|
| BRACE RAIL | 1.660 | GALV TUBULAR STL | |
| GATE FRAME | 2.00 | GALV TUBULAR STL | |
| LINE POSTS | 2.375 | GALV TUBULAR STL | |
| END & CORNER POST | 2.875 | GALV TUBULAR STL | |
| CHAIN LINK FABRIC | | 9 GA. W/BLACK PVC COATING. | |
| | GATE OPENING (ft) | NOMINAL DIA (IN) | MATERIAL |
| GATE POST | 12' OR 15' | 4 | GALV TUBULAR STL |

NOTES:

1. ALL FITTINGS, FASTENERS, & AND FABRIC TIES SHALL BE HOT DIP GALV.
2. CONC SHALL BE MIN 2500 PSI @ 28 DAYS.
3. PROVIDE BRACE RAIL BETWEEN END POSTS AND LINE POSTS. LENGTHS AS REQ'D.
4. PROVIDE GATE STOPS AND DROP RECEIVERS AS SHOWN.
5. PROVIDE EXTENSION ARMS ON LINE, END AND CORNER POSTS & GATE POSTS AS REQ'D.
6. PROVIDE SIGHT OBSCURING SLATS WITH ALL WASTEWATER PUMP STATIONS.
7. CENTER BRACE RAIL NOT REQUIRED WITH FENCE HEIGHT OF 5' OR LESS.
8. ALL POSTS AND RAILS TO MATCH FENCE COLOR.



4 CHAIN LINK FENCE AND GATE DETAIL
SCALE: NONE

7/16/2021 3:43:31 PM - C:\PROJECTS\SEATTLE\47238\200-47238-21002\CAD\SHEETFILES\C04\CIVIL DETAILS - 1.DWG - NORDHOLM, ERIC



| | |
|---------|----------------------|
| DRN: — | ORIG DATE: JULY 2021 |
| DSN: — | DWG #: C04 |
| CHK: — | CAD FILE #: C04 |
| APPD: — | SCALE: — |

THIS BAR IS ONE INCH WHEN DRAWING IS FULL SCALE.

| REV # | DATE | DRN | APPD | DESCRIPTION |
|-------|------|-----|------|-------------|
| | | | | |

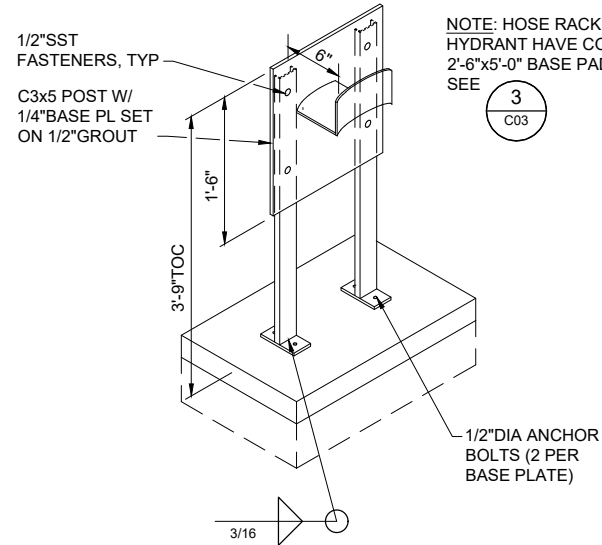
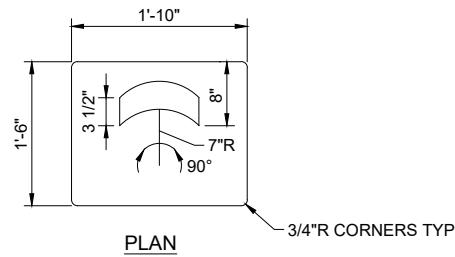


PROJ NAME: NORWOOD PUMP STATION

SHEET TITLE: CIVIL DETAILS - 1

SHEET: 9 OF: 35
PLOT DATE: JULY 2021
PLC #:
CWS PROJ #: 7056

DWG #: C04

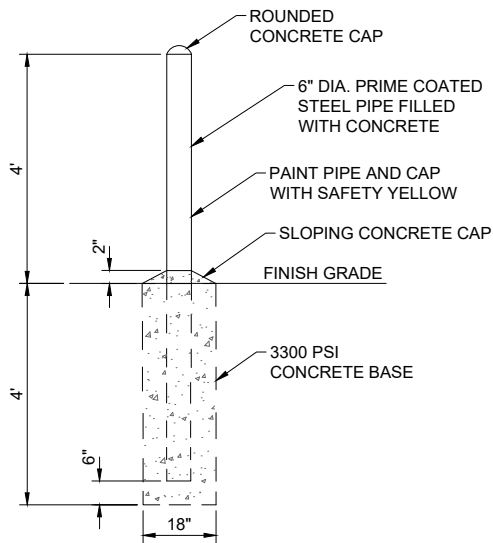


NOTE: HOSE RACK AND YARD HYDRANT HAVE COMMON 2'-6"x5'-0" BASE PAD. SEE 3 C03

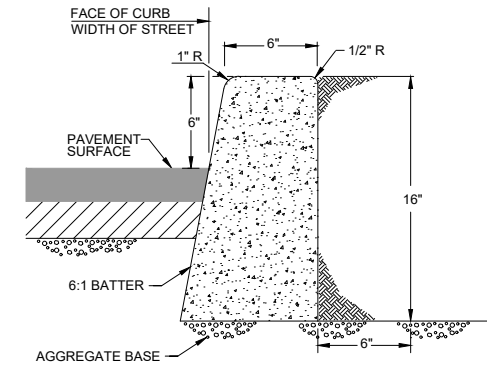
NOTES:

- HOSE RACK SHALL BE WELDED CONSTRUCTION. MATERIAL SHALL BE 3/16" THICK 6061 ALUMINUM.
- FASTENERS SHALL BE STAINLESS STEEL.

1 POST MOUNTED HOSE RACK
SCALE: NONE



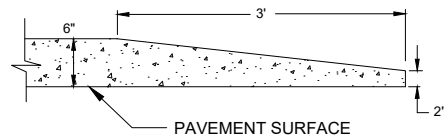
2 BOLLARD DETAIL
SCALE: NONE



NOTES:

- CONCRETE TO HAVE A COMPRESSIVE STRENGTH (FC) OF 3300 PSI AFTER 28 DAYS.
- CONTRACTION JOINTS.
 - SPACE NOT MORE THAN 10 FEET
 - DEPTH OF JOINT SHALL BE AT LEAST 1/3 DEPTH OF CONCRETE
 - CENTER WEEPHOLES WITH CONTRACTION JOINTS
- USE 1-1/2"-0" OR 3/4"-0" AGGREGATE BASE COMPACTED TO 100% OF AASHTO T-99. PLACE TO SUBGRADE, STREET STRUCTURE, OR 10" DEPTH, WHICHEVER IS GREATER. EXTEND AT LEAST 6" BEHIND CURB.

3 BARRIER CURB DETAIL
SCALE: NONE



NOTE: CURB BELOW PAVEMENT SURFACE NOT SHOWN.

4 BARRIER CURB END DETAIL
SCALE: NONE

7/16/2021 3:46:24 PM - O:\PROJECTS\SEATTLE\47238\200-47238-2\100\CAD\SHEETFILES\C05 CIVIL DETAILS - 2.DWG - NORDHOLM, ERIK



| | |
|---------|----------------------|
| DRN: — | ORIG DATE: JULY 2021 |
| DSN: — | DWG #: C05 |
| CHK: — | CAD FILE #: C05 |
| APPD: — | SCALE: — |

THIS BAR IS ONE INCH WHEN DRAWING IS FULL SCALE.

| REV # | DATE | DRN | APPD | DESCRIPTION |
|-------|------|-----|------|-------------|
| | | | | |



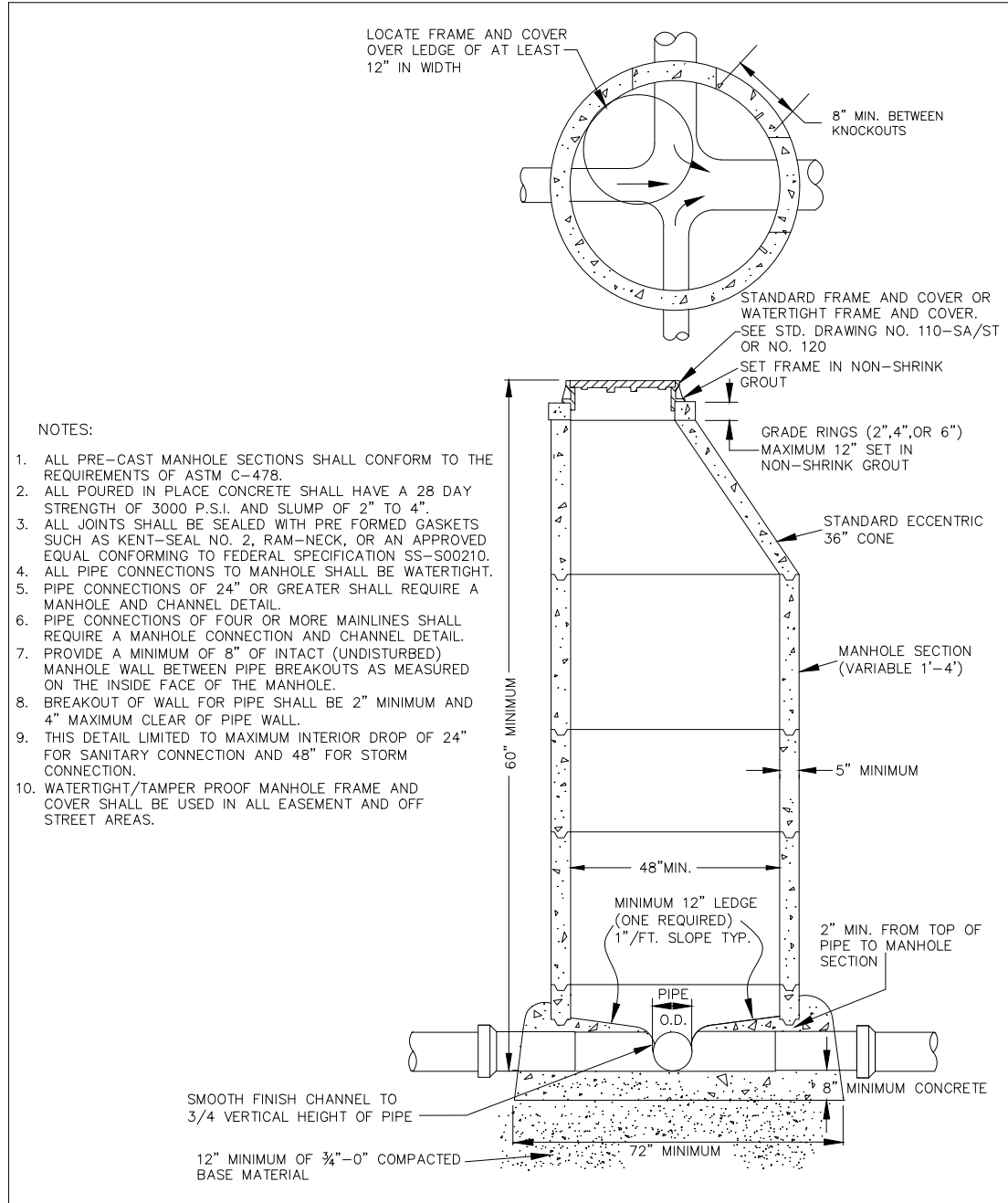
PROJ NAME: NORWOOD PUMP STATION

SHEET TITLE: CIVIL DETAILS - 2

| |
|----------------------|
| SHEET: 10 OF: 35 |
| PLOT DATE: JULY 2021 |
| PLC #: |
| CWS PROJ #: 7056 |

DWG #: C05

7/16/2021 3:50:32 PM - O:\PROJECTS\SEATTLE\47238\200-47238-2\CAD\SHEETFILES\C06\CIVIL DETAILS - 3.DWG - NORDHOLM, ERIK

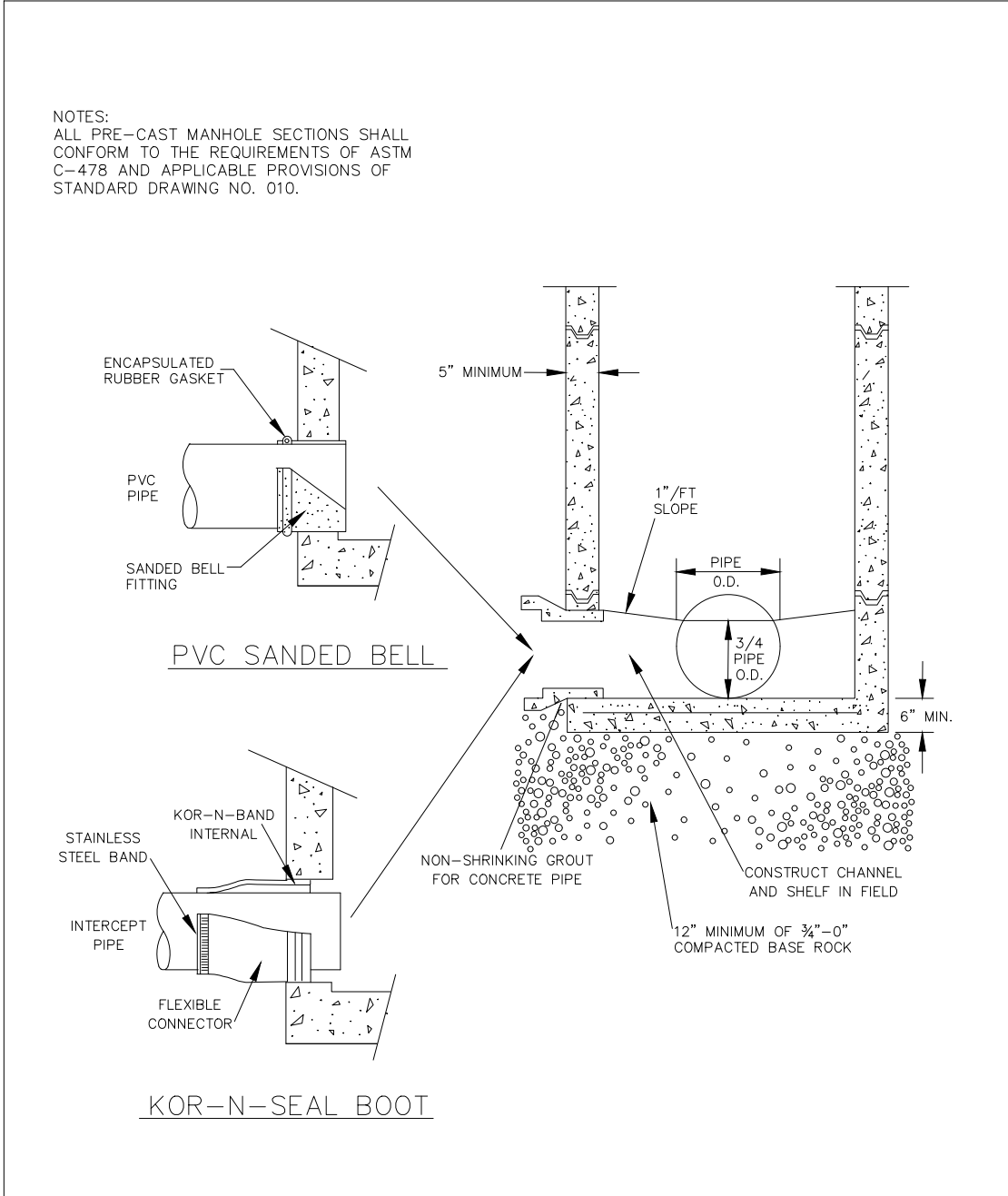


- NOTES:
1. ALL PRE-CAST MANHOLE SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-478.
 2. ALL POURED IN PLACE CONCRETE SHALL HAVE A 28 DAY STRENGTH OF 3000 P.S.I. AND SLUMP OF 2" TO 4".
 3. ALL JOINTS SHALL BE SEALED WITH PRE FORMED GASKETS SUCH AS KENT-SEAL NO. 2, RAM-NECK, OR AN APPROVED EQUAL CONFORMING TO FEDERAL SPECIFICATION SS-S00210.
 4. ALL PIPE CONNECTIONS TO MANHOLE SHALL BE WATERTIGHT.
 5. PIPE CONNECTIONS OF 24" OR GREATER SHALL REQUIRE A MANHOLE AND CHANNEL DETAIL.
 6. PIPE CONNECTIONS OF FOUR OR MORE MAINLINES SHALL REQUIRE A MANHOLE CONNECTION AND CHANNEL DETAIL.
 7. PROVIDE A MINIMUM OF 8" OF INTACT (UNDISTURBED) MANHOLE WALL BETWEEN PIPE BREAKOUTS AS MEASURED ON THE INSIDE FACE OF THE MANHOLE.
 8. BREAKOUT OF WALL FOR PIPE SHALL BE 2" MINIMUM AND 4" MAXIMUM CLEAR OF PIPE WALL.
 9. THIS DETAIL LIMITED TO MAXIMUM INTERIOR DROP OF 24" FOR SANITARY CONNECTION AND 48" FOR STORM CONNECTION.
 10. WATERTIGHT/TAMPER PROOF MANHOLE FRAME AND COVER SHALL BE USED IN ALL EASEMENT AND OFF STREET AREAS.

STANDARD MANHOLE

DRAWING NO. 010
REVISED 02-03

1 STANDARD MANHOLE
SCALE: NONE



- NOTES:
- ALL PRE-CAST MANHOLE SECTIONS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-478 AND APPLICABLE PROVISIONS OF STANDARD DRAWING NO. 010.

PRECAST CONCRETE MANHOLE BASE

DRAWING NO. 020
REVISED 05-07

2 PRECAST CONCRETE MANHOLE BASE
SCALE: NONE



| | |
|---------|----------------------|
| DRN: — | ORIG DATE: JULY 2021 |
| DSN: — | DWG #: C06 |
| CHK: — | CAD FILE #: C06 |
| APPD: — | SCALE: — |

THIS BAR IS ONE INCH WHEN DRAWING IS FULL SCALE.

| REV # | DATE | DRN | APPD | DESCRIPTION |
|-------|------|-----|------|-------------|
| | | | | |

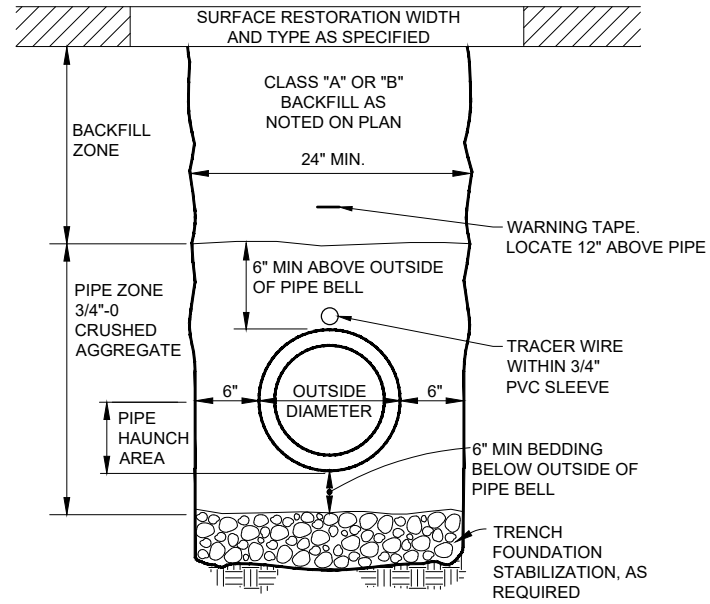
2550 SW Hillsboro Highway Hillsboro, Oregon 97123

PROJ NAME: NORWOOD PUMP STATION

SHEET TITLE: CIVIL DETAILS - 3

SHEET: 11 OF 35
PLOT DATE: JULY 2021
PLC #:
CWS PROJ #: 7056

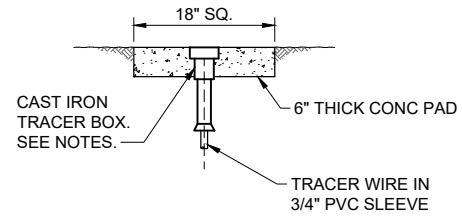
DWG #: C06



NOTES:

1. FOR DUAL PIPE TRENCHES PROVIDE 24" HORIZONTAL SEPARATION BETWEEN PIPES.

1
PIPE
TRENCH DETAIL
SCALE: NONE



NOTES:

1. TRACER BOX SHALL BE COPPERHEAD SNAKEPIT MODEL RB14, OR EQUAL. CAST IRON LID SHALL BE GREEN TO INDICATE SEWER.
2. INSTALL GROUND WIRE AND ANODE IN ACCORDANCE WITH MFR RECOMMENDATIONS.
3. LOCATE DETECTOR STATION AT LEAST 5 FEET OUTSIDE THE EDGE OF TRAVELED ROADWAYS. CLEAN WATER SERVICES TO REVIEW AND APPROVE FINAL LOCATION IN FIELD.

2
GRADE LEVEL
DETECTOR STATION DETAIL
SCALE: NONE

7/16/2021 3:53:55 PM - O:\PROJECTS\SEATTLE\47238\200-47238-21002\CAD\SHEETFILES\C07 CIVIL DETAILS - 4.DWG - NORDHOLM, ERIK



| | |
|--------|----------------------|
| DRN: — | ORIG DATE: JULY 2021 |
| DSN: — | DWG #: C07 |
| CHK: | CAD FILE #: C07 |
| APPD: | SCALE: |

THIS BAR IS ONE INCH WHEN DRAWING IS FULL SCALE.

| REV # | DATE | DRN | APPD | DESCRIPTION |
|-------|------|-----|------|-------------|
| | | | | |



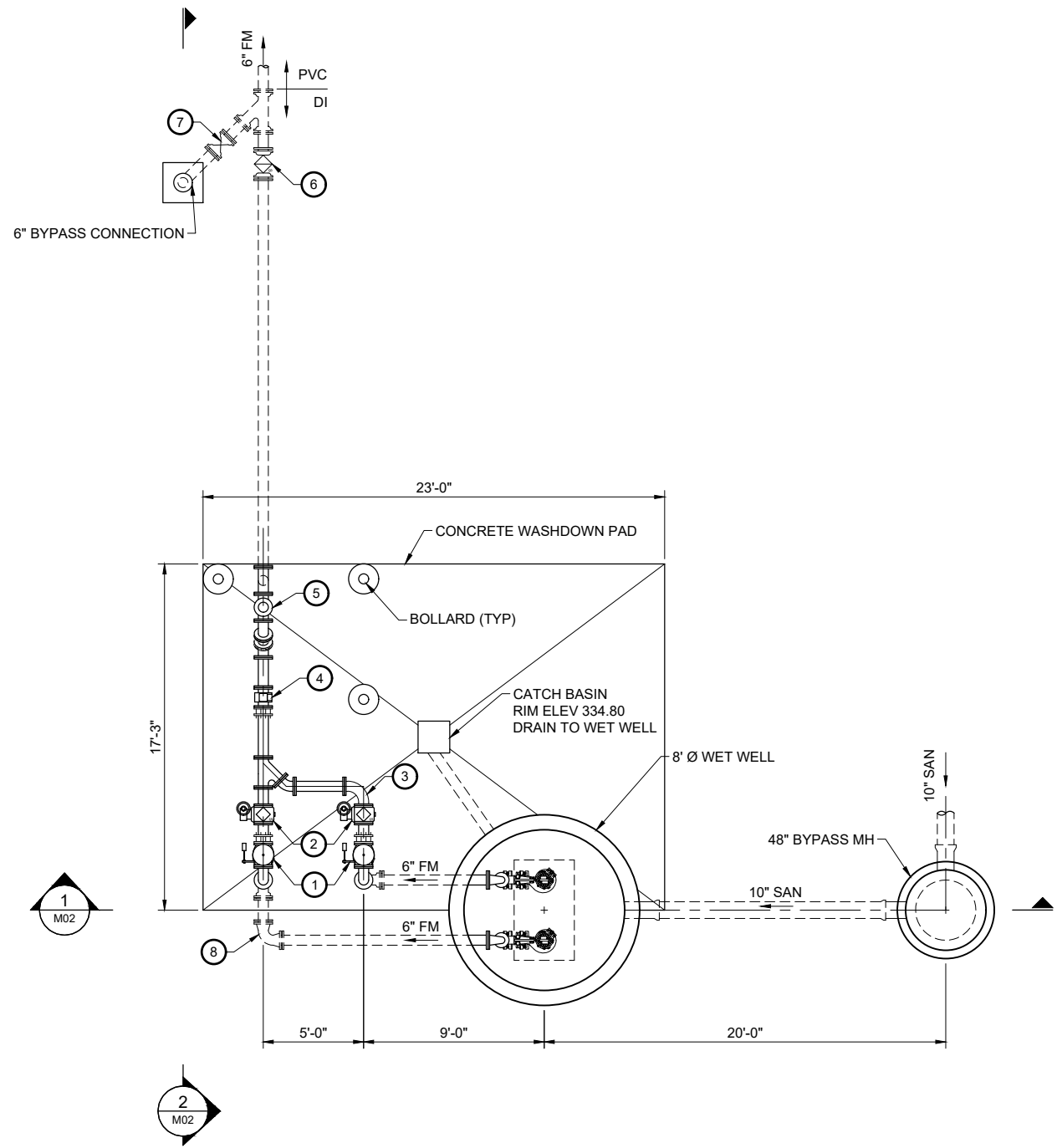
PROJ NAME:
NORWOOD PUMP STATION

SHEET TITLE:
CIVIL DETAILS - 4

SHEET: 12 OF: 35
PLOT DATE: JULY 2021
PLC #:
CWS PROJ #: 7056

DWG #:
C07

7/16/2021 3:57:12 PM - O:\PROJECTS\SEATTLE\47238\200-47238-21002\CAD\SHEETFILES\M01-PUMPSTATION\PLAN&SECTION.DWG - NORDHOLM, ERIK



KEYED NOTES:

- ① 6" SWING CHECK VALVE WITH EXTERNAL LEVER AND WEIGHT
- ② 6" PLUG VALVE W/ HANDWHEEL OPERATOR
- ③ 6" DI FLGxFLG LONG RADIUS 90° BEND
- ④ 6" ELECTROMAGNETIC FLOW METER
- ⑤ COMBINATION AIR VALVE INSTALLED ON 6"x6"x6" TEE
- ⑥ 6" MJxMJ PLUG VALVE W/ SQUARE NUT OPERATOR AND VALVE BOX.
- ⑦ 6" MJxMJ GATE VALVE W/ SQUARE NUT OPERATOR AND VALVE BOX
- ⑧ 6" DI MJxMJ 90° BEND

1 PLAN
SCALE: 1/4"=1'-0"



| | |
|---------|----------------------|
| DRN: - | ORIG DATE: JULY 2021 |
| DSN: - | DWG #: M01 |
| CHK: - | CAD FILE #: M01 |
| APPD: - | SCALE: |

THIS BAR IS ONE INCH WHEN DRAWING IS FULL SCALE.

| REV # | DATE | DRN | APPD | DESCRIPTION |
|-------|------|-----|------|-------------|
| | | | | |

CleanWater Services
Our commitment is clear.
2550 SW Hillsboro Highway Hillsboro, Oregon 97123

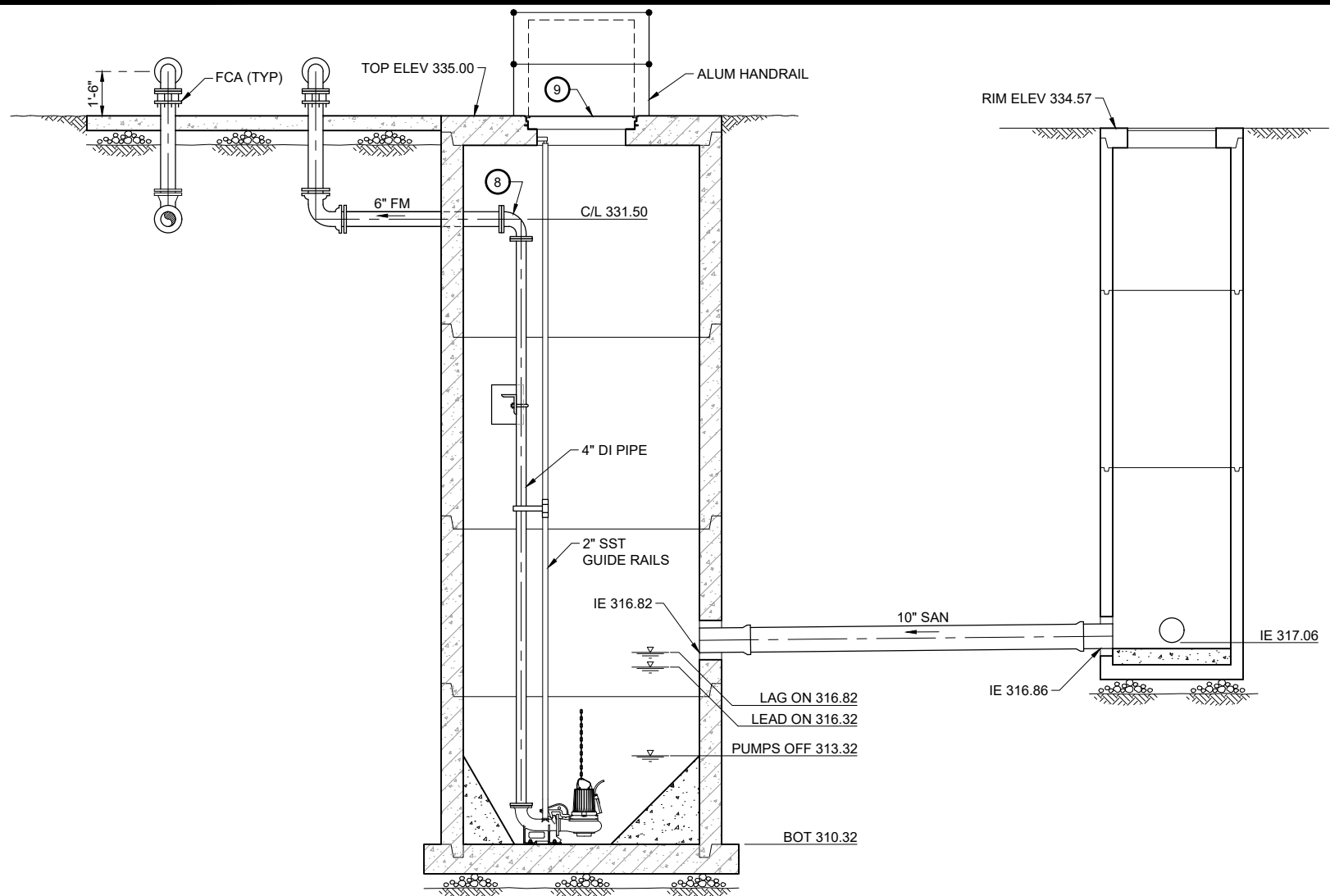
PROJ NAME: NORWOOD PUMP STATION

SHEET TITLE: PUMP STATION MECHANICAL PLAN

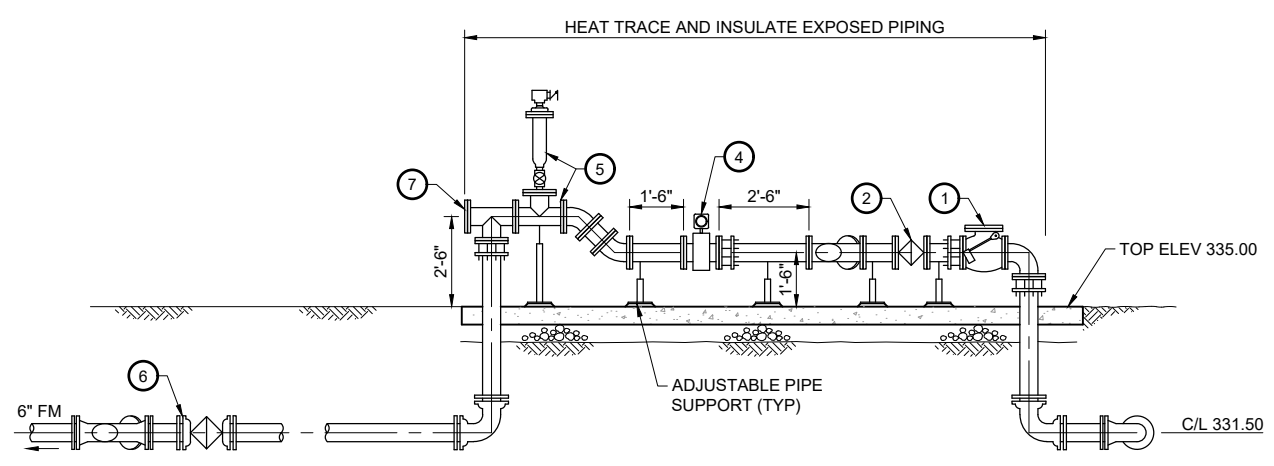
SHEET: 13 OF: 35
PLOT DATE: JULY 2021
PLC #:
CWS PROJ #: 7056

DWG #: M01

7/16/2021 3:59:58 PM - C:\PROJECTS\SEATTLE\47238\200-47238-21002\CAD\SHEETFILES\M02-PUMPSTATION\SECTIONS.DWG - NORDHOLM, ERIK



1 SECTION
SCALE: 3/8"=1'-0"



2 SECTION
SCALE: 3/8"=1'-0"

KEYED NOTES:

- ① 6" SWING CHECK VALVE WITH EXTERNAL LEVER AND WEIGHT
- ② 6" PLUG VALVE W/ HANDWHEEL OPERATOR
- ③ 6" DI FLGxFLG LONG RADIUS 90° BEND
- ④ 6" ELECTROMAGNETIC FLOW METER
- ⑤ COMBINATION AIR VALVE INSTALLED ON 6"x6"x6" TEE
- ⑥ 6" MJxMJ PLUG VALVE W/ SQUARE NUT OPERATOR AND VALVE BOX.
- ⑦ 6" BLIND FLANGE FOR CLEAN-OUT
- ⑧ 6"x4" FLGxFLG 90° REDUCING BEND
- ⑨ DOUBLE LEAF ALUMINUM HATCH WITH SAFETY GRATING. 60" x 36" MIN CLEAR OPENING



| | |
|---------|----------------------|
| DRN: - | ORIG DATE: JULY 2021 |
| DSN: - | DWG #: M02 |
| CHK: - | CAD FILE #: M02 |
| APPD: - | SCALE: - |

THIS BAR IS ONE INCH WHEN DRAWING IS FULL SCALE.

| REV # | DATE | DRN | APPD | DESCRIPTION |
|-------|------|-----|------|-------------|
| | | | | |

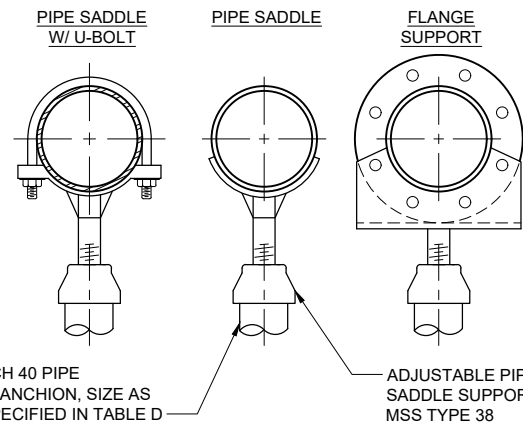
Clean Water Services
Our commitment is clear.
2550 SW Hillsboro Highway Hillsboro, Oregon 97123

PROJ NAME: **NORWOOD PUMP STATION**

SHEET TITLE: **PUMP STATION MECHANICAL SECTIONS**

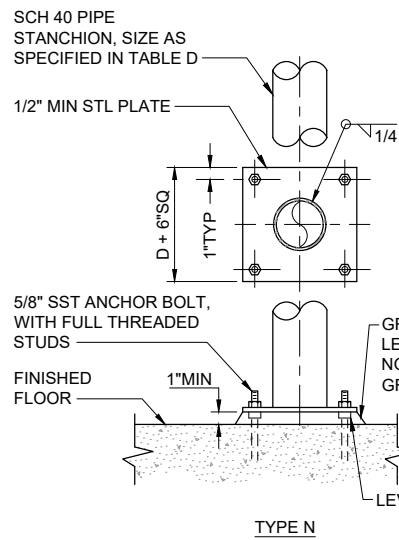
SHEET: 14 OF 35
PLOT DATE: JULY 2021
PLC #:
CWS PROJ #: 7056

DWG #: **M02**



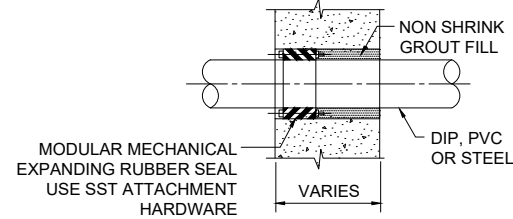
| TABLE D | |
|--------------------|-------------------------------|
| PIPE SIZE (INCHES) | STANCHION DIAMETER D (INCHES) |
| 3 | 2 |
| 4 - 12 | 3 |
| 14 - 16 | 4 |
| 18 - 24 | 6 |

1 ADJUSTABLE PIPE SUPPORT
SCALE: NONE



- NOTES: (PIPE SUPPORT SYSTEMS)
- MSS REFERS TO MANUFACTURER'S STANDARDIZATION SOCIETY OF THE VALVE AND FITTING INDUSTRY, STANDARD PRACTICE SP 58 AND SP 69.
 - FITTINGS SHALL NOT BE LESS THAN MSS CL B.
 - ALL STRUCTURAL AND PIPE ATTACHMENTS, PIPE SUPPORTS AND PIPE HANGER COMPONENTS SHALL BE STAINLESS STEEL.
 - FURNISH PIPE SADDLE WITH U-BOLT UNLESS CALLED OUT OTHERWISE.

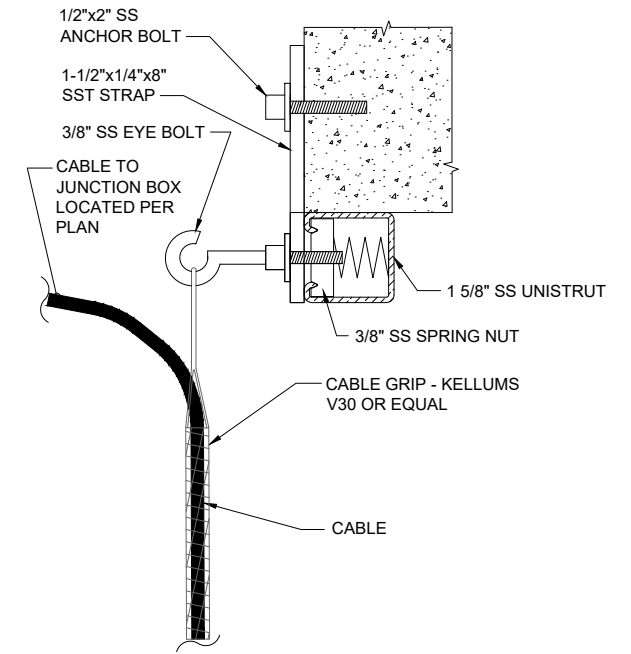
2 STRUCTURAL ATTACHMENT
SCALE: NONE



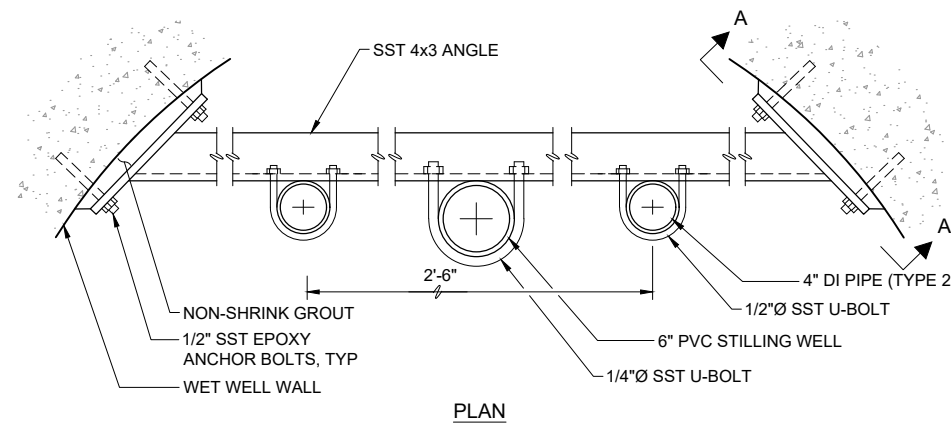
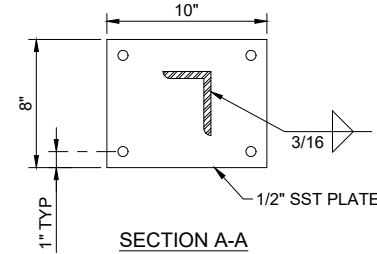
3 PIPE PENETRATION DETAIL
SCALE: NONE



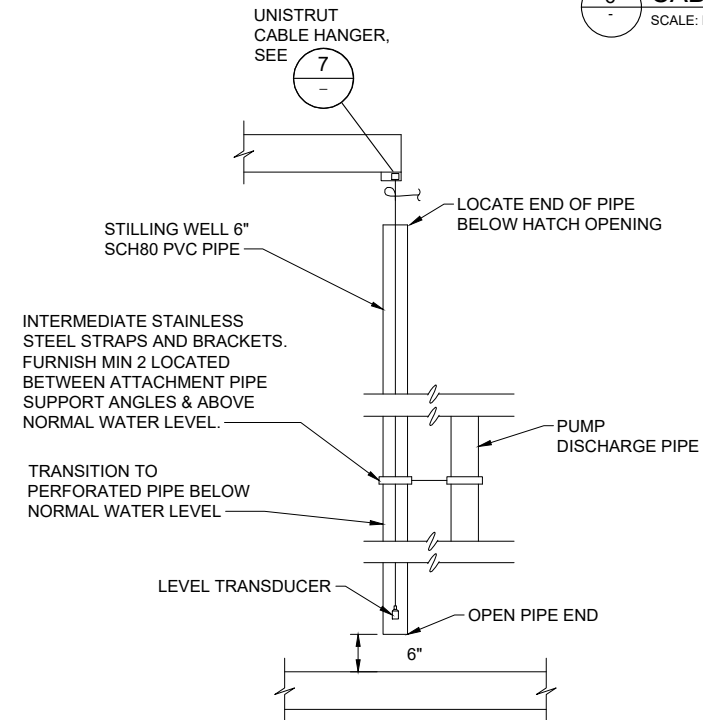
7 CABLE HANGER PHOTO
SCALE: NONE



6 CABLE HANGER SECTION
SCALE: NONE



4 DISCHARGE PIPE SUPPORT
SCALE: NONE



- NOTES:
- ALL BRACKETS AND MOUNTING HARDWARE TO BE 316 STAINLESS STEEL.
 - PROVIDE WIRING METHODS SUITABLE FOR AREA CLASSIFICATION.

5 LEVEL SENSOR MOUNTING DETAIL
SCALE: NONE

7/16/2021 4:18:41 PM - C:\PROJECTS\SEATTLE\47238\200-47238-2\100\CAD\SHEETFILES\M03.MECH.DWG - NORDHOLM, ERIK



| | |
|---------|----------------------|
| DRN: - | ORIG DATE: JULY 2021 |
| DSN: - | DWG #: M03 |
| CHK: - | CAD FILE #: M03 |
| APPD: - | SCALE: - |

THIS BAR IS ONE INCH WHEN DRAWING IS FULL SCALE.

| REV # | DATE | DRN | APPD | DESCRIPTION |
|-------|------|-----|------|-------------|
| | | | | |



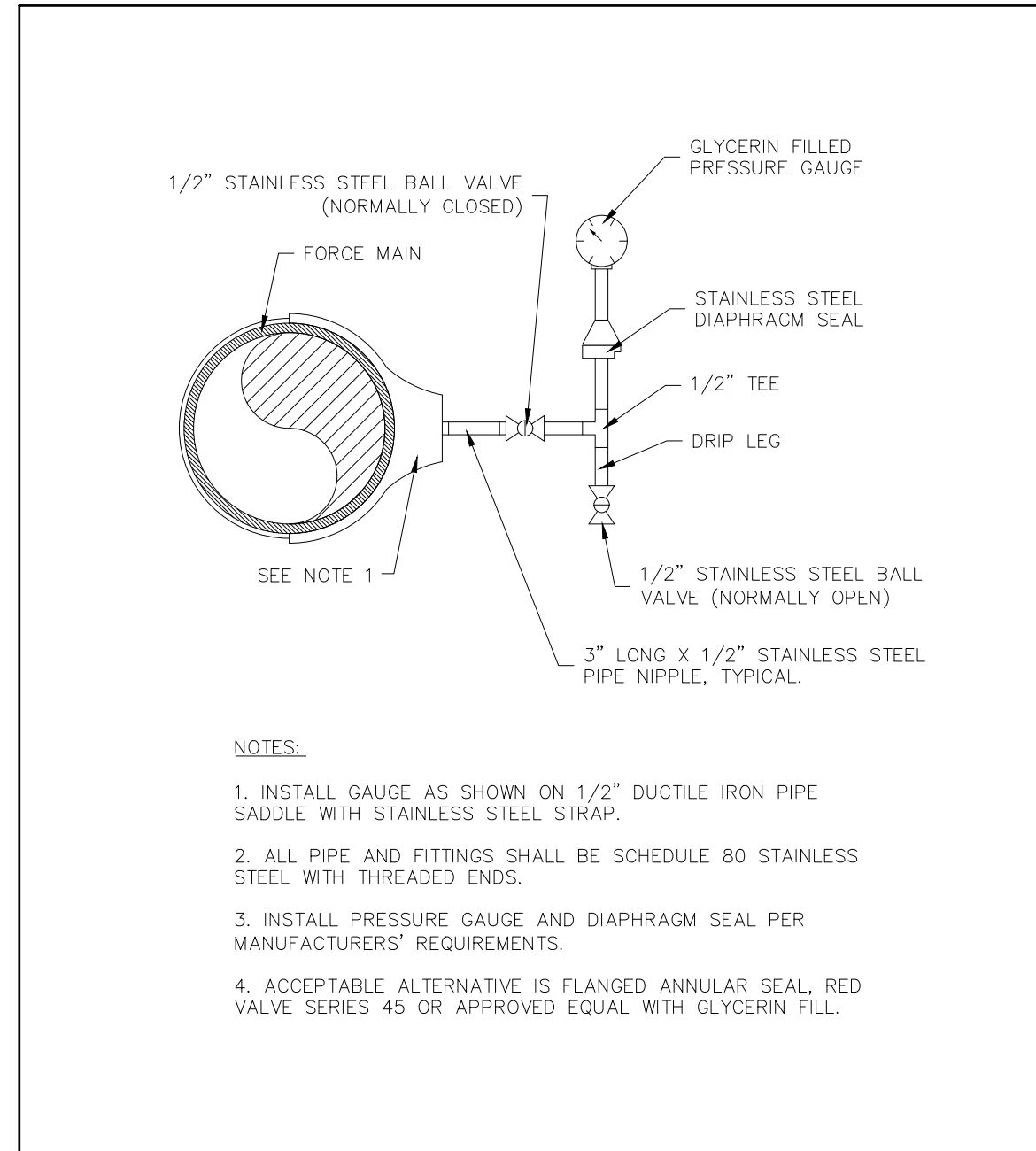
PROJ NAME: NORWOOD PUMP STATION

SHEET TITLE: MECHANICAL DETAILS - 1

SHEET: 15 OF: 35
PLOT DATE: JULY 2021
PLC #:
CWS PROJ #: 7056

M03

7/16/2021 4:23:26 PM - O:\PROJECTS\SEATTLE\47238\200-47238-21002\CAD\SHEETFILES\M04.MECH\MECHANICAL DETAILS.DWG - NORDHOLM, ERIK



NOTES:

1. INSTALL GAUGE AS SHOWN ON 1/2" DUCTILE IRON PIPE SADDLE WITH STAINLESS STEEL STRAP.
2. ALL PIPE AND FITTINGS SHALL BE SCHEDULE 80 STAINLESS STEEL WITH THREADED ENDS.
3. INSTALL PRESSURE GAUGE AND DIAPHRAGM SEAL PER MANUFACTURERS' REQUIREMENTS.
4. ACCEPTABLE ALTERNATIVE IS FLANGED ANNULAR SEAL, RED VALVE SERIES 45 OR APPROVED EQUAL WITH GLYCERIN FILL.

| | |
|----------------------------------|---|
| <p>FORCE MAIN PRESSURE GAUGE</p> |  |
| DRAWING NO. 1007 | REVISED 12-06 |

3
FORCE MAIN PRESSURE GAUGE DETAIL
 SCALE: NONE



| | | | |
|--------|----------------------|---|--|
| DRN: - | ORIG DATE: JULY 2021 | <p>THIS BAR IS ONE INCH WHEN DRAWING IS FULL SCALE.</p> | |
| DSN: - | DWG #: M04 | | |
| CHK: | CAD FILE #: M04 | | |
| APPD: | SCALE: | | |

| REV # | DATE | DRN | APPD | DESCRIPTION |
|-------|------|-----|------|-------------|
| | | | | |



2550 SW Hillsboro Highway Hillsboro, Oregon 97123

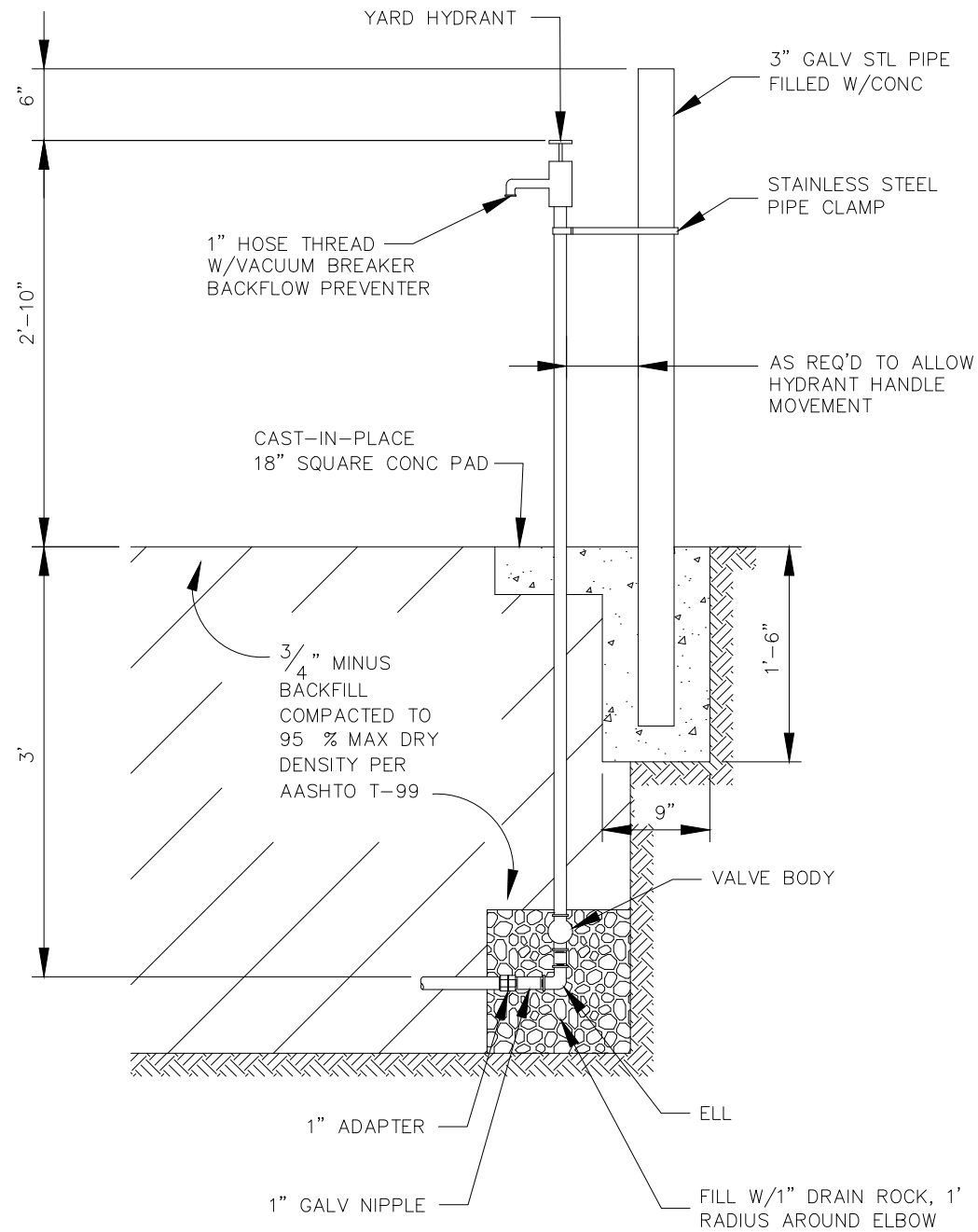
PROJ NAME:
NORWOOD PUMP STATION

SHEET TITLE:
MECHANICAL DETAILS - 2

SHEET: 16 OF: 35
PLOT DATE: JULY 2021
PLC #:
CWS PROJ #: 7056

DWG #:
M04

7/16/2021 4:27:50 PM - O:\PROJECTS\SEATTLE\47238\200-47238-21002\CAD\SHEETFILES\M05 MECHANICAL DETAILS.DWG - NORDHOLM, ERIK



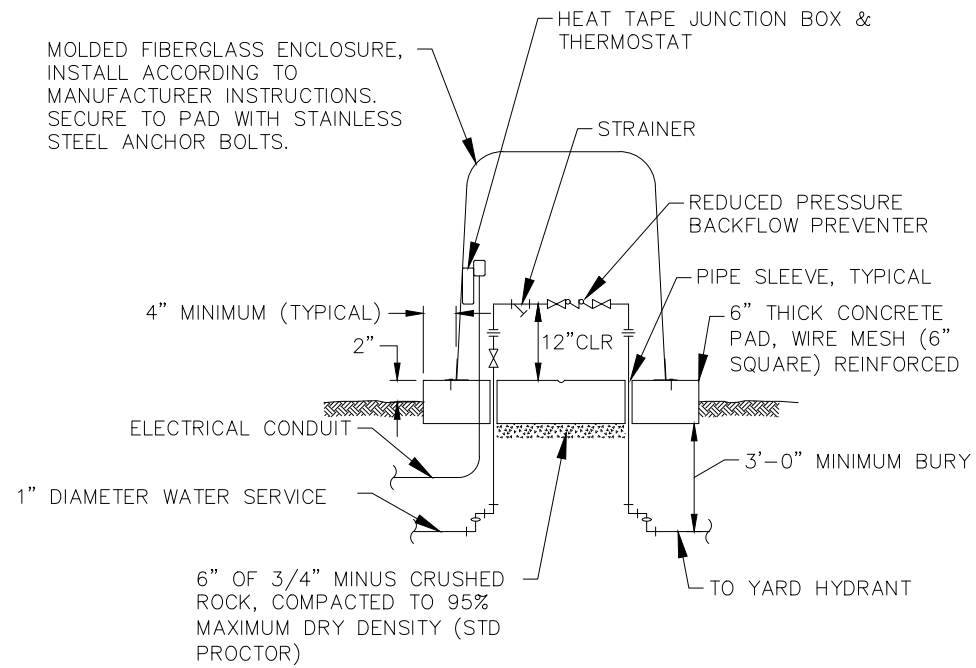
YARD HYDRANT

DRAWING NO. 1009

REVISED 12-03



1 YARD HYDRANT DETAIL
SCALE: NONE



NOTE:

1. WRAP EXPOSED WATER PIPE WITH HEAT TAPE AND PVC COATED PIPE INSULATION.

REDUCED PRESSURE BACKFLOW PREVENTER

DRAWING NO. 1011

REVISED 12-03



2 REDUCED PRESSURE BACKFLOW PREVENTER DETAIL
SCALE: NONE

NOTE:
STANDARD DRAWING MODIFIED TO INCLUDE UNIONS & SHOW VERTICAL CLEARANCE FROM CONCRETE SLAB.



| | |
|---------|----------------------|
| DRN: - | ORIG DATE: JULY 2021 |
| DSN: - | DWG #: M05 |
| CHK: - | CAD FILE #: M05 |
| APPD: - | SCALE: |

THIS BAR IS ONE INCH WHEN DRAWING IS FULL SCALE.

| REV # | DATE | DRN | APPD | DESCRIPTION |
|-------|------|-----|------|-------------|
| | | | | |



2550 SW Hillsboro Highway Hillsboro, Oregon 97123

PROJ NAME: NORWOOD PUMP STATION

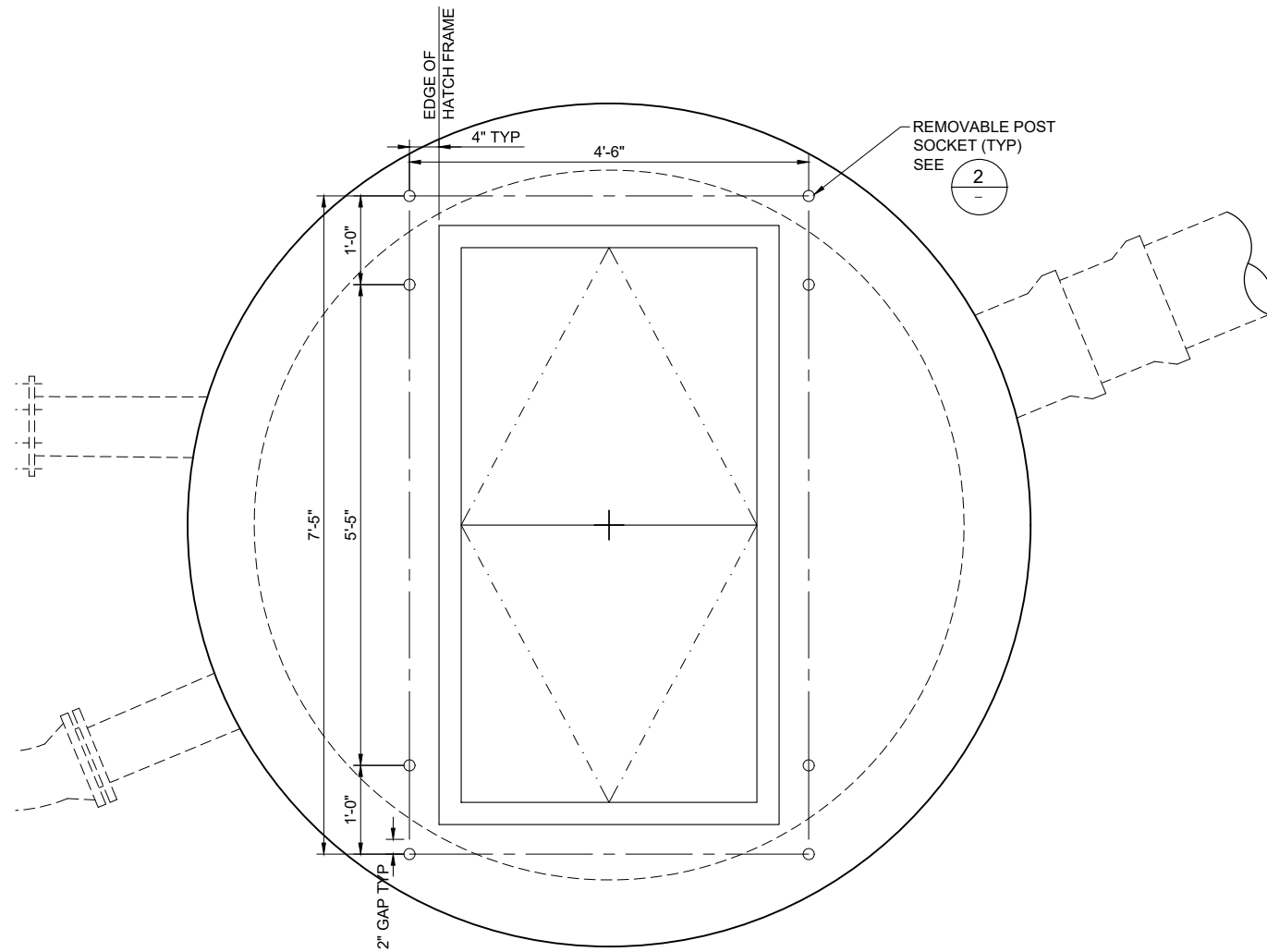
SHEET TITLE: MECHANICAL DETAILS - 3

SHEET: 17 OF: 35
PLOT DATE: JULY 2021
PLC #:
CWS PROJ #: 7056

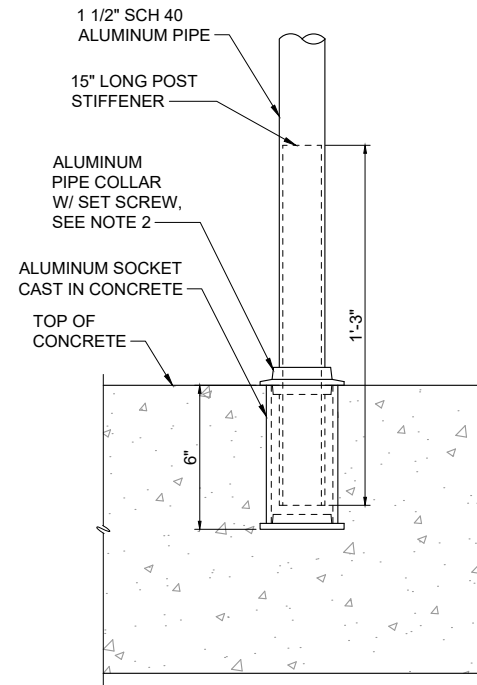
DWG #: M05

ALUMINUM RAILING SPECIFICATIONS

1. GUARDRAILS AND HANDRAILS SHALL BE THE PRODUCT OF A COMPANY NORMALLY ENGAGED IN THE MANUFACTURE OF PIPE RAILING. RAILINGS SHALL BE SHOP ASSEMBLED FOR FIELD ERECTION.
2. RAILINGS SHALL BE 1 1/2" SCHEDULE 40 ALUMINUM PIPE ALLOY 6063-T6. POST SHALL BE 1 1/2" SCHEDULE 80 ALUMINUM PIPE OF THE SAME ALLOY. POST SPACING SHALL BE A MAXIMUM OF 6'-0".
3. RAILINGS SHALL BE DESIGNED TO WITHSTAND A 200 LB CONCENTRATED LOAD APPLIED IN ANY DIRECTION AND AT ANY POINT ON THE RAILING SYSTEM. RAILINGS SHALL ALSO BE DESIGNED TO WITHSTAND A UNIFORM LOAD OF 50 LB/FT APPLIED HORIZONTALLY TO THE TOP RAIL.
4. THE MANUFACTURER SHALL SUBMIT DESIGN CALCULATIONS STAMPED BY A PROFESSIONAL ENGINEER FOR REVIEW BY THE OWNER.
5. POSTS SHALL NOT INTERRUPT THE CONTINUATION OF THE TOP RAIL AT ANY POINT ALONG THE RAILING. THE TOP SURFACE OF THE TOP RAILING SHALL BE SMOOTH AND SHALL NOT BE INTERRUPTED BY PROJECTED FITTINGS.
6. TOEBOARD SHALL CONFORM TO OSHA STANDARDS. TOEBOARD SHALL BE A MINIMUM OF 4" HIGH AND SHALL BE AN EXTRUSION THAT ATTACHES TO THE POSTS. TOEBOARD SHALL BE SET 1/4" ABOVE THE WALKING SURFACE.
7. FINISH SHALL BE ALUMINUM ASSOCIATION M10-C22-A41 (215-R1). THE PIPE SHALL BE PLASTIC-WRAPPED. THE PLASTIC WRAP IS TO BE REMOVED AFTER ERECTION.
8. ALUMINUM SURFACES IN CONTACT WITH CONCRETE, GROUT OR DISSIMILAR METALS SHALL BE PROTECTED WITH A COAT OF BITUMINOUS PAINT, MYLAR ISOLATORS OR OTHER APPROVED MATERIAL.

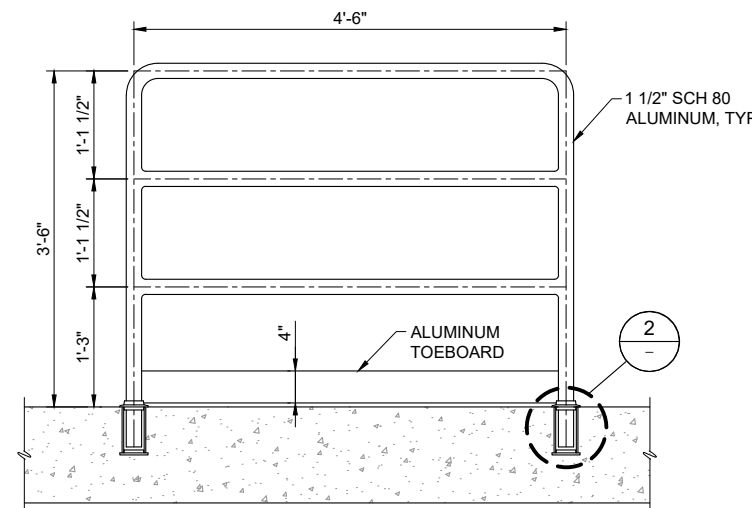


1 RAILING PLAN
SCALE: 1" = 1'-0"

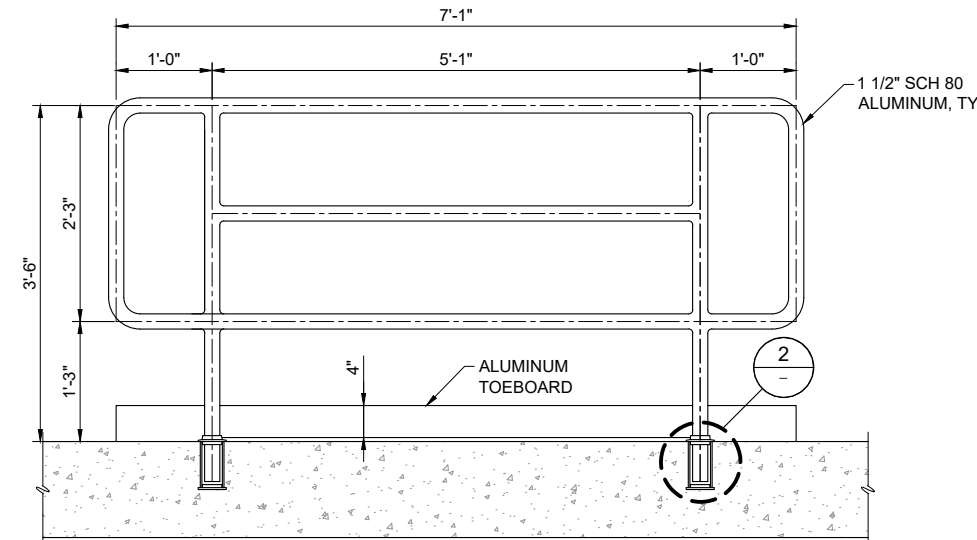


NOTE: PROVIDE 1" CLEARANCE TO ALL REBAR.

2 REMOVABLE POST SOCKET
SCALE: 3" = 1'-0"



3 SECTION
SCALE: 1" = 1'-0"



4 SECTION
SCALE: 1" = 1'-0"

7/16/2021 4:14:40 PM - C:\PROJECTS\SEATTLE\47238\200-47238-21002\CAD\SHEETFILES\M06.MECH\MECHANICAL DETAILS.DWG - NORDHOLM, ERIK



| | |
|---------|----------------------|
| DRN: - | ORIG DATE: JULY 2021 |
| DSN: - | DWG #: M06 |
| CHK: - | CAD FILE #: M06 |
| APPD: - | SCALE: - |

THIS BAR IS ONE INCH WHEN DRAWING IS FULL SCALE.

| REV # | DATE | DRN | APPD | DESCRIPTION |
|-------|------|-----|------|-------------|
| | | | | |



PROJ NAME: NORWOOD PUMP STATION

SHEET TITLE: MECHANICAL DETAILS - 4

SHEET: 18 OF 35
PLOT DATE: JULY 2021
PLC #:
CWS PROJ #: 7056

DWG #: M06

7/16/2021 12:16:23 PM - C:\USERS\LUTE\DESKTOP\1262101 - NORWOOD PUMP STATION\NORWOOD PUMP STATION SHEETS\E00 ELECTRICAL ABBREVIATIONS & SYMBOLS.DWG - JORDAN LUTE

ONE-LINE DIAGRAM SYM.

| | |
|--|---|
| | LIGHTNING ARRESTOR |
| | CURRENT TRANSFORMER X = NO. OF PHASES |
| | POTENTIAL/VOLTAGE TRANSFORMER X = NO. OF PHASES |
| | DRAW OUT OR STAB-IN CONNECTION |
| | LOW VOLTAGE CIRCUIT BREAKER TRIP AMPERAGE/POLES/FRAME SIZE 20/3/50 |
| | FUSED SWITCH, FUSE RATING/POLES/SWITCH RATING NF = NON FUSED 30/3/60 |
| | LOW VOLTAGE DRAW OUT CIRCUIT BREAKER |
| | MEDIUM VOLTAGE DRAW OUT BREAKER |
| | TRANSFORMER WITH PRIMARY VOLTAGE, SECONDARY VOLTAGE, AND KVA RATING SHOWN 480 3E 120/240V 7.5 KVA |
| | TRANSFER SWITCH ATS = AUTOMATIC MTS = MANUAL |
| | MAGNETIC STARTER W/THERMAL OVERLOADS |
| | GENERATOR. X=RATING |
| | MOTOR |
| | INSTRUMENT SWITCH |
| | <u>SUBSCRIPT:</u> AS = AMMETER SWITCH VS = VOLTMETER SWITCH |
| | SWITCHBOARD INSTRUMENT TYPE AS INDICATED |
| | METERING TYPE AS INDICATED |
| | NON-MOTOR LOAD WITH KW OR AMPERES RATING |
| | AUXILIARY OR CONTROL DEVICE (CONTROL STATION SHOWN). |
| | VARIABLE FREQUENCY DRIVE |
| | DISCONNECT OR SAFETY SWITCH, NON-FUSED UNLESS OTHERWISE INDICATED |
| | CONTROL PANEL SUPPLIED W/OTHER EQUIPMENT |
| | SEPARATLY MOUNTED COMBINATION MOTOR STARTER OR CONTROLLER. SEE ELECTRICAL ONE LINE DIAGRAM OR SCHEDULE FOR DESCRIPTION |
| | FIELD WIRING EXTERNAL TO CONTROL PANEL |
| | SELECTOR SWITCH |
| | MOTOR CONTROLLER TERMINAL |
| | FIELD DEVICE TERMINAL |

CONTROL SCHEMATIC SYM.

| | |
|--|---|
| | ON - OFF SWITCH |
| | FLOAT SWITCH, CLOSE ON RISING LEVEL |
| | FLOAT SWITCH, CLOSE ON FALLING LEVEL |
| | PRESSURE SWITCH, CLOSE ON INCREASING PRESSURE |
| | PRESSURE SWITCH, CLOSE ON DECREASING PRESSURE |
| | LIMIT SWITCH, CLOSE WHEN POSITION REACHED |
| | LIMIT SWITCH, OPEN WHEN POSITION REACHED |
| | TEMPERATURE SWITCH, CLOSE ON RISING TEMPERATURE |
| | TEMPERATURE SWITCH, OPEN ON RISING TEMPERATURE |
| | FLOW SWITCH, CLOSE ON INCREASING FLOW |
| | FLOW SWITCH, OPEN ON INCREASING FLOW |
| | TOGGLE SWITCH (OPEN & CLOSED) |
| | CONTACTOR COIL, CONTROL RELAY COIL, MOTOR STARTER COIL, OR SOLENOID VALVE COIL |
| | CONTACTS, CONTACTOR, CONTROL RELAY OR MOTOR STARTER, CONTACTS, NORMALLY OPEN & NORMALLY CLOSED |
| | OL THERMAL OVERLOAD RELAY AUXILIARY CONTACT |
| | THERMAL OVERLOAD ELEMENT |
| | PUSH TO TEST INDICATING LIGHT X INDICATES LENS COLOR |
| | <u>LENS COLORS:</u> R - RED Y - YELLOW G - GREEN W - WHITE B - BLUE A - AMBER |
| | SINGLE CIRCUIT PUSHBUTTONS, NORMALLY OPEN & NORMALLY CLOSED |
| | SELECTOR SWITCH (3-WAY SHOWN) |
| | PROGRAMMABLE CONTROLLER INPUT ("AUTO" STATUS INDICATED) |
| | PROGRAMMABLE CONTROLLER OUTPUT ("RUN" COMMAND INDICATED) |

CONTROL SCHEMATIC SYM. CONT.

| | |
|--|---|
| | TIME DELAY RELAY, TRX, TIMING RANGE AS NOTED TDAE = TIME DELAY PICK UP AFTER ENERGIZATION TDAD = TIME DELAY DROP OUT AFTER DE-ENERGIZATION |
| | TIME DELAY RELAY CONTACT, NORMALLY OPEN, CLOSE AFTER TIME DELAY ON ENERGIZATION |
| | TIME DELAY RELAY CONTACT, NORMALLY CLOSED, OPEN AFTER TIME DELAY ON ENERGIZATION |
| | TIME DELAY RELAY CONTACT, NORMALLY OPEN, CLOSE ON ENERGIZATION, OPEN AFTER TIME DELAY ON DE-ENERGIZATION |
| | TIME DELAY RELAY CONTACT, NORMALLY CLOSED, OPEN ON ENERGIZATION, CLOSE AFTER TIME DELAY ON DE-ENERGIZATION |
| | HORN |
| | RUNNING TIME METER; MAY BE TAGGED RTM, ETM OR KC |
| | BATTERY |
| | MOTOR, (3 PHASE MOTOR SHOWN) |
| | CONTROL POWER TRANSFORMER, PRIMARY AND SECONDARY VOLTAGES AS NOTED, SIZE AS REQUIRED UNLESS NOTED 480 120/240V CPT |
| | BROAD BAND FILTER FOR HARMONIC MITIGATION |
| | POWER REACTOR X = NO. OF PHASES |
| | METAL OXIDE VARISTER |
| | FUSE, FUSEBLOCK AND BLOWN FUSE INDICATOR |
| | SEAL-OFF |
| | HEATING ELEMENT |
| | CPT (CONTROL POWER TRANSFORMER) |
| | INTERNAL CONNECTION |

ELECTRICAL PLAN SYM.

| | |
|--|---|
| | GROUND |
| | ELECTRICAL CONNECTION |
| | CONDUIT SEAL |
| | CONDUIT TURNED DOWN |
| | CONDUIT TURNED UP |
| | HOME RUN EXPOSED |
| | HOME RUN CONCEALED |
| | EXPOSED WIRING RUN, 3/4" 2 #12 W/ #12 'G', UNLESS OTHERWISE NOTED |
| | UNDERGROUND ELECTRICAL DUCT BANK CONCRETE-ENCASED UNLESS OTHERWISE NOTED) |
| | GROUND GRID OR CABLE |
| | GROUND ROD |
| | EXISTING UNDERGROUND ELECTRICAL DUCT BANK |
| | UNDERGROUND TELEPHONE CONDUIT (CONCRETE ENCASED UNLESS OTHERWISE NOTED) |
| | OVERHEAD ELECTRICAL |
| | ANTENNA |
| | TRANSFORMER |
| | POWER OR LIGHTING PANEL BOARD |
| | CONTROL PANEL SUPPLIED WITH OTHER EQUIPMENT |
| | DISCONNECT OR SAFETY SWITCH, NON-FUSED UNLESS OTHERWISE INDICATED 20A FUSE, 3 POLE, 30 AMP SWITCH INDICATED |
| | JUNCTION BOX P = PULLBOX TB = TERMINAL BOX |
| | THERMOSTAT |
| | CONDUIT TAG OR CIRCUIT NUMBER |
| | AUXILIARY OR CONTROL DEVICE (CONTROL STATION SHOWN). |
| | SOLENOID VALVE |
| | INSTRUMENTATION FM - FLOW METER FS - FLOW SWITCH H - HEATER IL - INDICATION LIGHT LE,LS - LEVEL SWITCH PB - PUSHBUTTON STATION PE - PNEUMATIC ELECTRIC STATION PS - PRESSURE SWITCH SC - SPEED CONTROL DEVICE SI - SPEED INDICATOR SS - SPEED SWITCH SL - SEAL LEAK HS,SW - SELECTOR SWITCH TE - TEMPERATURE ELEMENT TG - TACHOMETER GENERATOR TS - TEMPERATURE SWITCH XS,ZS - LIMIT SWITCH XT - POSITION TRANSMITTER |

LIGHTING PLAN SYM.

| | |
|------------------------------|--|
| | LUMINAIRE (HID OR INC) |
| | EXIT SIGN, SHADED AREAS INDICATE FACE(S) |
| | FLUORESCENT LIGHT FIXTURE |
| | SELF CONTAINED EMERGENCY LIGHT |
| | EMERGENCY LIGHT, REMOTE MOUNTED HEAD |
| | POLE MOUNTED LUMINAIRE |
| | SWITCH |
| | EMERGENCY LIGHT, 2 ATTACHED HEADS SHOWN |
| <u>LUMINAIRE SUBSCRIPTS:</u> | |
| X = | FIXTURE TYPE, SEE FIXTURE SCHEDULE |
| Y = | CIRCUIT NUMBER FROM PANELBOARD |
| Z = | CONTROLLING SWITCH |
| <u>SWITCH SUBSCRIPTS:</u> | |
| NONE = | SINGLE-POLE SWITCH |
| 3 = | THREE-WAY SWITCH |
| 4 = | FOUR-WAY SWITCH |
| M = | MANUAL MOTOR STARTER WITH THERMAL ELEMENT FOR SMALL HORSEPOWER MOTOR |
| PE = | PHOTOELECTRIC |
| WP = | WEATHERPROOF SWITCH |
| XP = | EXPLOSIONPROOF SWITCH |

RECEPTACLE SYM.

| | |
|-------------------------------|---|
| | DUPLEX TELEPHONE JACK (UNLESS OTHERWISE SHOWN ON DRAWINGS) |
| | TELEPHONE JACK (UNLESS OTHERWISE SHOWN ON DRAWINGS) |
| | 125V, 20A DUPLEX RECEPTACLE, |
| | SPECIAL PURPOSE RECEPTACLE (AS DEFINED ON DRAWINGS) |
| | PLUG-IN RECEPTACLE STRIP |
| | HEAVY DUTY RECEPTACLE |
| | HEAVY DUTY DUPLEX |
| <u>RECEPTACLE SUBSCRIPTS:</u> | |
| GFCI = | GROUND FAULT CIRCUIT INTERRUPTER RECEPTACLE |
| WP = | WEATHERPROOF RECEPTACLE |
| XP = | EXPLOSIONPROOF RECEPTACLE |

GENERAL NOTES

- THIS IS A STANDARD ELECTRICAL SYMBOLS SHEET. ILLUSTRATION OF SYMBOL DOES NOT IMPLY ALL SYMBOLS HAVE BEEN USED ON THIS PROJECT.
- EMPTY CONDUITS SHALL BE PROVIDED WITH PULL ROPE AND BE CAPPED OR PLUGGED, TO PREVENT WATER ENTRY.
- LIGHTING & RECEPTACLE CIRCUIT CONDUITS & CONDUCTORS ARE NOT SHOWN ON DRAWINGS. CONTRACTOR TO PROVIDE AND INSTALL LIGHTING & RECEPTACLE CONDUITS AND CONDUCTORS REQUIRED TO OPERATE CIRCUITS.



| | |
|----------|----------------------|
| DRN: JL | ORIG DATE: JULY 2021 |
| DSN: MB | DWG #: E00 |
| CHK: MB | CAD FILE #: |
| APPD: BP | SCALE: |

THIS BAR IS ONE INCH WHEN DRAWING IS FULL SCALE.

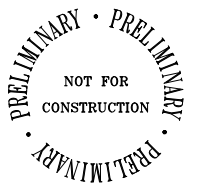
| REV # | DATE | DRN | APPD | DESCRIPTION |
|-------|------|-----|------|-------------|
| | | | | |

2550 SW Hillsboro Highway Hillsboro, Oregon 97123

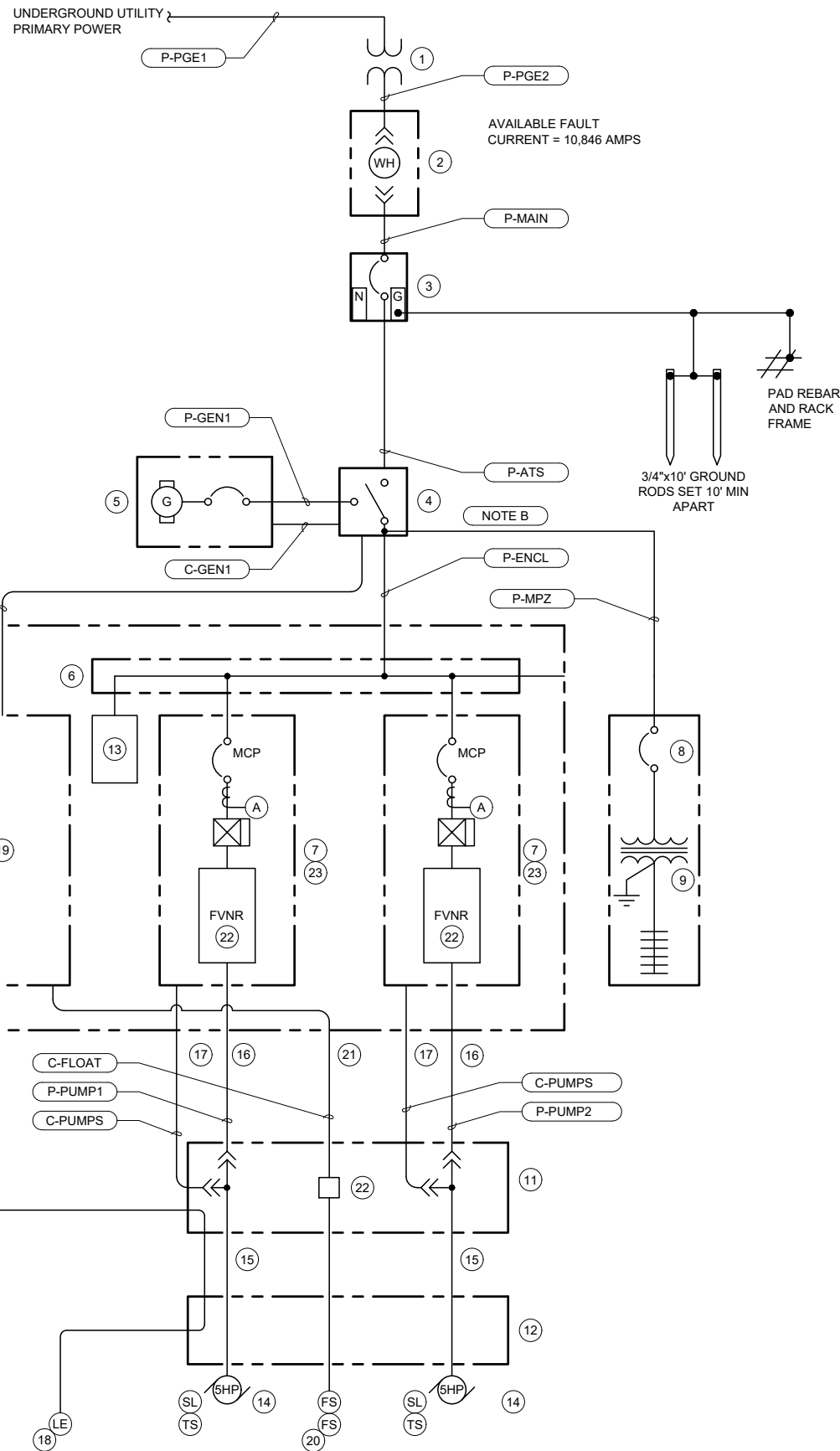
PROJ NAME:
NORWOOD PUMP STATION AND FORCE MAIN

SHEET TITLE:
ELECTRICAL ABBREVIATIONS & SYMBOLS

| | |
|----------------------|------------|
| SHEET: 19 OF: 35 | DWG #: |
| PLOT DATE: JULY 2021 | E00 |
| PLC #: | |
| CWS PROJ #: 7056 | |



7/16/2021 12:16:51 PM - C:\USERS\JLUTE\DESKTOP\P12821\01 - NORWOOD PUMP STATION\NORWOOD PUMP STATION\ONE-LINE DIAGRAM.DWG - JORDAN LUTE



| | | | |
|-----------------------------------|--|--------------------------|--|
| PANEL NAME: MINI-POWER ZONE (MPZ) | | LOCATION: UTILITY RACK | |
| VOLTAGE: 120/240V, 1Ø | | FEED FROM: ATS | |
| NUM. POLES: 1Ø | | BREAKER MOUNTING: BOLTED | |
| AMP RATING: 10,000 | | MAIN BREAKER AMPS: 100 | |
| NOTES: FEED THROUGH LUGS | | BUS RATING AMPS: 100 | |
| REF. KEY NOTE #: | | SEQ: NO | |

| NOTES | LOAD DESCRIPTION | LOAD TYPE | VA L1 | VA L2 | TRIP RATING AMPS | CIRCUIT NUMBER | CIRCUIT NUMBER | TRIP RATING AMPS | VA L1 | VA L2 | LOAD TYPE | LOAD DESCRIPTION | NOTES |
|-------|-----------------------------|-----------|-------|-------|------------------|----------------|----------------|------------------|-------|-------|-----------|---------------------------|-------|
| | CONTROL POWER | E | 600 | | 20 | 1 | 2 | 20 | 300 | | R | HOT BOX GFCO RECEPTACLE | |
| | ENCLOSURE 1 LIGHTS & HEATER | L | | 300 | 20 | 3 | 4 | 20 | 300 | | M | MISSION RTU | |
| | ENCLOSURE 1 DUPLEX OUTLET | R | 300 | | 20 | 5 | 6 | 20 | 100 | | M | FLOW TRANSMITTER | |
| | SPARE | | | | 20 | 7 | 8 | 20 | | 100 | M | WETWELL LEVEL | |
| | UTILITY RACK WEATHER PROOF | R | 300 | | 20 | 9 | 10 | 20 | 1,000 | | E | GENERATOR BATTERY CHARGER | |
| | SITE LIGHT | | | 200 | 20 | 11 | 12 | 20 | | 1,500 | E | GENERATOR BLOCK HEATER | |
| | SPARE | | | | 20 | 13 | 14 | 20 | | | | SPARE | |
| | SPARE | | | | 20 | 15 | 16 | 20 | | | | SPARE | |
| | SPARE | | | | 20 | 17 | 18 | 20 | | | | SPARE | |

| | | | | | | |
|----------------|-------|-------|-----------------|-------|--------------|-------|
| TOTAL LOAD: | 1,300 | 500 | TOTAL LOAD: | 1,400 | 1,900 | |
| COMBINED LOAD: | 2,700 | 2,400 | CONNECTED LOAD: | 5,100 | DEMAND LOAD: | 5,095 |
| | | | | | DEMAND AMPS: | 21 |

| Load Type Key | Demand Factor | Connected Load | Demand Load |
|---------------|----------------------------|----------------------------------|-------------|
| R | General Purpose Receptacle | 100% First 10kVA, 50% thereafter | 1,000 |
| L | Lighting | 125% Load | 300 |
| M1 | Largest Motor | 125% Load | 0 |
| M | Motor | 100% Load | 500 |
| A | Appliance | 100% Load | 0 |
| H | HVAC | 100% Load | 0 |
| K | Kitchen | 100% Load | 0 |
| E | Equipment | 100% Load | 3,100 |
| T | Transformer | 100% Load | 0 |
| W | Welder | 100% Load | 0 |
| RV | Recreational Vehicle | 100% Load | 0 |

| ITEM | DESCRIPTIONS | COMMENTS |
|------|--|---|
| 1 | UTILITY XMFR POWER | 480V, 3PHASE, 4W, 60HZ UNDERGROUND SECONDARY SERVICE %X IMPEDANCE |
| 2 | METER ENCLOSURE | PER UTILITY STANDARDS |
| 3 | MAIN SERVICE BREAKER | SUITABLE FOR SERVICE ENTRANCE, SS NEMA 3R |
| 4 | AUTOMATIC TRANSFER SWITCH | |
| 5 | STANDBY GENERATOR 40KW | PROVIDED WITH IN-LINE BREAKER |
| 6 | POWER DISTRIBUTION BLOCK | 480V, 3PHASE, NEMA 1 ENCLOSURE |
| 7 | COMBINATION MOTOR STARTER PANEL | PROVIDED WITH AMMETER (RANGE TWICE FLA) |
| 8 | MINI-POWER ZONE PRIMARY BREAKER (MPZ) | |
| 9 | MINI-POWER ZONE (MPZ) | MIN 3 KVA, 480V-120/240V, 1PH |
| 10 | LOAD CENTER | MIN 100AMPS, 120/240V, 1PH, 3W, 12 POLES |
| 11 | DISCONNECT AIR GAP J-BOX | AIR GAP JUNCTION BOX CONFIGURATION |
| 12 | UNDERGROUND CABLE TRENCH | |
| 13 | 3-PHASE SECONDARY SURGE ARRESTOR | |
| 14 | PUMP SUBMERSIBLE MOTOR | MOTOR PROVIDED WITH MOTOR OVER TEMP AND SEAL LEAK |
| 15 | PUMP SUBMERSIBLE POWER AND CONTROL CABLES | SUPPLIED BY PUMP MFR |
| 16 | PUMP POWER WIRES | PROVIDE IN CONDUITS |
| 17 | PUMP CONTROL WIRES | PROVIDE IN CONDUITS |
| 18 | LEVEL SENSOR | CABLE BY MFR, NO SPLICE |
| 19 | PUMP SEQUENCE CONTROL PANEL (PSCP) | |
| 20 | FLOATS | OVER FLOW AND HIGH LEVEL |
| 21 | FLOAT CONTROL WIRES | |
| 22 | FVNR ACROSS THE LINE STARTER | |
| 23 | PROVIDE PUMP NAMEPLATE ON FRONT OF STARTER PANEL | |

| LEGEND: | |
|---------|-------------------------|
| MTR | MOTOR |
| SL | SEAL LEAK |
| TS | MOTOR OVER TEMP SWITCH |
| MCP | MOTOR CIRCUIT PROTECTOR |

GENERAL NOTE:
 A. SHOW EQUIPMENT SHORT CIRCUIT RATING.
 B. PROVIDE ADDITIONAL LUGS INSIDE ATS FOR MINI-POWER ZONE.



| | |
|----------|----------------------|
| DRN: JL | ORIG DATE: JULY 2021 |
| DSN: MB | DWG #: E01 |
| CHK: MB | CAD FILE #: |
| APPD: BP | SCALE: |

THIS BAR IS ONE INCH WHEN DRAWING IS FULL SCALE.

| REV # | DATE | DRN | APPD | DESCRIPTION |
|-------|------|-----|------|-------------|
| | | | | |

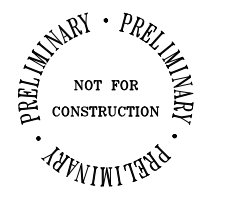


| | |
|------------|-------------------------------------|
| PROJ NAME: | NORWOOD PUMP STATION AND FORCE MAIN |
|------------|-------------------------------------|

| | |
|--------------|-----------------------------|
| SHEET TITLE: | ELECTRICAL ONE-LINE DIAGRAM |
|--------------|-----------------------------|

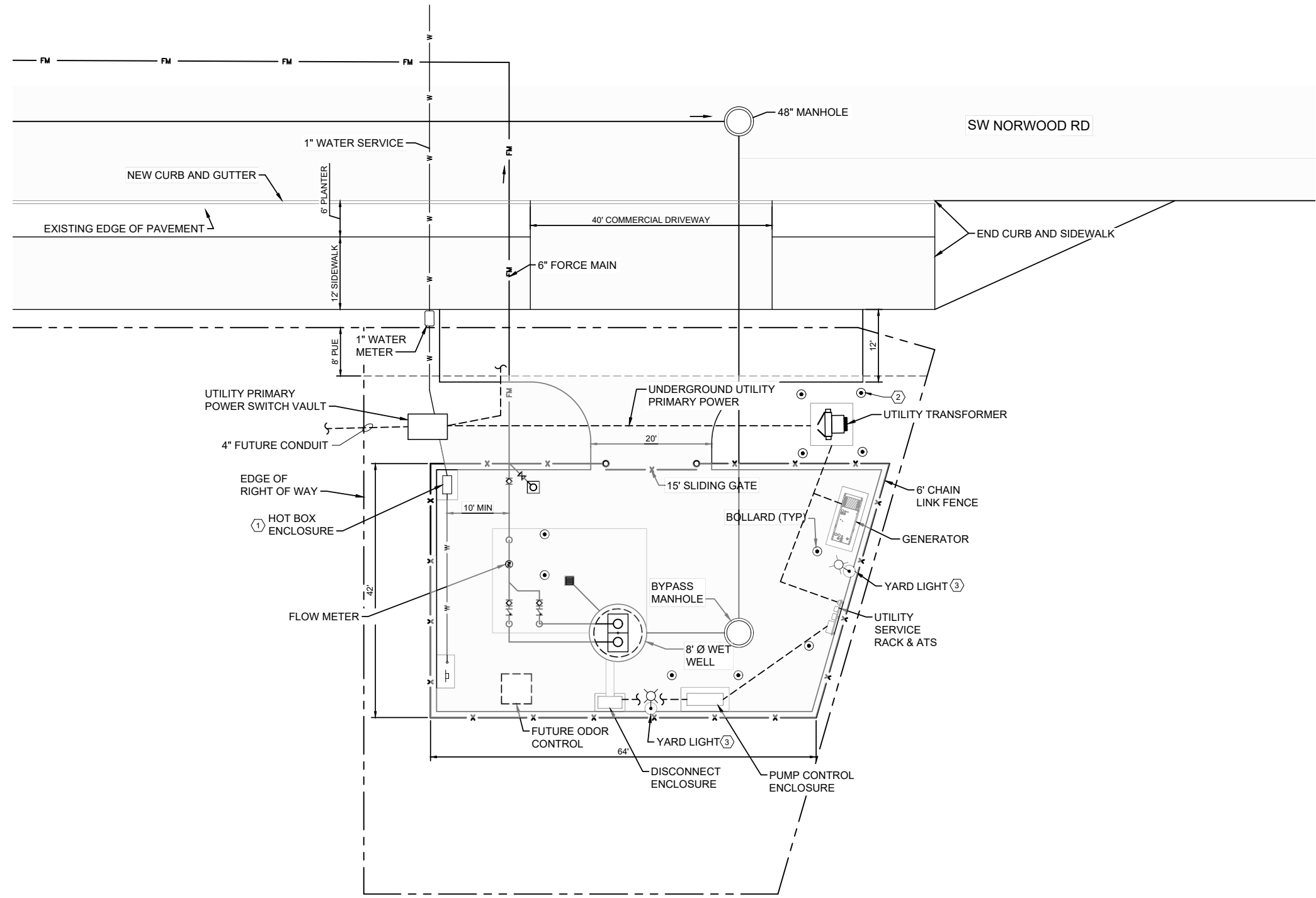
| |
|----------------------|
| SHEET: 20 OF: 35 |
| PLOT DATE: JULY 2021 |
| PLC #: |
| CWS PROJ #: 7056 |

| | |
|--------|-----|
| DWG #: | E01 |
|--------|-----|



7/16/2021 12:16:57 PM - C:\USERS\JLITE\DESKTOP\TOP12821\01 - NORWOOD PUMP STATION\NORWOOD PUMP STATION\SHEETS\E02 PRELIMINARY PUMP STATION SITE PLAN.DWG - JORDAN LUTE

- SHEET KEY NOTES**
1. PROVIDE WEATHER PROOF GFCI RECEPTACLE.
 2. CONTRACTOR TO PROVIDE REMOVABLE BOLLARDS AROUND UTILITY TRANSFORMER PER PGE REQUIREMENTS.
 3. SEE DRAWING E-11, DETAIL 3 FOR LIGHT POLE BASE AND LIGHT FIXTURE REQUIREMENTS.



1 PRELIMINARY PUMP STATION SITE PLAN
 SCALE: 1" = 10'



| | |
|----------|----------------------|
| DRN: JL | ORIG DATE: JULY 2021 |
| DSN: MB | DWG #: E02 |
| CHK: MB | CAD FILE #: |
| APPD: BP | SCALE: |

THIS BAR IS ONE INCH WHEN DRAWING IS FULL SCALE.

| REV # | DATE | DRN | APPD | DESCRIPTION |
|-------|------|-----|------|-------------|
| | | | | |
| | | | | |
| | | | | |

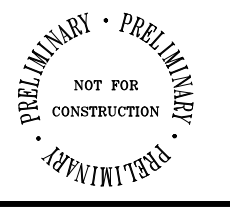
Clean Water Services
 Our commitment is clear.
 2550 SW Hillsboro Highway Hillsboro, Oregon 97123

PROJ NAME:
NORWOOD PUMP STATION AND FORCE MAIN

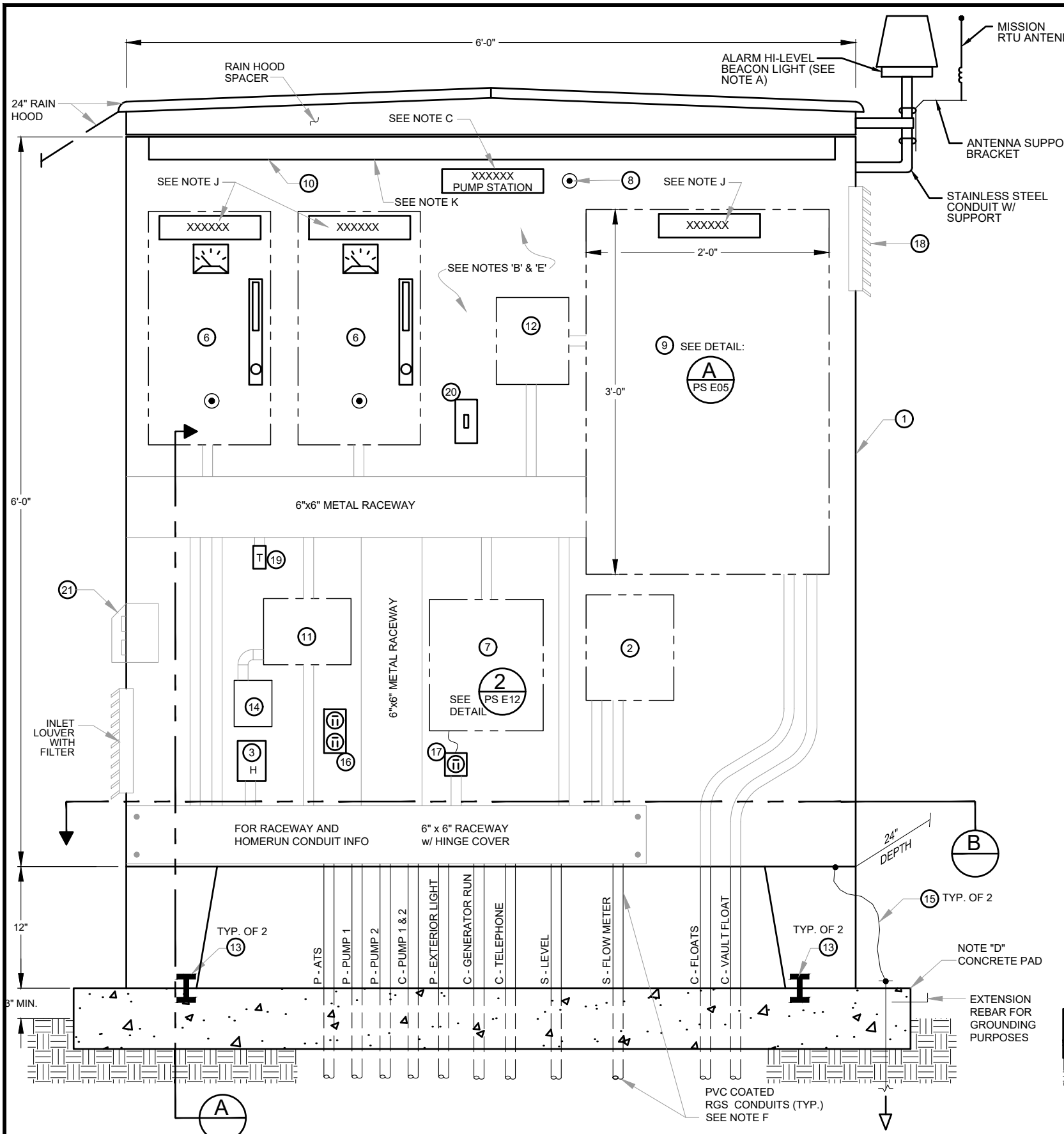
SHEET TITLE:
PRELIMINARY PUMP STATION SITE PLAN

SHEET: 21 OF: 35
 PLOT DATE: JULY 2021
 PLC #:
 CWS PROJ #: 7056

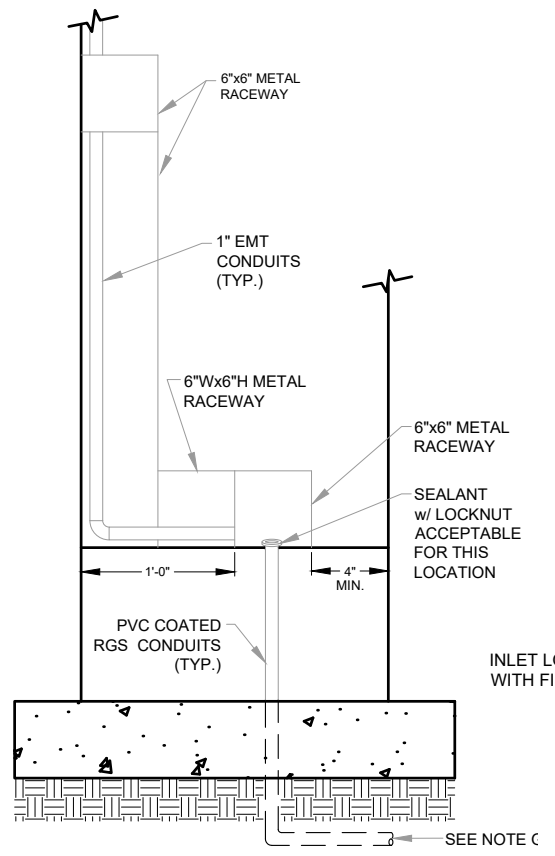
DWG #:
E02



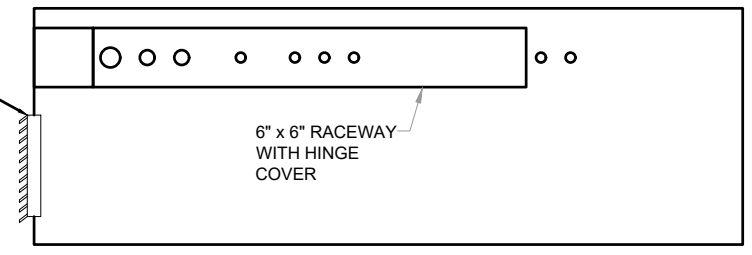
7/16/2021 12:15:42 PM - C:\USERS\JLITE\DESKTOP\1282101 - NORWOOD PUMP STATION\NORWOOD PUMP STATION SHEETS\E03 ELECTRICAL INTERIOR ENCLOSURE - 01.DWG - JORDAN LUTE



1 ELECTRICAL ENCLOSURE - 01 (INTERIOR)
SCALE: NTS



A ELECTRICAL ENCLOSURE 01 (RACEWAY PROFILE)
SCALE: NTS



B ELECTRICAL ENCLOSURE 01 (RACEWAY PLAN)
SCALE: NTS

| KEYED NOTES & NAMEPLATE DESIGNATIONS: | | |
|---------------------------------------|--|-----------------------------|
| ITEM NO. | DEVICE | NAMEPLATES |
| 1 | WEATHER PROOF ENCLOSURE | NORWOOD PUMP STATION PS XX |
| 2 | FLOW TRANSMITTER | FLOW METER |
| 3 | PANEL HEATER WITH INTEGRAL THERMOSTAT | |
| 4 | NOT USED | |
| 5 | NOT USED | |
| 6 | COMBINATION MOTOR STARTER, LOCKABLE DISCONNECT, AMMETER AND OVERLOAD RESET | PUMP 1 OR PUMP 2 |
| 7 | MISSION RTU | SEE RTU WIRING DIAGRAM |
| 8 | PANEL LIGHT ON/OFF (ACTIVATED BY DOOR OPENING) | |
| 9 | PUMP CONTROL PANEL | PUMP SEQUENCE CONTROL PANEL |
| 10 | 2' x 4' PANEL LED LIGHTS | |
| 11 | POWER DISTRIBUTION BLOCK | POWER DISTRIBUTION BLOCK |
| 12 | LEVEL CONTROLLER | LEVEL CONTROLLER |
| 13 | MINIMUM 1/2" ANCHOR BOLTS (STAINLESS STEEL) | |
| 14 | 3PH SURGE ARRESTOR | |
| 15 | GROUND RODS & GROUND WIRE, #1 | |
| 16 | GFCI DUPLEX RECEPTACLE | |
| 17 | SIMPLEX RECEPTACLE FOR MISSIONS | MISSIONS |
| 18 | PANEL EXHAUST FAN WITH FILTER AND LOUVER | |
| 19 | PANEL EXHAUST THERMOSTAT | |
| 20 | EXTERIOR POLE LIGHT CONTROL STATION | EXTERIOR LIGHT CONTROL |
| 21 | WEATHERPROOF DUPLEX OUTLET w/ RECESSED BOX | |

GENERAL NOTES

- A. HIGH LEVEL ALARM, EXTERIOR BEACON LIGHT MOUNTED ON TOP OF PANEL. MUST BE SEEN FROM STREET LEVEL. FIELD ADJUST HEIGHT AS REQUIRED.
- B. INTERIOR RACEWAY ROUTING BETWEEN PANELS WITHIN ENCLOSURE SHALL PROVIDED AS SHOWN AND SHALL BE EMT TYPE.
- C. PROVIDE DESIGNATED PUMPSTATION NAMEPLATE ON OUTSIDE FRONT OF ENCLOSURE i.e. NORWOOD PUMPSTATION.
- D. PAD DETAILS AND CONNECTION TO PAD SHOULD BE DESIGNED TO RESIST SEISMIC AND WIND LOADS. THE DETAILS SHOWN SHOULD BE CONSIDERED MINIMUMS. SEE DETAIL DWG PS E11.
- E. RUNNING THREAD CONDUIT SHALL NOT BE USED.
- F. PVC COATED CONDUITS FROM FIELD EQUIPMENT SHALL BE INTERCEPTED WITH THE 6" METAL RACEWAY. COORDINATE THE ACTUAL RACEWAY LOCATION PRIOR TO HOME RUN CONDUITS INSTALLATION. SEE CONDUIT SCHEDULE.
- G. TRANSITION FROM UNDERGROUND OR CONCRETE EMBEDDED TO EXPOSED: PVC-COATED STEEL CONDUIT TO 12" BELOW GRADE. TYP.
- H. EXPOSED WIRE **IS NOT** ACCEPTABLE.
- J. NAMPLATES PER SPECIFICATIONS FOR ALL PANELS.
- K. PROVIDE LITHONIA ZL1NL48 7000LM MVOLT 50K 80CRI WH. PROVIDE AND INSTALL MOTION SENSOR FOR CONTROL.



| | |
|----------|----------------------|
| DRN: JL | ORIG DATE: JULY 2021 |
| DSN: MB | DWG #: E03 |
| CHK: MB | CAD FILE #: |
| APPD: BP | SCALE: |

THIS BAR IS ONE INCH WHEN DRAWING IS FULL SCALE.

| REV # | DATE | DRN | APPD | DESCRIPTION |
|-------|------|-----|------|-------------|
| | | | | |
| | | | | |
| | | | | |

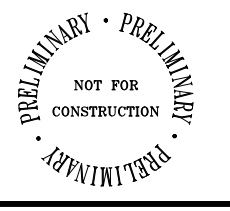
2550 SW Hillsboro Highway Hillsboro, Oregon 97123

PROJ NAME: NORWOOD PUMP STATION AND FORCE MAIN

SHEET TITLE: ELECTRICAL INTERIOR ENCLOSURE - 01

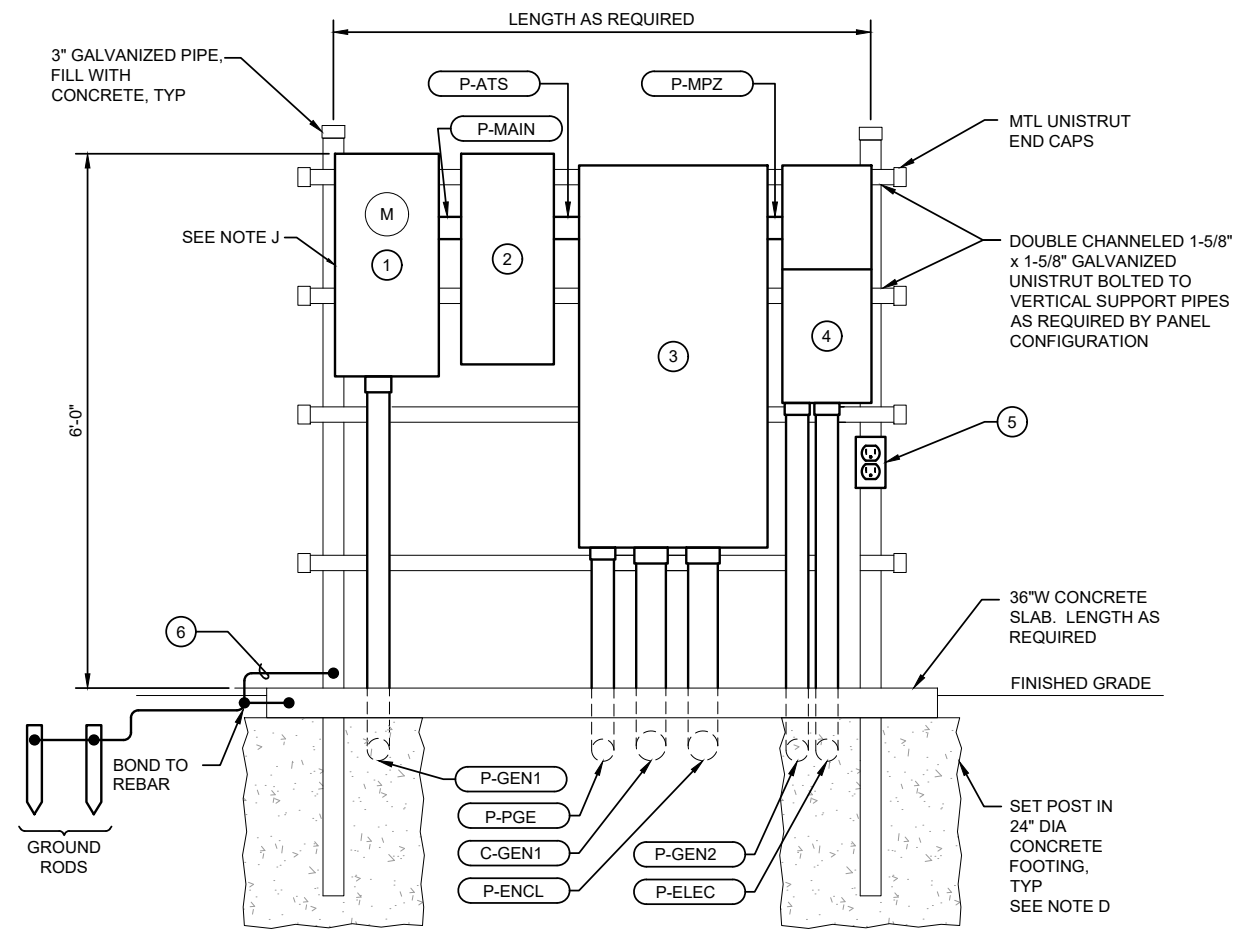
SHEET: 22 OF 35
PLOT DATE: JULY 2021
PLC #:
CWS PROJ #: 7056

DWG #: E03



7/16/2021 12:15:46 PM - C:\USERS\JLITE\DESKTOP\12821\01 - NORWOOD PUMP STATION\NORWOOD PUMP STATION\SHEETS\04 ELECTRICAL UTILITY RACK.DWG - JORDAN LUTE

| KEYED NOTES & NAMEPLATE DESIGNATIONS: | | |
|---------------------------------------|-----------------------------------|---------------------------|
| ITEM NO. | DEVICE | NAMEPLATE |
| 1 | KWH METER BASE, PER PGE STANDARDS | |
| 2 | MAIN SERVICE BREAKER, SS NEMA 4X | MAIN SERVICE BREAKER |
| 3 | AUTOMATIC TRANSFER SWITCH | AUTOMATIC TRANSFER SWITCH |
| 4 | MINI-POWER ZONE | MINI-POWER ZONE (MPZ) |
| 5 | WEATHER PROOF GFCI RECEPTACLE | CIRCUIT MPZ-9 |
| 6 | GROUND RODS & GROUND WIRE | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |



GENERAL NOTES:

- A. NOT USED
- B. NOT USED.
- C. NOT USED.
- D. PAD DETAILS AND CONNECTION TO PAD SHOULD BE DESIGNED TO RESIST SEISMIC AND WIND LOADS.
- E. RUNNING THREAD CONDUIT SHALL NOT BE USED.
- F. PVC COATED CONDUITS FROM FIELD EQUIPMENT SHALL BE INTERCEPTED WITH THE 6" METAL RACEWAY. COORDINATE THE ACTUAL RACEWAY LOCATION PRIOR TO HOME RUN CONDUITS INSTALLATION. SEE CONDUIT SCHEDULE.
- G. TRANSITION FROM UNDERGROUND OR CONCRETE EMBEDDED TO EXPOSED: PVC-COATED STEEL CONDUIT TO 12" BELOW GRADE. TYP.
- H. EXPOSED WIRE IS NOT ACCEPTABLE.
- J. KWH METER INSTALLED PER PGE MAX HEIGHT. MAIN BREAKER INSTALLED IMMEDIATELY BELOW METER.

1 ELECTRICAL UTILITY RACK
SCALE: NTS



| | |
|----------|----------------------|
| DRN: JL | ORIG DATE: JULY 2021 |
| DSN: MB | DWG #: E04 |
| CHK: MB | CAD FILE #: |
| APPD: BP | SCALE: |

THIS BAR IS ONE INCH WHEN DRAWING IS FULL SCALE.

| REV # | DATE | DRN | APPD | DESCRIPTION |
|-------|------|-----|------|-------------|
| | | | | |
| | | | | |
| | | | | |

2550 SW Hillsboro Highway Hillsboro, Oregon 97123

PROJ NAME: NORWOOD PUMP STATION AND FORCE MAIN

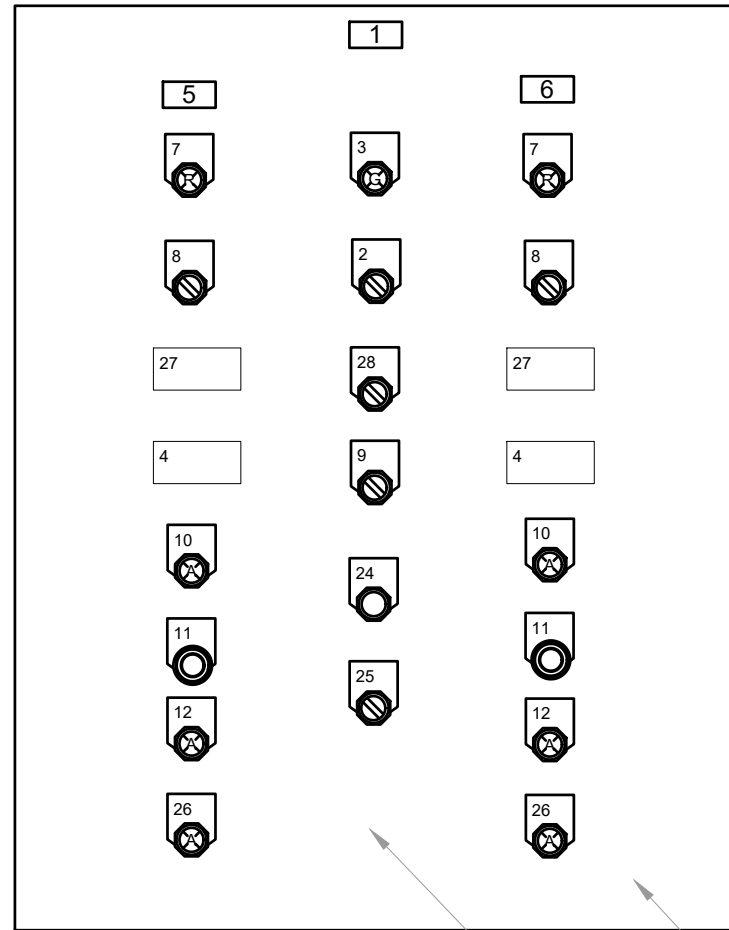
SHEET TITLE: ELECTRICAL UTILITY RACK

| |
|----------------------|
| SHEET: 23 OF: 35 |
| PLOT DATE: JULY 2021 |
| PLC #: |
| CWS PROJ #: 7056 |

DWG #: E04



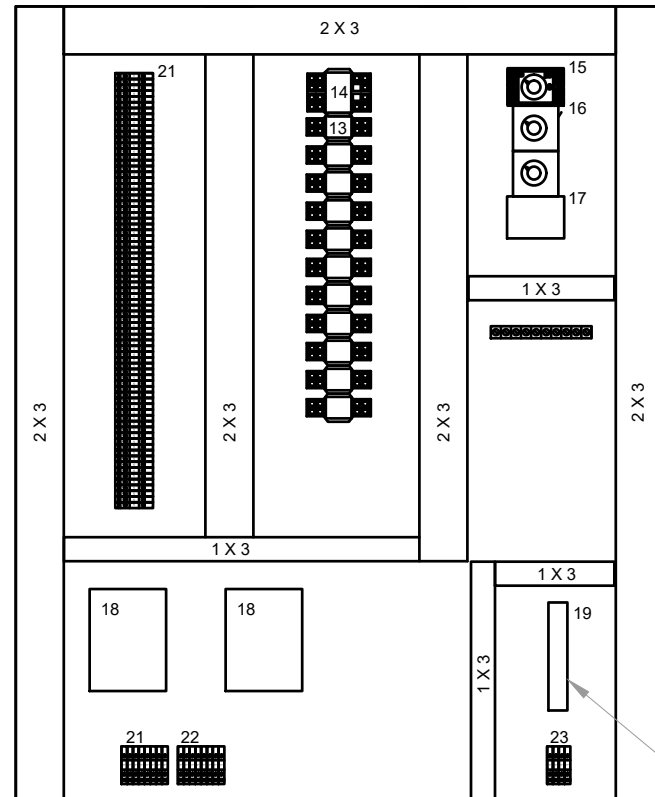
7/16/2021 12:16:50 PM - C:\USERS\JLITE\DESKTOP\P12821\01 - NORWOOD PUMP STATION\NORWOOD PUMP STATION SHEETS\E05 ELECTRICAL CONTROL PANEL DETAILS.DWG - JORDAN LUTE



FRONT
APPROXIMATE
ENCLOSURE SIZE
36"X24"X8"

(NOTE 3)

(NOTE 4)



INTERIOR
33"X23
BACKPANEL
(SEE NOTES 1 & 2)

SEE DWG E08

KEYED NOTES & NAMEPLATE DESIGNATIONS (PSCP):

| ITEM NO. | DEVICE | NAMEPLATE |
|----------|---|--|
| 1 | PUMP SEQUENCE CONTROL PANEL | PUMP CONTROL PANEL |
| 2 | SELECTOR SWITCH | CONTROL POWER ON/OFF |
| 3 | GREEN LIGHT | CONTROL POWER ON |
| 4 | RUN TIME METER | - |
| 5 | - | PUMP 1 |
| 6 | - | PUMP 2 |
| 7 | RED LIGHT | RUNNING |
| 8 | SELECTOR SWITCH | H-O-A |
| 9 | ALTERNATOR SELECTOR SWITCH | LEAD SELECTOR PUMP1-ALT-PUMP2 |
| 10 | AMBER LIGHT | SEAL LEAK |
| 11 | RESET PUSHBUTTON | OVER TEMP RESET |
| 12 | AMBER LIGHT | MOTOR OVER TEMP |
| 13 | RELAYS, 2 POLE | |
| 14 | RELAYS, 4 POLE | |
| 15 | TIMER, OFF DELAY | |
| 16 | TIMERS, ON DELAY | |
| 17 | ALTERNATING RELAY | |
| 18 | SEAL LEAK DETECTOR | |
| 19 | INTRINSICALLY SAFE RELAYS | |
| 20 | FLOAT SWITCHES, NO | |
| 21 | TERMINALS, PUMP SEQUENCE CONTROL PANEL WIRING | |
| 22 | TERMINALS, SEAL LEAK & OVERTEMP WIRING | |
| 23 | TERMINALS, INTRINSICALLY SAFE WIRING | |
| 24 | PUSHBUTTON, 1 N.O., 1 N.C. | HIGH LEVEL ALARM TEST |
| 25 | SELECTOR SWITCH, 2 POS, 1 N.O., 1 N.C. | HIGH LEVEL BEACON ALARM ENABLE-DISABLE |
| 26 | AMBER LIGHT | PUMP FAIL (OVERLOAD) |
| 27 | PUMP DIGITAL AMP DISPLAY | 120 VAC |
| 28 | WELL LEVEL DIGITAL DISPLAY | |

NOTES:

1. PROVIDE PSCP WITH 10% EXTRA SPACE AND DOOR STOP
2. PROVIDE NAMEPLATES PER SPECIFICATION.
3. PROVIDE WETWELL OPERATING ELEVATION TABLE SETPOINTS ON FRONT OF PSCP PANEL
4. PROVIDE LABEL FOR EACH PILOT DEVICE ON THE BACK OF THE PANEL DOOR.

A PUMP SEQUENCE CONTROL PANEL (PSCP) - FRONT AND INTERIOR DETAILS

SCALE: NTS

SEE SHEET E02



| | |
|----------|----------------------|
| DRN: JL | ORIG DATE: JULY 2021 |
| DSN: MB | DWG #: E05 |
| CHK: MB | CAD FILE #: |
| APPD: BP | SCALE: |

THIS BAR IS ONE INCH
WHEN DRAWING IS FULL
SCALE.

| REV # | DATE | DRN | APPD | DESCRIPTION |
|-------|------|-----|------|-------------|
| | | | | |



PROJ NAME:
**NORWOOD PUMP STATION
AND FORCE MAIN**

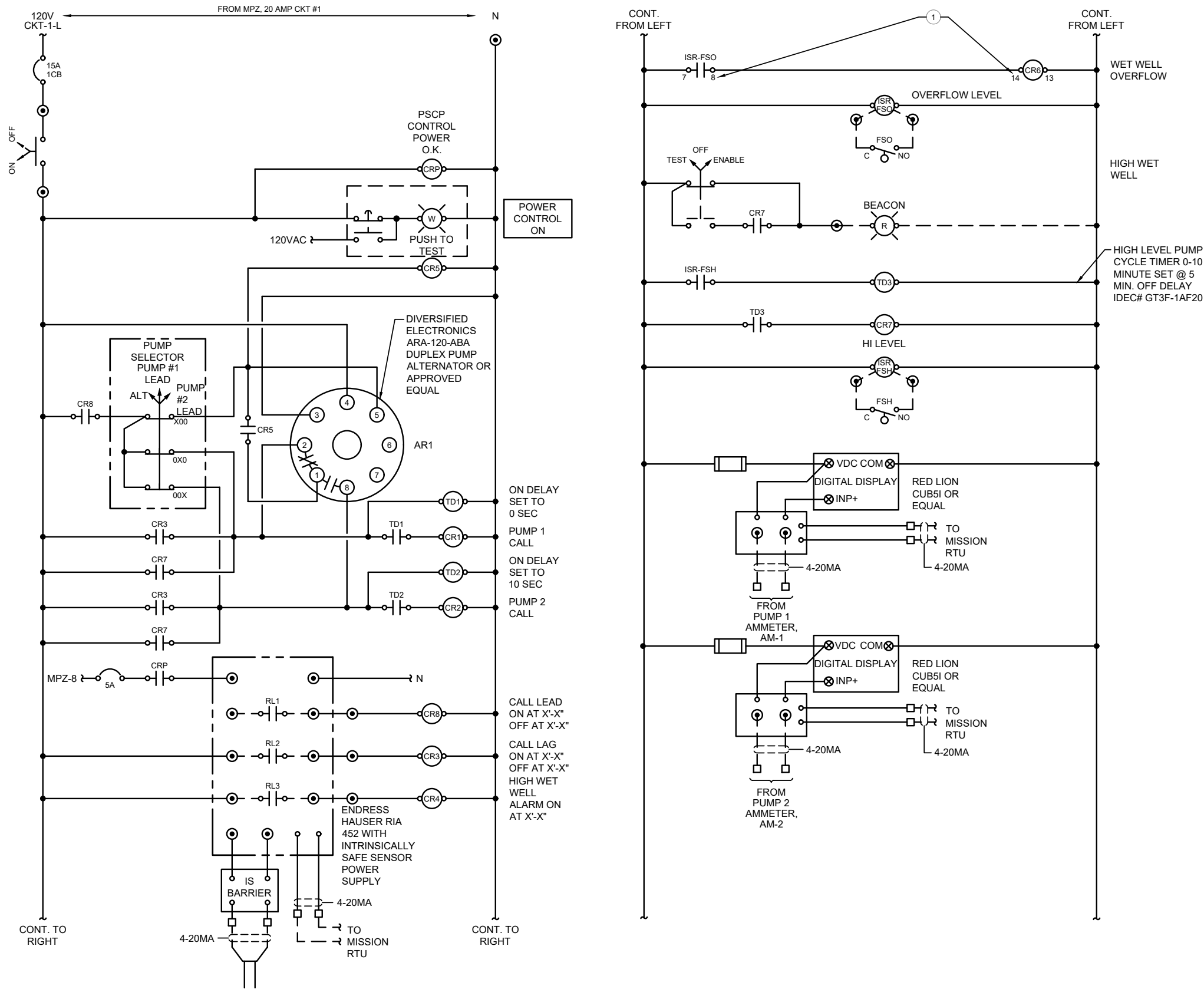
SHEET TITLE:
**ELECTRICAL
CONTROL PANEL DETAILS**

SHEET: 24 OF: 35
PLOT DATE: JULY 2021
PLC #:
CWS PROJ #: 7056

DWG #:
E05



7/16/2021 12:16:55 PM - C:\USERS\JLITE\DESKTOP\1282101 - NORWOOD PUMP STATION\SHEETS\E06 ELECTRICAL PUMP SEQUENCE CONTROL PANEL DIAGRAM.DWG - JORDAN LUTE



KEYED NOTES:
 1 PROVIDE ACTUAL RELAY CONTACT TERMINAL NUMBERS FOR ALL RELAYS FURNISHED.

1
E09 PUMP SEQUENCE CONTROL PANEL (PSCP) - CONTROL DIAGRAM
NOT TO SCALE



| | |
|----------|----------------------|
| DRN: JL | ORIG DATE: JULY 2021 |
| DSN: MB | DWG #: E06 |
| CHK: MB | CAD FILE #: |
| APPD: BP | SCALE: |

THIS BAR IS ONE INCH WHEN DRAWING IS FULL SCALE.

| REV # | DATE | DRN | APPD | DESCRIPTION |
|-------|------|-----|------|-------------|
| | | | | |
| | | | | |
| | | | | |

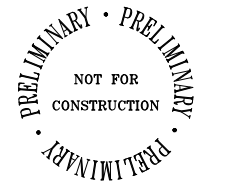


PROJ NAME: NORWOOD PUMP STATION AND FORCE MAIN

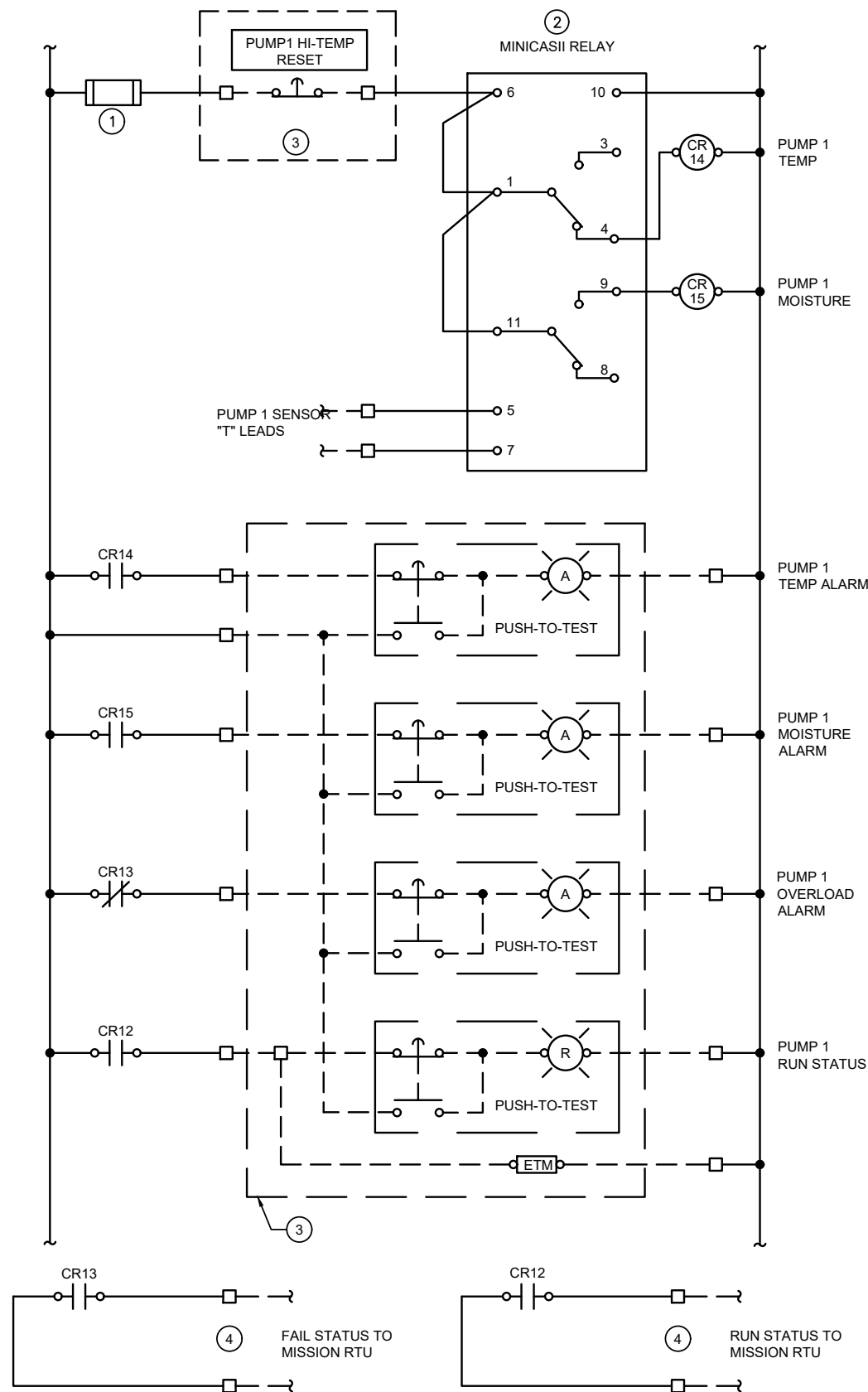
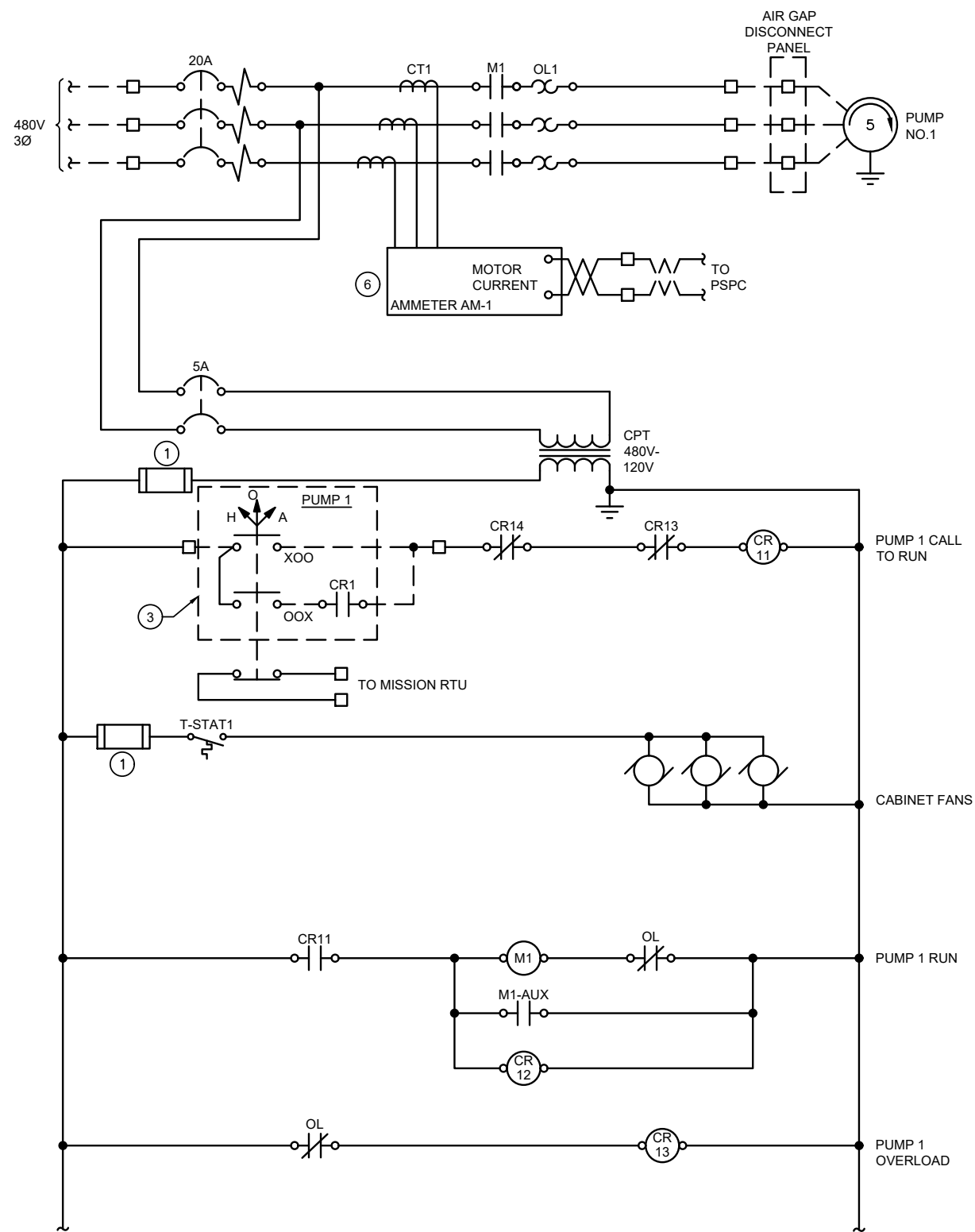
SHEET TITLE: ELECTRICAL
PUMP SEQUENCE CONTROL PANEL DIAGRAM

SHEET: 25 OF: 35
PLOT DATE: JULY 2021
PLC #:
CWS PROJ #: 7056

DWG #: E06



7/16/2021 12:15:59 PM - C:\USERS\JLITE\DESKTOP\12821\01 - NORWOOD PUMP STATION\NORWOOD PUMP STATION SHEETS\E06A ELECTRICAL PUMP #1 MOTOR STARTER SCHEMATICS DWG - JORDAN LUTE



GENERAL NOTES

- A. DESIGN IS BASED ON FLYGT PUMP CONTROL EQUIPMENT. CONTRACTOR TO PROVIDE ALTERNATE CONTROL EQUIPMENT IF OTHER PUMP MANUFACTURER IS SELECTED.
- B. CPT SHALL BE 480V OR 230V PER UTILITY PROVIDED POWER

KEY NOTES

| ITEM | DESCRIPTIONS | COMMENTS |
|------|--------------------------|---|
| ① | FUSES | FUSES TO BE SIZED PER MANUFACTURER'S RECOMMENDATIONS. |
| ② | PUMP PROTECTION RELAY | FLYGT MINICAS 120 SENSOR. (PANEL MOUNTED). THERMAL CONTACT CLOSED IN "NORMAL" STATE, OPENING ON FAULT. MOISTURE CONTACT OPEN IN "NORMAL" STATE, CLOSING ON FAULT. |
| ③ | REMOTE DEVICE AND WIRING | DEVICES IN OUTLINED AREA ARE LOCATED IN THE PSCP. DASHED WIRING SHOWN IS REPRESENTATIVE OF NECESSARY WIRING BETWEEN FVNR CABINET AND PSCP CABINET. |
| ④ | RESISTOR | CONTRACTOR WILL PROVIDE AND INSTALL 1k OHM RESISTOR PER RTU MFR REQUIREMENTS. SEE SHEET A-E-11. |
| ⑤ | BYPASS CONTACTOR | PROVIDE AND INSTALL NEMA SIZE 4, MINIMUM, BYPASS CONTACTOR. |
| ⑥ | AMMETER | PROVIDE AND INSTALL RED LION CUB5I IN MOTOR STARTER. INSTALL CTS, CUB5I AND LED DISPLAY IN MOTOR STARTER ENCLOSURE. |

CONTROL DIAGRAM MOTOR STARTER SUBMERSIBLE PUMP #1

① E-06 NOT TO SCALE



| | |
|----------|----------------------|
| DRN: JL | ORIG DATE: JULY 2021 |
| DSN: MB | DWG #: E06A |
| CHK: MB | CAD FILE #: |
| APPD: BP | SCALE: |

THIS BAR IS ONE INCH WHEN DRAWING IS FULL SCALE.

| REV # | DATE | DRN | APPD | DESCRIPTION |
|-------|------|-----|------|-------------|
| | | | | |



PROJ NAME: NORWOOD PUMP STATION AND FORCE MAIN

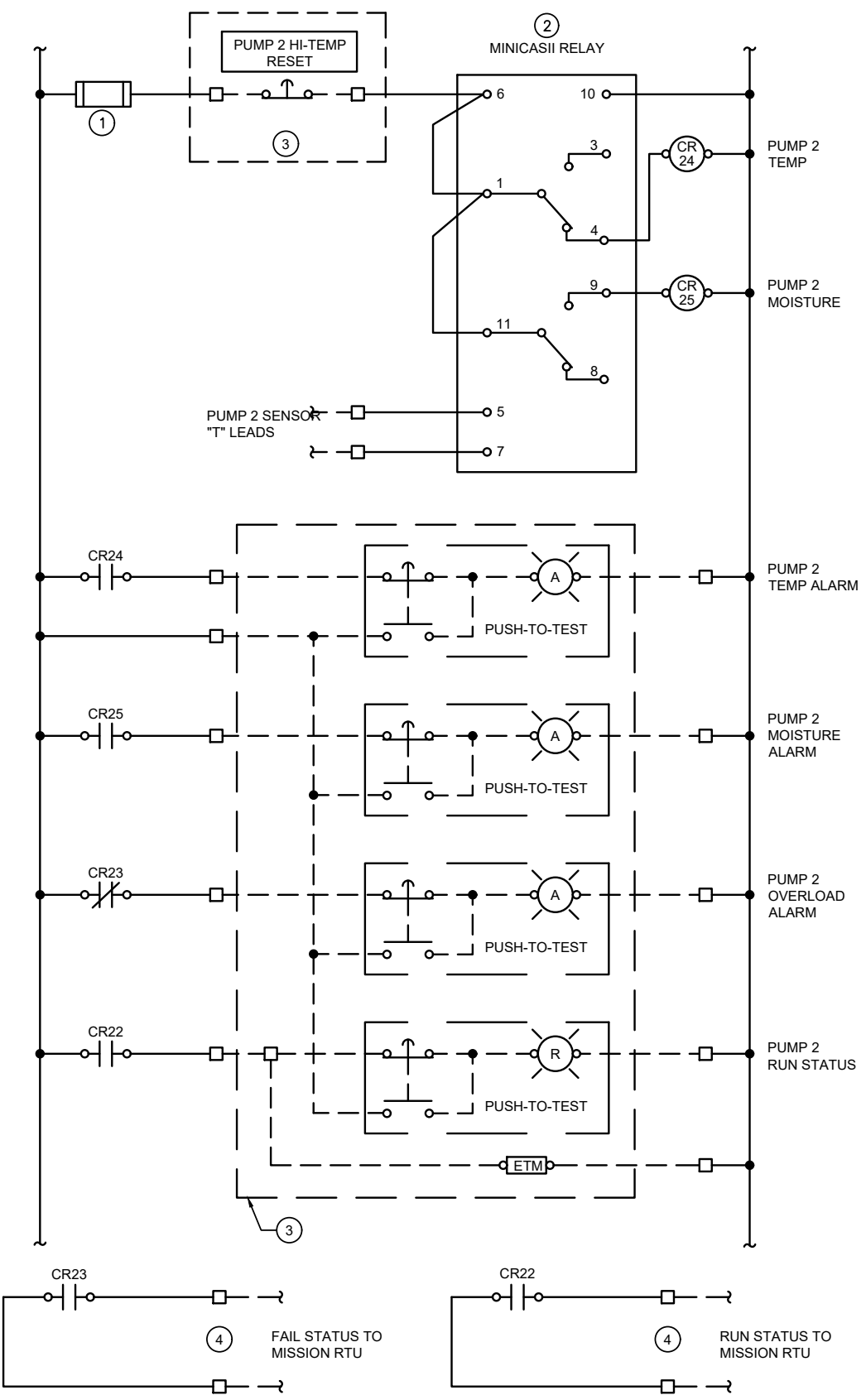
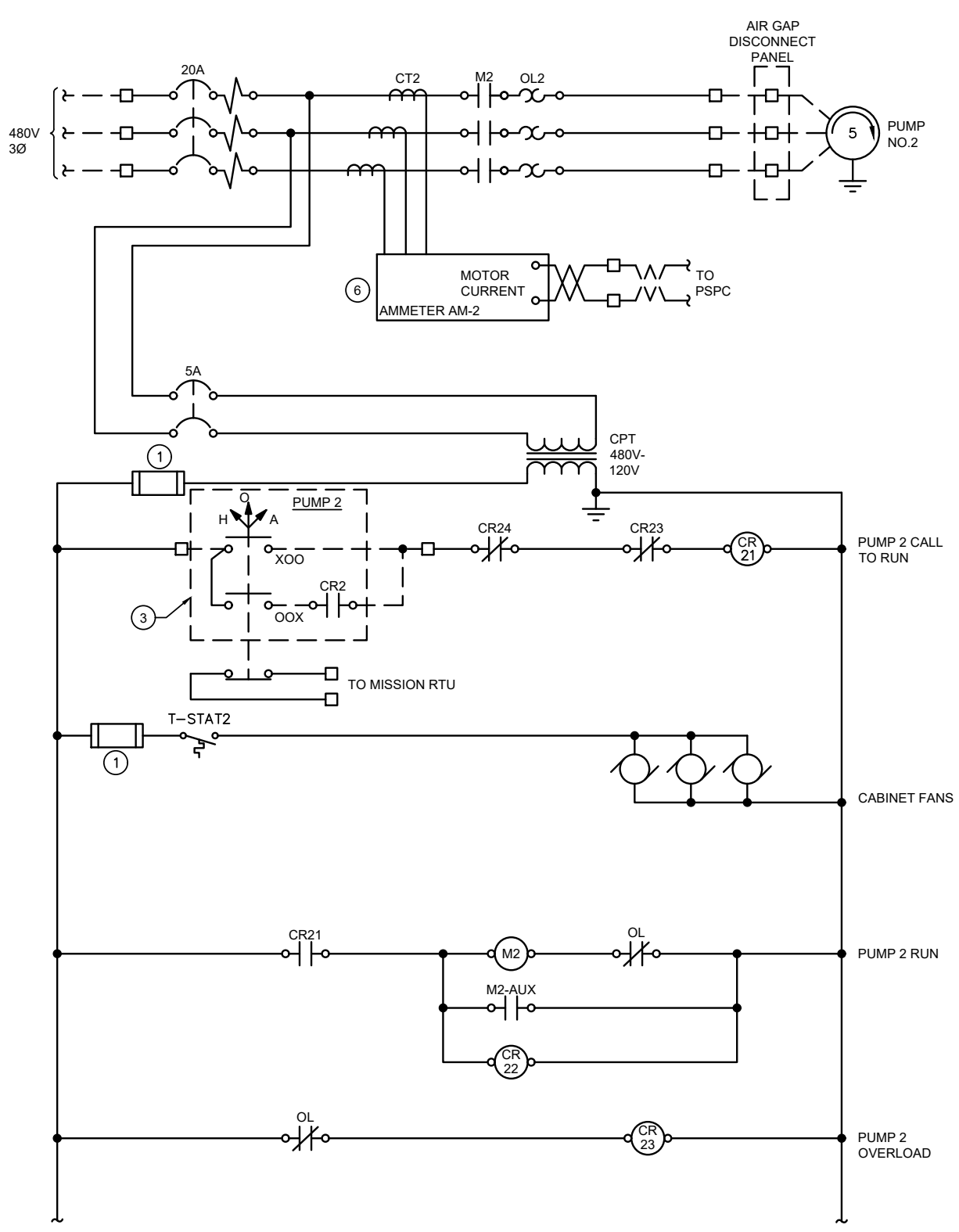
SHEET TITLE: ELECTRICAL
PUMP #1 MOTOR STARTER SCHEMATICS

SHEET: 26 OF: 35
PLOT DATE: JULY 2021
PLC #:
CWS PROJ #: 7056

DWG #: E06A



7/16/2021 12:16:03 PM - C:\USERS\JLITE\DESKTOP\1282101 - NORWOOD PUMP STATION\SHEETS\E06B ELECTRICAL PUMP #2 MOTOR STARTER SCHEMATIC.DWG - JORDAN LUTE



**CONTROL DIAGRAM MOTOR STARTER
SUBMERSIBLE PUMP #2**
NOT TO SCALE

GENERAL NOTES

A. DESIGN IS BASED ON FLYGT PUMP CONTROL EQUIPMENT. CONTRACTOR TO PROVIDE ALTERNATE CONTROL EQUIPMENT IF OTHER PUMP MANUFACTURER IS SELECTED.

KEY NOTES

| ITEM | DESCRIPTIONS | COMMENTS |
|------|--------------------------|---|
| ① | FUSES | FUSES TO BE SIZED PER MANUFACTURER'S RECOMMENDATIONS. |
| ② | PUMP PROTECTION RELAY | FLYGT MINICAS 120 SENSOR. (PANEL MOUNTED). THERMAL CONTACT CLOSED IN "NORMAL" STATE, OPENING ON FAULT. MOISTURE CONTACT OPEN IN "NORMAL" STATE, CLOSING ON FAULT. |
| ③ | REMOTE DEVICE AND WIRING | DEVICES IN OUTLINED AREA ARE LOCATED IN THE PSCP. DASHED WIRING SHOWN IS REPRESENTATIVE OF NECESSARY WIRING BETWEEN FVNR CABINET AND PSCP CABINET. |
| ④ | RESISTOR | CONTRACTOR WILL PROVIDE AND INSTALL 1k OHM RESISTOR PER RTU MFR REQUIREMENTS. SEE SHEET A-E-11. |
| ⑤ | BYPASS CONTACTOR | PROVIDE AND INSTALL NEMA SIZE 4, MINIMUM, BYPASS CONTACTOR. |
| ⑥ | AMMETER | PROVIDE AND INSTALL RED LION CUB5I IN MOTOR STARTER. INSTALL CTS, CUB5I AND LED DISPLAY IN MOTOR STARTER ENCLOSURE. |



| | |
|----------|----------------------|
| DRN: JL | ORIG DATE: JULY 2021 |
| DSN: MB | DWG #: E06B |
| CHK: MB | CAD FILE #: |
| APPD: BP | SCALE: |

THIS BAR IS ONE INCH WHEN DRAWING IS FULL SCALE.

| REV # | DATE | DRN | APPD | DESCRIPTION |
|-------|------|-----|------|-------------|
| | | | | |

2550 SW Hillsboro Highway Hillsboro, Oregon 97123

PROJ NAME:
NORWOOD PUMP STATION AND FORCE MAIN

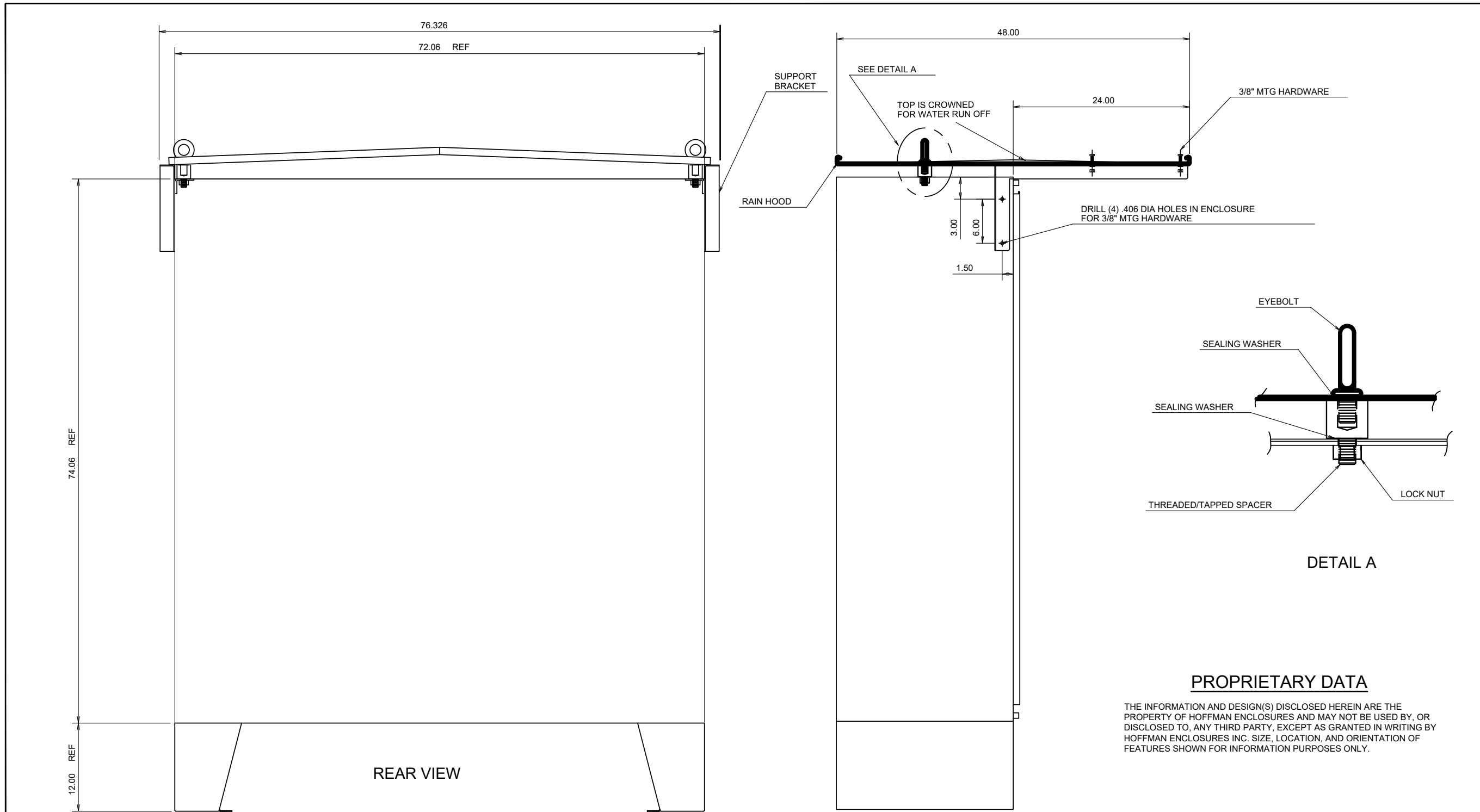
SHEET TITLE:
**ELECTRICAL
PUMP #2 MOTOR STARTER SCHEMATICS**

SHEET: 27 OF: 35
PLOT DATE: JULY 2021
PLC #:
CWS PROJ #: 7056

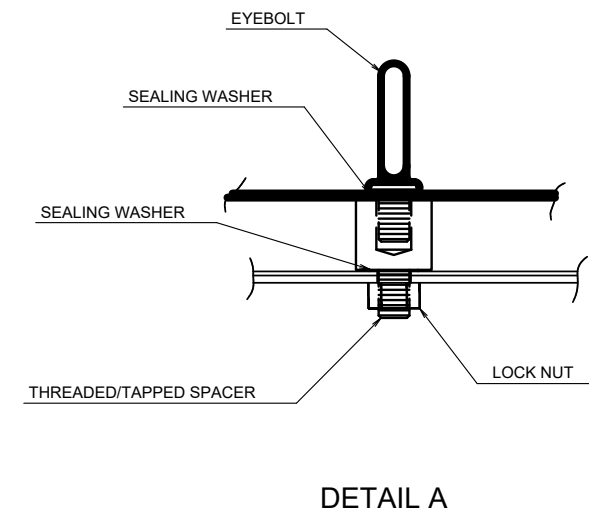
DWG #:
E06B



7/16/2021 12:16:09 PM - C:\USERS\JLUTE\DESKTOP\1282101 - NORWOOD PUMP STATION\NORWOOD PUMP STATION SHEETS\IE07 ELECTRICAL ENCLOSURE AND RAIN HOOD DETAIL REFERENCE.DWG - JORDAN LUTE



- NOTES:**
- ENCLOSURE TO BE A HOFFMAN CUSTOM STAINLESS STEEL NEMA 3R A727224USSLSPC ENCLOSURE WITH CUSTOM RAIN HOOD AND CUSTOM L30 PADLOCKING HANDLE, SUPPORT BRACKETS, SPACERS, MTG HARDWARE, & DOORSTOPS. REFERENCE HOFFMAN QUOTE OVERALL #154966 FOR ENCLOSURE AND QUOTE #133563 FOR RAIN HOOD.
 - DOORS NOT SHOWN.
 - PROVIDE SPACER FRONT AND BACK BETWEEN RAIN HOOD AND ENCLOSURE TO KEEP VERMIN OUT.



PROPRIETARY DATA

THE INFORMATION AND DESIGN(S) DISCLOSED HEREIN ARE THE PROPERTY OF HOFFMAN ENCLOSURES AND MAY NOT BE USED BY, OR DISCLOSED TO, ANY THIRD PARTY, EXCEPT AS GRANTED IN WRITING BY HOFFMAN ENCLOSURES INC. SIZE, LOCATION, AND ORIENTATION OF FEATURES SHOWN FOR INFORMATION PURPOSES ONLY.

| | | | | | | |
|--------------------------|-------------|-------|----------|-------------------|-------------------------------------|-------|
| PART NO: | N/A | REV: | A | ORIG ISSUE: | 11/01/02 | TA |
| MATERIAL: | SEE NOTES | REV: | | DESCRIPTION: | | DATE: |
| REFERENCE: | | REV: | | DESCRIPTION: | | DATE: |
| TOLERANCE UNLESS NOTED: | SCALE: NONE | DATE: | 11/01/02 | TITLE: | APPROVAL DWG (CLEAN WATER SERVICES) | |
| ONE PLACE (X) ± .1 | SCALE: NONE | DATE: | | DRW: | DO | |
| TWO PLACE (XX) ± .03 | SCALE: NONE | DATE: | | CHEK: | TA | |
| THREE PLACE (XXX) ± .015 | SCALE: NONE | DATE: | | APPR: | TA | |
| FOUR PLACE (XXXX) ± .005 | SCALE: NONE | DATE: | | DATE: | 11/01/02 | |
| ANGLES ± 2' | SCALE: NONE | DATE: | | PROJ: | D | |
| HOLE DIA ± .003 | SCALE: NONE | DATE: | | DRWING NO.: | QUOTE 133563 | |
| 2D IDEAS DRAWING | SCALE: NONE | DATE: | | PROJ. NO.: | 7056 | |
| THIRD ANGLE PROJECTION | SCALE: NONE | DATE: | | NOT SCALE DRAWING | | |



| | |
|----------|----------------------|
| DRN: JL | ORIG DATE: JULY 2021 |
| DSN: MB | DWG #: E07 |
| CHK: MB | CAD FILE #: |
| APPD: BP | SCALE: |

THIS BAR IS ONE INCH WHEN DRAWING IS FULL SCALE.

| REV # | DATE | DRN | APPD | DESCRIPTION |
|-------|------|-----|------|-------------|
| | | | | |
| | | | | |
| | | | | |

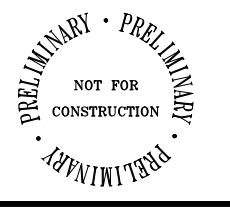
2550 SW Hillsboro Highway Hillsboro, Oregon 97123

PROJ NAME: NORWOOD PUMP STATION AND FORCE MAIN

SHEET TITLE: ELECTRICAL ENCLOSURE AND RAIN HOOD DETAIL REFERENCE

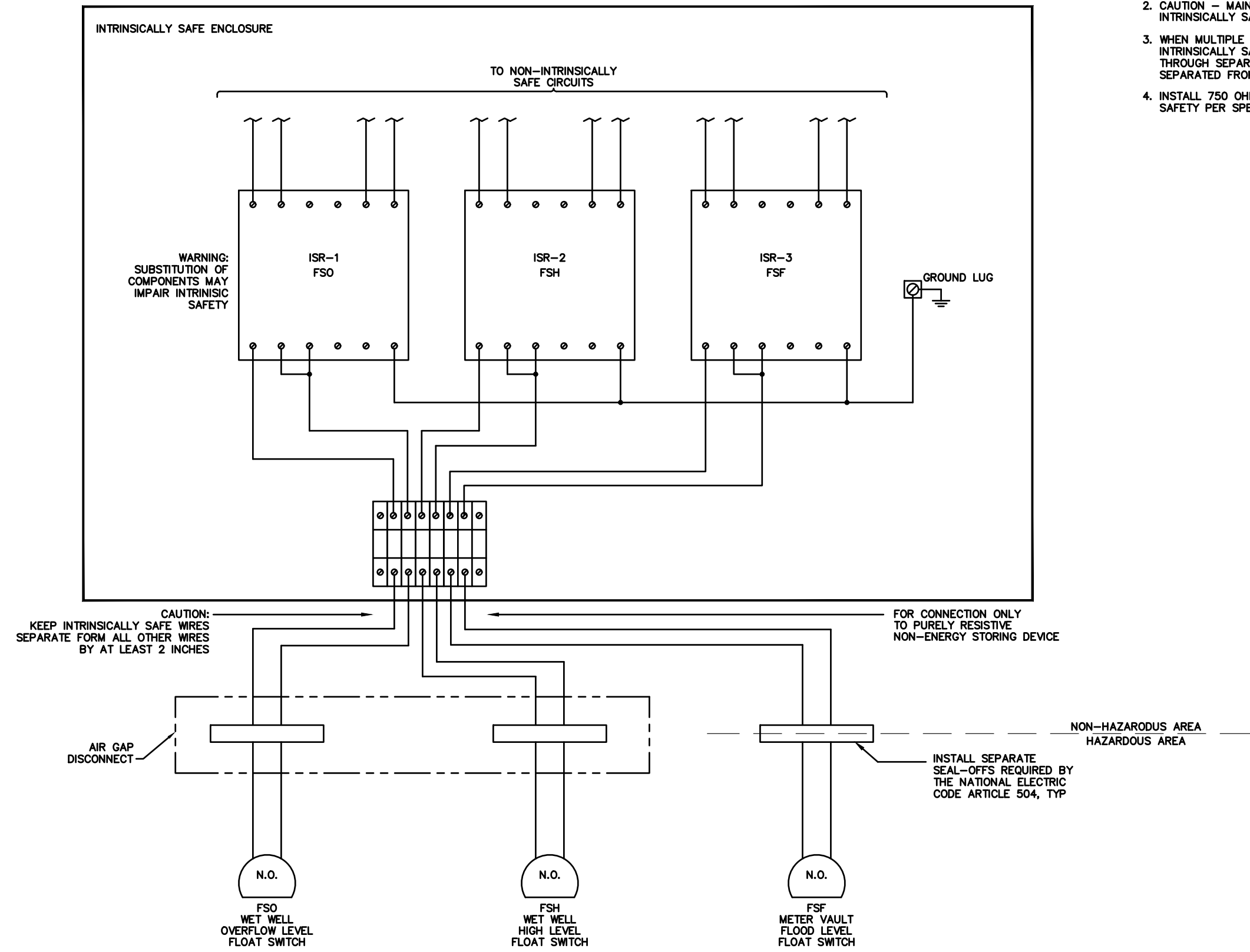
SHEET: 28 OF: 35
PLOT DATE: JULY 2021
PLC #:
CWS PROJ #: 7056

DWG #: E07



CAUTION
 THIS CONTROL PANEL IS DESIGNED TO BE MOUNTED
 IN A NON-EXPLOSIVE ENVIRONMENT. INSTALL PROPER
 CONDUIT RUNS AND SEALING FITTINGS BETWEEN EXPLOSIVE
 AND NON-EXPLOSIVE ENVIRONMENTS PER NATIONAL ELECTRIC CODES

- NOTES:
1. CABINET TO BE CONNECTED TO A GOOD GROUND
 2. CAUTION - MAINTAIN SEPARATION BETWEEN INTRINSICALLY SAFE WIRING AND OTHER WIRING
 3. WHEN MULTIPLE BARRIER MODULES ARE USED THE INTRINSICALLY SAFE CIRCUITS MUST EXIT THROUGH SEPARATE CONDUITS AND BE SEPARATED FROM EACH OTHER
 4. INSTALL 750 OHM RESISTORS FOR INSTRINSIC SAFETY PER SPECIFICATIONS.



7/16/2021 12:16:13 PM - C:\USERS\JLITE\DESKTOP\1282101 - NORWOOD PUMP STATION\NORWOOD PUMP STATION SHEETS\IE88 INTRINSICALLY SAFE EXAMPLE.DWG - JORDAN LUTE



| | |
|----------|----------------------|
| DRN: JL | ORIG DATE: JULY 2021 |
| DSN: MB | DWG #: E08 |
| CHK: MB | CAD FILE #: |
| APPD: BP | SCALE: |

THIS BAR IS ONE INCH WHEN DRAWING IS FULL SCALE.

| REV # | DATE | DRN | APPD | DESCRIPTION |
|-------|------|-----|------|-------------|
| | | | | |
| | | | | |
| | | | | |



PROJ NAME:
 NORWOOD PUMP STATION AND FORCE MAIN

SHEET TITLE:
 ELECTRICAL
 INTRINSICALLY SAFE
 EXAMPLE

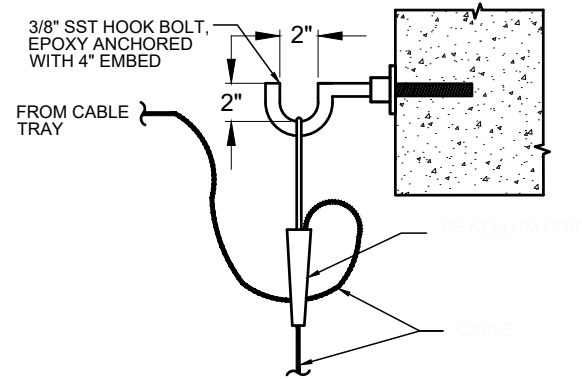
SHEET: 29 OF: 35
 PLOT DATE: JULY 2021
 PLC #:
 CWS PROJ #: 7056

DWG #:
 E08



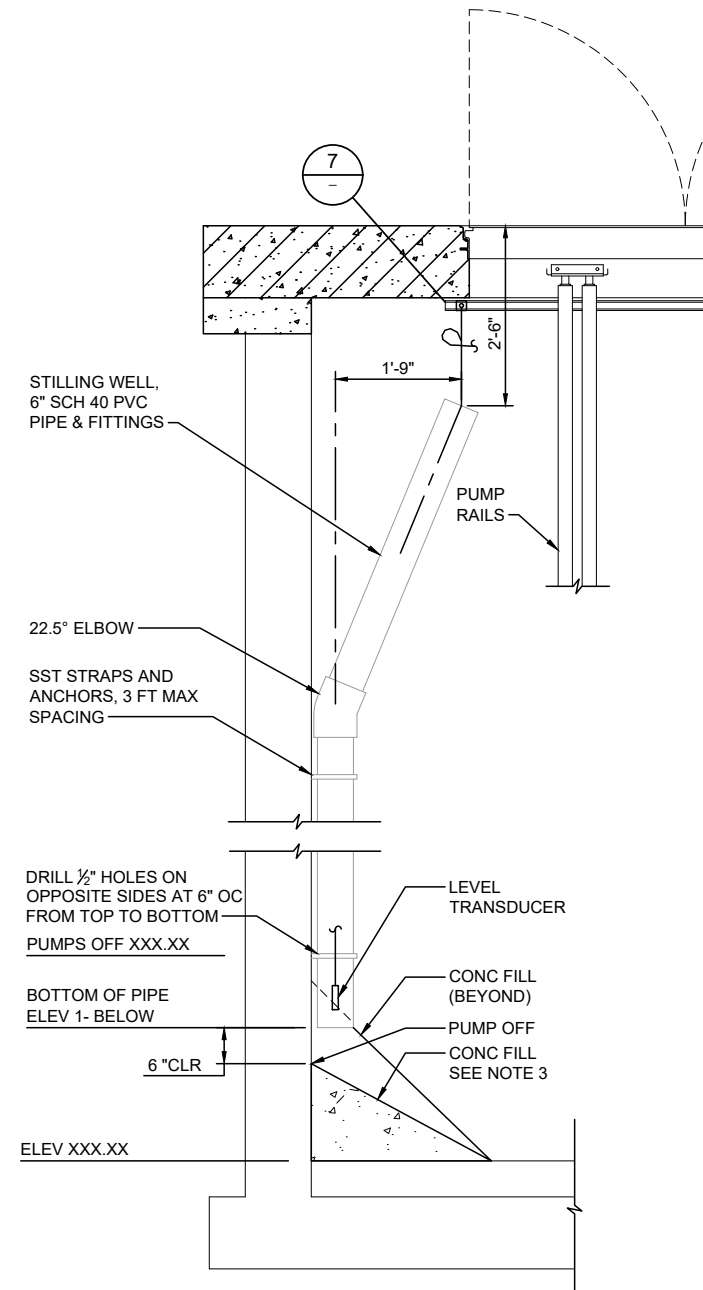


4 CABLE TRENCH PHOTOS
SCALE: NONE



- NOTES:**
1. ALL HARDWARE GRADE 316 STAINLESS STEEL.
 2. CABLE HANGER SHALL BE PROVIDED FOR FLOATS, LEVEL SENSORS AND PUMPS. PROVIDE A TOTAL OF 6 HANGERS.
 3. INSTALL CABLE HANGER AS HIGH AS POSSIBLE WITHOUT CONFLICTING WITH ACCESS HATCH.

7 CABLE HANGER SECTION
SCALE: NONE



- NOTES:**
1. ALL BRACKETS AND MOUNTING HARDWARE TO BE 316 STAINLESS STEEL.
 2. PROVIDE WIRING METHODS SUITABLE FOR AREA CLASSIFICATION.
 3. TRANSITION CONCRETE FILL TO PROVIDE 6" CLEARANCE FROM END OF STILLING WELL.
 4. SEE ELECTRICAL DETAIL DWG E-10 NOTE 4 FOR CABLE TRENCH DETAIL.

6 LEVEL SENSOR MOUNTING DETAIL
SCALE: NONE

7/16/2021 12:16:21 PM - C:\USERS\JLUTE\DESKTOP\12821\01 - NORWOOD PUMP STATION\NORWOOD PUMP STATION\SHEETS\E09 MECHANICAL DETAILS.DWG - JORDAN LUTE



| | |
|----------|----------------------|
| DRN: JL | ORIG DATE: JULY 2021 |
| DSN: MB | DWG #: E09 |
| CHK: MB | CAD FILE #: |
| APPD: BP | SCALE: |

THIS BAR IS ONE INCH WHEN DRAWING IS FULL SCALE.

| REV # | DATE | DRN | APPD | DESCRIPTION |
|-------|------|-----|------|-------------|
| | | | | |
| | | | | |
| | | | | |

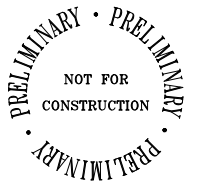
2550 SW Hillsboro Highway Hillsboro, Oregon 97123

PROJ NAME:
NORWOOD PUMP STATION AND FORCE MAIN

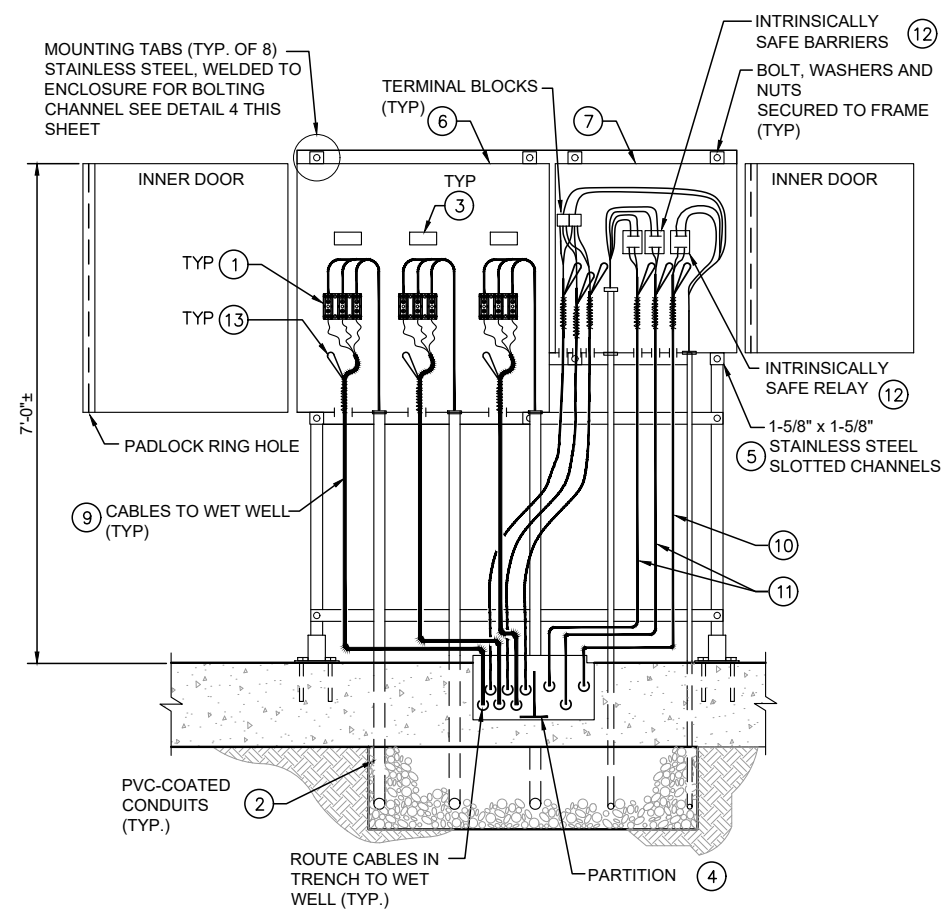
SHEET TITLE:
ELECTRICAL MECHANICAL DETAILS

SHEET: 30 OF: 35
PLOT DATE: JULY 2021
PLC #:
CWS PROJ #: 7056

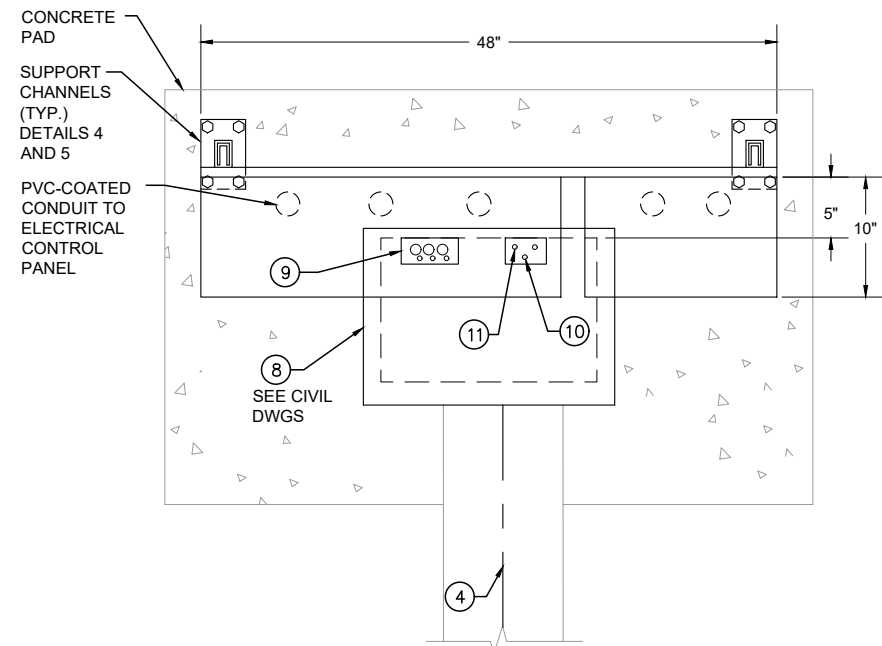
DWG #:
E09



7/16/2021 12:16:26 PM - C:\USERS\JLITE\DESKTOP\1262101 - NORWOOD PUMP STATION\NORWOOD PUMP STATION SHEETS\10 ELECTRICAL\DISCONNECT AIR-GAP JUNCTION BOX DETAIL.DWG - JORDAN LUTE



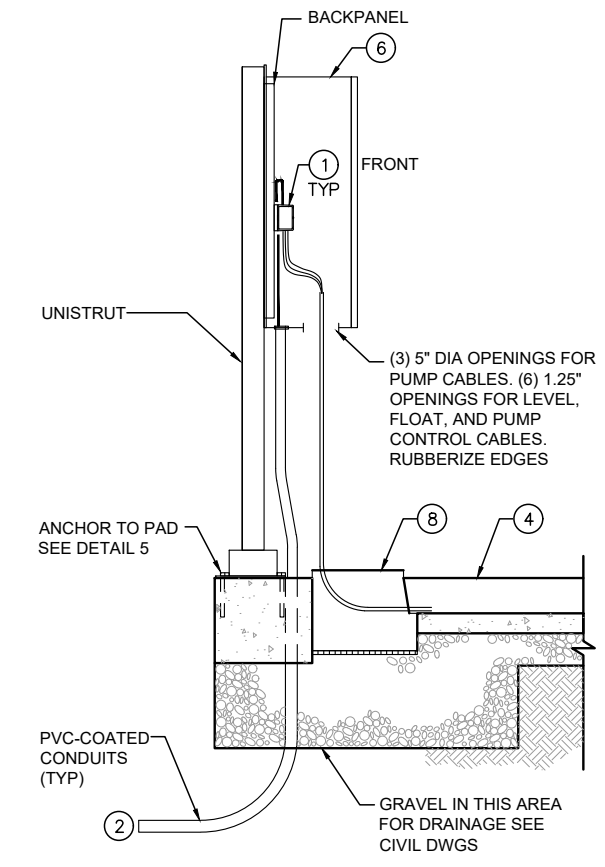
1 FRONT VIEW DETAIL
NTS



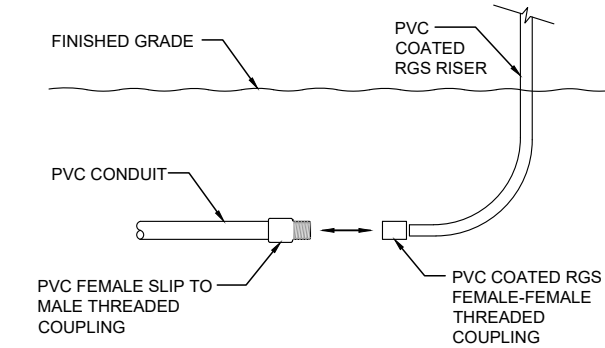
2 PLAN VIEW DETAIL
NTS



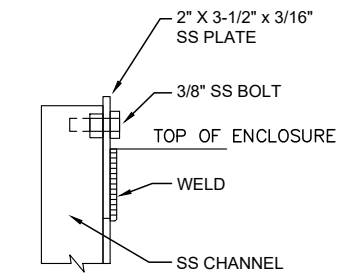
2a DISCONNECT AIR-GAP BOX
NTS



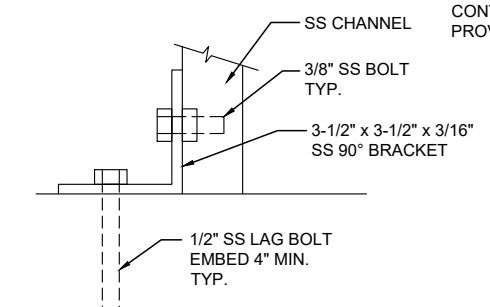
3 SIDE VIEW DETAIL
NTS



4 CONDUIT TRANSITION DETAIL
NTS



4a CONNECTION DETAIL
NTS



4b MOUNTING DETAIL
NTS

| KEY NOTES | | |
|-----------|---------------------------|---|
| ITEM | DESCRIPTIONS | COMMENTS |
| 1 | POWER DISTRIBUTION BLOCK | POWER DISTRIBUTION BLOCK WITH LUGS SIZED FOR MANUFACTURER'S PROVIDED POWER CABLING. |
| 2 | CONDUITS | CONDUITS TO VFD AND BACKUP CONTROL PANEL. ROUTE CONDUITS DOWN INTO GROUND WITHOUT FITTINGS. |
| 3 | NAMEPLATES | INSTALL EQUIPMENT NAMEPLATES ABOVE EACH POWER DISTRIBUTION BLOCK FOR EACH PUMP. |
| 4 | CABLE CHANNEL | CABLE CHANNEL TO WET WELL OLDCASTLE MOULDED PRODUCTS MODEL NO 128 PLASTIBETON CHANNEL SYSTEM COMPLETE WITH REMOVABLE COVER BUILT-IN SLOPE 1" HEAVY DUTY H-12 LOADING AND SMC DIVIDER TO PARTITION POWER CABLES FROM INSTRUMENTATION CABLES. SEE CIVIL DRAWINGS FOR PENETRATION TO WETWELL DETAIL. |
| 5 | HARDWARE | ALL HARDWARE, FRAMEWORK, ETC., SHALL BE STAINLESS STEEL. |
| 6 | AIR GAP POWER ENCLOSURE | 30"H x 30"W x 10"D (MIN), 14GA, 304 STAINLESS ENCLOSURE WITH PADLOCK LOCKING RING FOR DOOR ATTACHED TO ENCLOSURE DOOR SHALL OPEN GREATER THAN 90 DEG. INSET SWING DOOR 2" FOR DRIP LIP. |
| 7 | AIR GAP CONTROL ENCLOSURE | 20"H x 16"W x 10"D (MIN), 14GA, 304 STAINLESS ENCLOSURE WITH PADLOCK LOCKING RING FOR DOOR ATTACHED TO ENCLOSURE DOOR SHALL OPEN GREATER THAN 90 DEG. INSET SWING DOOR 2" FOR DRIP LIP. |
| 8 | HANDHOLE | HANDHOLE. 18"L x 12"W x 12"D. 2" THICK, MIN. WITH REINFORCING WIRE MESH, AND REMOVABLE COVER. NOTCH LID TO SEPARATE POWER AND CONTROL CABLES. |
| 9 | PUMP CABLES | VENDOR CABLES (POWER AND CONTROL) TO SUBMERSIBLE PUMPS LOCATED IN WET WELL. |
| 10 | FLOAT CABLE | VENDOR CABLES TO FLOAT SWITCH MOUNTED IN WETWELL. |
| 11 | LEVEL CABLES | VENDOR CABLES TO LEVEL TRANSDUCERS MOUNTED IN WETWELL. |
| 12 | I.S. SPACE | ENSURE SPACING OR PROVIDE BARRIER TO MAINTAIN DISTANCE FROM INTRINSICALLY SAFE WIRING TO OTHER WIRING PER NEC. |
| 13 | CORD GRIPS | PROVIDE J-HOOKS & KELLUMS GRIPS TO SUPPORT ALL FLEXIBLE CORDS. |

GENERAL NOTES:
A. RECEPTACLES AND MATCHING PLUGS FOR PUMP CONTROL CABLES SHALL MATCH THE ACTUAL PUMP PROVIDED CONTROL VOLTAGE.



| | |
|----------|----------------------|
| DRN: JL | ORIG DATE: JULY 2021 |
| DSN: MB | DWG #: E10 |
| CHK: MB | CAD FILE #: |
| APPD: BP | SCALE: |

THIS BAR IS ONE INCH WHEN DRAWING IS FULL SCALE.

| REV # | DATE | DRN | APPD | DESCRIPTION |
|-------|------|-----|------|-------------|
| | | | | |



PROJ NAME: NORWOOD PUMP STATION AND FORCE MAIN

SHEET TITLE: ELECTRICAL
DISCONNECT AIR-GAP JUNCTION BOX DETAIL

| | |
|----------------------|--------|
| SHEET: 31 OF: 35 | DWG #: |
| PLOT DATE: JULY 2021 | E10 |
| PLC #: | |
| CWS PROJ #: 7056 | |



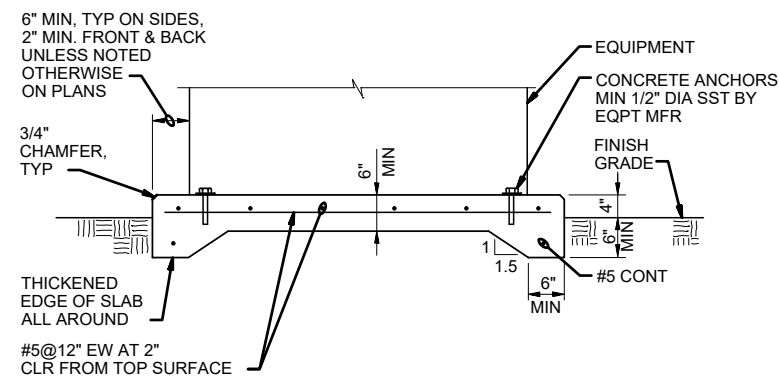
7/16/2021 12:16:32 PM - C:\USERS\JLITE\DESKTOP\1282101 - NORWOOD PUMP STATION\NORWOOD PUMP STATION\SHEETS\E11 ELECTRICAL DETAILS.DWG - JORDAN LUTE

| CONDUIT ID NO. | CONDUIT | | | DESCRIPTION | CONDUCTORS | | COMMENTS |
|----------------|---------|----|------|-------------|------------------------------|---------------------------------|----------|
| | FROM | TO | SIZE | | FROM | TO | |
| | P-PGE1 | - | - | | - | - | |
| P-PGE2 | - | - | - | - | UTILITY TRANSFORMER POWER | METER ENCLOSURE | - |
| P-MAIN | - | - | - | - | METER ENCLOSURE | MAIN SERVICE BREAKER | - |
| P-ATS | - | - | - | - | MAIN SERVICE BREAKER | AUTOMATIC TRANSFER SWITCH | - |
| P-GEN1 | - | - | - | - | AUTOMATIC TRANSFER SWITCH | STANDBY GENERATOR 40KW | - |
| P-ENCL | - | - | - | - | AUTOMATIC TRANSFER SWITCH | POWER DISTRIBUTION BLOCK | - |
| P-MPZ | - | - | - | - | AUTOMATIC TRANSFER SWITCH | MINI-POWER ZONE PRIMARY BREAKER | - |
| P-PUMP1 | - | - | - | - | FVNR ACROSS THE LINE STARTER | PUMP SUBMERSIBLE MOTOR | - |
| P-PUMP2 | - | - | - | - | FVNR ACROSS THE LINE STARTER | PUMP SUBMERSIBLE MOTOR | - |

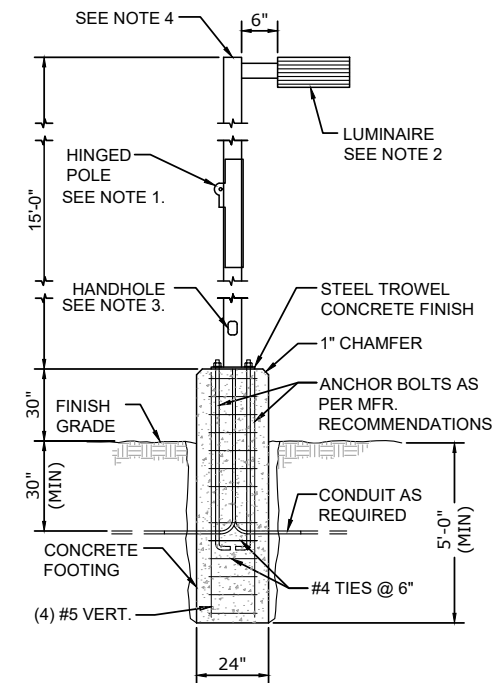
NOTES:

KEYED NOTES:

- ① PROVIDE SEAL-OFF FOR CLASS 1, DIV 2 AREA
- ② PROVIDE JUNCTION BOX WITH 1/2" DRAIN HOLE IN BOTTOM FOR CABLES TO FLOW ELEMENT MOUNTED BELOW FLOW ELEMENT ELEVATION.



CONCRETE PAD ②
NTS



NOTES:

1. HINGED LIGHT POLE: PROVIDE 15-FOOT HINGED STEEL 4" NON TAPERED SQUARE POLE WITH EXTERNAL HINGE, 55,000 PSI YIELD STRENGTH, MINIMUM. PROVIDE WITH REMOVABLE WINCH, MATCHING POLE TOP FOR LUMINAIRE AND FULL BASE COVER, POSE SHALL BE DARK BRONZE, CONFIRM COLOR WITH OWNER'S REPRESENTATIVE PRIOR TO PURCHASE, PROVIDE VALMONT DSF10 OR APPROVED EQUAL.
2. POLE MOUNTED SITE AREA LIGHT: PROVIDE POLE MOUNT LUMINAIRE, LOW PROFILE DIE-CAST ALUMINUM, REFLECTED LENS, 80W LED ARRAY, 5000K COLOR TEMPERATURE, TYPE IV DISTRIBUTION, RECTANGULAR ARM, WITH INTEGRAL SURGE PROTECTION. POLE SHALL BE DARK BRONZE, CONFIRM COLOR WITH OWNER'S REPRESENTATIVE PRIOR TO PURCHASE. PROVIDE BEACON VIPER, VPS 36L-80-5K7-4-UNV-A-DB, OR APPROVED EQUAL.
3. PROVIDE 20A RATED GFCI RECEPTACLE AT LIGHT POLE WITH IN-USE WEATHERPROOF COVER.
4. TENON MOUNT FOR FIXTURE. SIZE TO SUIT INSTALLATION.

TYPICAL LIGHT POLE BASE ③
NTS



| | |
|----------|----------------------|
| DRN: JL | ORIG DATE: JULY 2021 |
| DSN: MB | DWG #: E11 |
| CHK: MB | CAD FILE #: |
| APPD: BP | SCALE: |

THIS BAR IS ONE INCH WHEN DRAWING IS FULL SCALE.

| REV # | DATE | DRN | APPD | DESCRIPTION |
|-------|------|-----|------|-------------|
| | | | | |



PROJ NAME: NORWOOD PUMP STATION AND FORCE MAIN

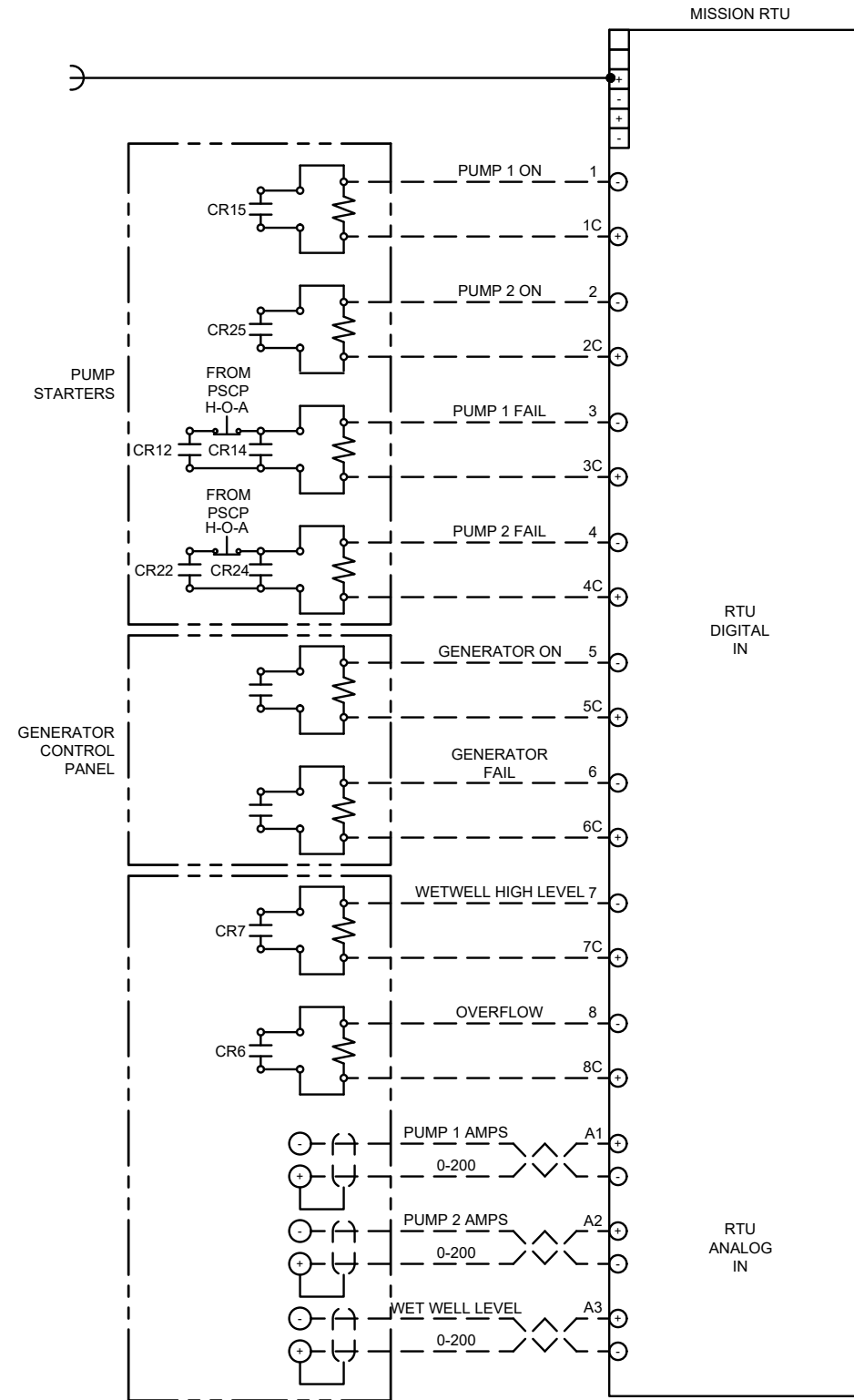
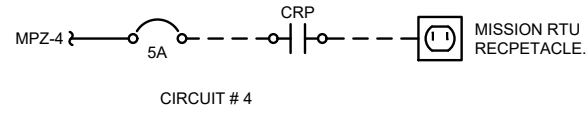
SHEET TITLE: ELECTRICAL DETAILS

| |
|----------------------|
| SHEET: 32 OF: 35 |
| PLOT DATE: JULY 2021 |
| PLC #: |
| CWS PROJ #: 7056 |

DWG #: E11



7/16/2021 12:16:36 PM - C:\USERS\JLITE\DESKTOP\TOP12821\01 - NORWOOD PUMP STATION\NORWOOD PUMP STATION\SHEETS\E12 MISSION RTU INTERCONNECTION DIAGRAM.DWG - JORDAN LUTE



NOTE 1:
THE CONTACT (H-O-A) SHALL
OPEN WHEN H-O-A "A" SWITCH TO OFF POSITION



| | |
|----------|----------------------|
| DRN: JL | ORIG DATE: JULY 2021 |
| DSN: MB | DWG #: E12 |
| CHK: MB | CAD FILE #: |
| APPD: BP | SCALE: |

THIS BAR IS ONE INCH
WHEN DRAWING IS FULL
SCALE.

| REV # | DATE | DRN | APPD | DESCRIPTION |
|-------|------|-----|------|-------------|
| | | | | |
| | | | | |
| | | | | |



PROJ NAME:
**NORWOOD PUMP STATION
AND FORCE MAIN**

SHEET TITLE:
**ELECTRICAL
DETAILS**

SHEET: 33 OF: 35
PLOT DATE: JULY 2021
PLC #:
CWS PROJ #: 7056

DWG #:
E12

