ENGINEERING PLANS

FOR

WATER RESILIENCY PROJECT

PHASE 1 - SEISMIC IMPROVEMENTS

CITY OF CANNON BEACH, OR 97110

PREPARED FOR:
CITY OF CANNON BEACH
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VICINITY MAP
NOT TO SCALE

LOCATION MAP
NOT TO SCALE

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PREPARED BY:

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PROJECT NUMBER: 20198.3

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CITY OF CANNON BEACH

BY _____ DATE _____
PUBLIC WORKS DIRECTOR

BY _____ DATE _____
CITY ENGINEER

BY _____ DATE _____
COMMUNITY DEVELOPMENT DIRECTOR

BY _____ DATE _____
FIRE MARSHAL

REVISIONS:

BID PLAN SET

PROJECT INFO: 20198.3 - WATER RESILIENCY PROJECT PHASE 1 - SEISMIC IMPROVEMENTS

PROJECT NOTES

UTILITY IMPROVEMENTS TO THE CITY'S WATERMAIN. IMPROVEMENTS WILL BE SITE SPECIFIC AND LIMITED TO A SMALL AREA OVER THE WATERMAIN TO ADD SEISMIC VALVES AND POWER TO OPERATE THE VALVES. THE WORK WILL ENTAIL PLACING A VAULT OR MANHOLE STRUCTURE OVER THE EXISTING WATERMAIN TO BE ABLE TO HOUSE AND ADD THE NEEDED SEISMIC VALVES TO THE SYSTEM. IN ADDITION TO THE VAULTS AND MANHOLES ROUGHLY 20' OF PIPE WILL BE REPLACED. THERE ARE A COUPLE PLACES WHERE ASBESTOS CONCRETE PIPE WILL BE REMOVED AND REPLACED WITH A PLASTIC C900 PIPE.

PARCEL NO.(S): VARIES - CITY OF CANNON BEACH

SITE ADDRESS: VARIES - CITY OF CANNON BEACH

QUARTER SECTION: VARIES - CITY OF CANNON BEACH

COUNTY: CLATSOP

CRITICAL AREAS:

1. NO CRITICAL AREAS ARE WITHIN THE CONSTRUCTION LIMITS OF THE PROJECT.

CONTACT INFORMATION

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GENERAL ABBREVIATIONS

(E)	EXISTING
C	CONCRETE
CB	CATCH BASIN
CL	CENTERLINE
CNS	COMPACTED NATIVE SOIL
CO	CLEAN OUT
CR	CURB RETURN
D	DIRT / DRAINAGE
DCDA	DOUBLE CHECK DETECTOR ASSEMBLY
FG	FINISHED GRADE
FH	FIRE HYDRANT
FL	FLOW LINE
FM	FORCE MAIN
G	NATURAL GAS (LOW PRESSURE)
GB	GRADE BREAK
HP	HIGH POINT
LF	LINEAR FOOT
LP	LOW POINT
MG	NATURAL GAS (MEDIUM PRESSURE)
MG	MATCH EXISTING GRADE
MH	MANHOLE
NS	NATIVE SOIL
NTS	NOT TO SCALE
P	PAVEMENT
PC	POINT OF CURVATURE
POC	POINT OF CONNECTION
POS	POINT OF SERVICE
PP	POWER POLE
PT	POINT OF TANGENCY
R	RADIUS
ROW	RIGHT OF WAY
S	SLOPE / SANITARY
SAN	SEWER SEWER
SSMH	SANITARY MANHOLE
STA	STATION
STM	STORM DRAIN
STMH	STORM MANHOLE
TBD	TO BE DETERMINED
TBL	TO BE RELOCATED BY RESPECTIVE UTILITY
TBR	TO BE REMOVED BY CONTRACTOR
TC	TOP OF CURB
TOE	TOE OF BANK
TOP	TOP OF BANK
TP	TELEPHONE POLE
U	UNDERGROUND
VIP	VERIFY IN FIELD PRIOR TO CONSTRUCTION
W	WATER MAIN
XFMR	TRANSFORMER

GENERAL PLAN NOTES

1. CONTRACTOR TO VERIFY ALL UTILITY LOCATIONS AND DEPTHS PRIOR TO CONSTRUCTION. A MINIMUM OF TWO FULL BUSINESS DAYS PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL CALL 811 (UTILITY NOTIFICATION CENTER) FOR LOCATION MARK-UP OF EXISTING UTILITIES

2. ALL CONSTRUCTION, MATERIALS, AND WORKMANSHIP SHALL CONFORM TO THE LATEST STANDARDS AND PRACTICES OF CLATSOP COUNTY AND THE LATEST EDITION OF THE "STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION" PREPARED BY OSDOT

3. IN CASE OF A CONFLICT BETWEEN THE REGULATORY STANDARDS OR SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT WILL PREVAIL.

4. ANY CHANGES TO THE DESIGN AND/OR CONSTRUCTION SHALL BE APPROVED BY THE OWNER OR ENGINEER.

5. APPROVAL OF THESE PLANS DOES NOT CONSTITUTE AN APPROVAL OF ANY OTHER CONSTRUCTION NOT SPECIFICALLY SHOWN ON THE PLANS. PLANS FOR STRUCTURES SUCH AS BRIDGES, BUILDINGS, TANKS, VAULTS, ROCKERIES, AND RETAINING WALLS MAY REQUIRE A SEPARATE REVIEW AND APPROVAL BY THE BUILDING DEPARTMENT PRIOR TO CONSTRUCTION.

6. A COPY OF THESE APPROVED PLANS SHALL BE ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS.

7. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL CONSTRUCTION EASEMENTS AND PERMITS NECESSARY TO PERFORM THE WORK.

8. THE CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION STAKING.

9. PUBLIC AND PRIVATE DRAINAGE WAYS SHALL BE PROTECTED FROM POLLUTION. NO MATERIAL IS TO BE DISCHARGED TO OR DEPOSITED IN STORMWATER SYSTEMS THAT MAY RESULT IN VIOLATION OF STATE OR FEDERAL WATER QUALITY STANDARDS.

10. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY SHALL HAVE AN APPROVED PUBLIC RIGHT-OF-WAY WORK PERMIT PRIOR TO ANY CONSTRUCTION ACTIVITY WITHIN THE RIGHT-OF- WAY.

11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE SAFEGUARDS, SAFETY DEVICES, PROTECTIVE EQUIPMENT, FLAGGERS, AND ANY OTHER NEEDED ACTIONS TO PROTECT THE LIFE, HEALTH, AND SAFETY OF THE PUBLIC, AND TO PROTECT PROPERTY IN CONNECTION WITH THE PERFORMANCE OF WORK COVERED BY THE CONTRACTOR. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST ADOPTED EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) PUBLISHED BY THE U.S. DEPARTMENT OF TRANSPORTATION. TWO-WAY TRAFFIC MUST BE MAINTAINED AT ALL TIMES ON THE ADJACENT PUBLIC STREETS.

12. ANY PUBLIC OR PRIVATE CURB, GUTTER, SIDEWALK, OR ASPHALT DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED TO CITY/COUNTY STANDARDS AND PRACTICES.

13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE INTEGRITY OF ADJACENT UTILITIES WHICH MAY INCLUDE, BUT ARE NOT LIMITED TO, WATER, SANITARY SEWER, STORMWATER, POWER, TELEPHONE, CABLE TV, GAS, IRRIGATION, AND STREET LIGHTING. THE CONTRACTOR SHALL NOTIFY RESIDENTS AND BUSINESSES 48 HOURS IN ADVANCE OF ANY WORK AFFECTING ACCESS OR SERVICE AND SHALL MINIMIZE INTERRUPTIONS TO DRIVEWAYS FOR RESIDENTS AND BUSINESSES ADJACENT TO THE PROJECT.

14. ALL LAWN AND VEGETATED AREAS DISTURBED WILL BE RESTORED TO ORIGINAL CONDITION. ANY DISTURBANCE OR DAMAGE TO OTHER PROPERTY ON ADJACENT PARCELS OR IN THE PUBLIC RIGHT OF WAY SHALL ALSO BE REPAIRED OR RESTORED TO ORIGINAL CONDITION.

15. ALL MATERIALS AND METHODS OF CONSTRUCTION AND INSTALLATION FOR WATER, SANITARY SEWER, AND STORM FACILITIES SHALL CONFORM TO THE CITY OF CANNON BEACH DESIGN GUIDELINES. CONSTRUCTION SHALL BE AS PER THE MOST CURRENT STANDARD DETAIL CONTAINED THEREIN.

16. THE TYPES, LOCATIONS, SIZES AND/OR DEPTHS OF EXISTING UNDERGROUND UTILITIES AND STRUCTURES AS SHOWN ON THE DRAWINGS ARE APPROXIMATE AND WERE OBTAINED FROM SOURCES OF VARYING RELIABILITY. THE CONTRACTOR IS CAUTIONED THAT ONLY ACTUAL EXCAVATION WILL REVEAL THE TYPES, EXTENT, SIZES, LOCATIONS, AND DEPTHS OF UTILITIES. A REASONABLE EFFORT HAS BEEN MADE TO LOCATE AND DELINEATE ALL KNOWN UNDERGROUND UTILITIES. THE CONTRACTOR SHALL VERIFY THE LOCATION OF AND PROVIDE PROTECTION FOR ALL UTILITIES AND STRUCTURES.

17. EXISTING UTILITIES DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR OR BY THE UTILITY.

18. WHERE THE CONTRACTOR MUST RELOCATE WATER AND GAS UTILITIES, SHUTDOWN SHALL ONLY BE ACCOMPLISHED BY THE CITY OR UTILITY PURVEYOR.

19. ALL OPEN TRENCHES THAT IMPACT PUBLIC ACCESS OR OTHER PROJECT WORK ACCESS OUTSIDE OF THIS PROJECTS SITE, MUST BE STEEL PLATED OR BACKFILLED AND PAVED WITH AT LEAST 2" OF COLD MIX TO ADJACENT EXISTING GRADE AT THE END OF EACH WORKDAY.

20. NOTIFY ADJACENT RESIDENCES AT LEAST ONE DAY PRIOR TO COMMENCING WORK ADJACENT TO THEIR RESIDENCES.

21. SAWCUT ALL PAVEMENT JOINT LINES. WHERE THERE IS A PREVIOUS PAVING EDGE OR CRACK WITHIN 5' OF THE SAWCUT EDGE, REMOVE THE PAVEMENT TO THE PREVIOUS PAVING EDGE.

22. THE CONTRACTOR SHALL COMPLY WITH OREGON REQUIREMENTS FOR TRENCH SAFETY.

23. THE CONTRACTOR SHALL REPLACE ALL SURVEY MONUMENTS THAT ARE DESTROYED BY THE CONSTRUCTION.

24. ALL WATER PIPING SHALL BE CONSTRUCTED WITH 3' MINIMUM COVER, 1' VERTICAL SEPARATION BETWEEN UTILITIES, AND A MINIMUM OF 10' HORIZONTAL SEPARATION AND 18" ABOVE SEWER LINES, UNLESS OTHERWISE NOTED.

25. THE CONTRACTOR SHALL RESTORE PAVEMENT AND LANDSCAPING DISTURBED BY THE CONSTRUCTION TO THE PREVIOUSLY UNDISTURBED CONDITION.

26. CONTRACTOR TO DISPOSE OF TREES, SHRUBS, SOD AND OTHER DEBRIS IN A PROPER MANNER OF THE CONTRACTOR'S CHOOSING.

27. CONTRACTOR IS RESPONSIBLE FOR KEEPING ALL ROADS, SIDEWALK, AND TRAILS CLEAN AND CLEAR FROM CONSTRUCTION MATERIAL AND DEBRIS.

GENERAL CIVIL NOTES

SURVEY
TOPOGRAPHIC SURVEY BY: ONION PEAK
HORIZONTAL DATUM: OREGON STATE PLANES NORTH ZONE
ELEVATION DATUM: NAD 83

STORM DRAINAGE:
ON-SITE STORM SEWER IMPROVEMENTS SHALL CONFORM TO THE LATEST VERSION OF THE DEQ, AND CONFORM TO ODOT SPECIFICATIONS WHERE NOTED.

THE CONTRACTOR SHALL MAINTAIN 6" MINIMUM VERTICAL AND 3' MINIMUM HORIZONTAL CLEARANCE (OUTSIDE SURFACES) BETWEEN STORM DRAIN PIPES AND OTHER UTILITY PIPES AND CONDUITS. FOR CROSSINGS OF SANITARY SEWER LINES, THE OREGON HEALTH AUTHORITY CRITERIA APPLY.

STORM DRAIN PIPE, BENDS, AND FITTINGS SHALL BE PVC, ASTM D 3034, SDR 35, OR SMOOTH INTERIOR, HIGH DENSITY POLYETHYLENE CORRUGATED PIPE AASHTO M252 OR M294, TYPE S AS PRODUCED AND SPECIFIED BY ADS, PRODUCT NAME N12, OR APPROVED EQUAL. ALL STORM SEWER FITTINGS AND PIPE JOINTS SHALL BE GASKETED.

PERFORATED PIPE SHALL BE ADS SINGLE WALL PERFORATED PIPE WITH SOCK OR APPROVED EQUAL.

ALL STORM SEWER PIPE SHALL HAVE A MINIMUM 12" DIAMETER WITHIN ROADWAY

ALL ON-SITE STORMWATER FACILITIES SHALL BE PRIVATELY MAINTAINED BY THE CURRENT OR FUTURE PROPERTY OWNER(S).

ALL VAULT, UTILITY BOX, INLET, MANHOLE AND CLEANOUT RIMS SHALL BE ADJUSTED TO FINISH GRADE UNLESS OTHERWISE NOTED.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROTECT AND MAINTAIN ANY STORM SYSTEM PIPING TO EXISTING DRAINAGE APPURTENANCES TO REMAIN.

SANITARY SEWER:
ON-SITE (PRIVATE) SANITARY SEWER IMPROVEMENTS SHALL CONFORM TO THE LATEST VERSION OF THE DEQ, AND ODOT SPECIFICATIONS WHERE NOTED AND THE CITY OF CANNON BEACH GENERAL REQUIREMENTS.

SANITARY SEWER PIPE SHALL BE POLYVINYL CHLORIDE (PVC) AND CONFORM TO ASTM D3034, SDR35.

CONTRACTOR SHALL COORDINATE ALL BUILDING SANITARY CONNECTIONS WITH PLUMBING PLAN PRIOR TO CONSTRUCTION.

CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS AND INSPECTIONS.

WATER:
ALL WATERMAIN INSTALLATION, DISINFECTION AND TESTING SHALL COMPLY WITH ODOT STANDARD SPECIFICATIONS. UNIFORM PLUMBING CODE, AND CITY OF CANNON BEACH WATER DESIGN AND CONSTRUCTION STANDARDS.

STANDARD DETAIL STATEMENT
ALL MATERIALS AND METHODS OF CONSTRUCTION AND INSTALLATION FOR WATER, SEWER, STORM WATER FACILITIES, AND EROSION CONTROL MEASURES, SHALL CONFORM TO CITY OF CANNON BEACH ENGINEERING SERVICES "TOLEDO DEVELOPMENT GUIDELINES." CONSTRUCTION SHALL BE AS PER THE MOST CURRENT STANDARD DETAIL CONTAINED THEREIN.

GRADING & EROSION CONTROL NOTES

NO GRADING WITHIN 2' OF ADJACENT PARCELS PER IBC.

STRIP ORGANICS PER GEOTECH REPORT. RE-DEPOSIT ABOVE COMPACTED FILL TO A MAX DEPTH OF 6" (12" IN LANDSCAPE AREAS).

FINISH GRADE CONTOURS ARE TO TOP OF FINISHED SURFACE IN IMPERVIOUS AREAS AND TOP OF REPLACED STRIPPINGS IN PERVIOUS AREAS.

STRIPPINGS TO REMAIN ON SITE AND BE RE-DISTRIBUTED OVER LANDSCAPE AREAS AFTER ALL GRADING ACTIVITIES ARE COMPLETED. CONTRACTOR SHALL BE RESPONSIBLE FOR HAUL-OFF OF EXCESS MATERIAL.

CUT AND FILL QUANTITIES ARE BASED ON GENERAL SITE GRADING ESTABLISHED FROM THE STRIPPED GRADE TO THE FINISHED PROPOSED SUBGRADE AND TRENCH SPOILS. THESE VOLUMES DO NOT TAKE INTO ACCOUNT ANY UNKNOWN SOIL DEPOSITS OR OVER-EXCAVATION OF NON-ORGANIC MATERIALS THAT ARE DISCOVERED ON SITE, NOR WET WEATHER CONDITIONS. CONTRACTOR SHALL BE RESPONSIBLE TO PRODUCE INDEPENDENT GRADING VOLUMES AS WELL AS ACCOUNT FOR OBSERVATION OF MEASURES DIRECTED WITHIN THE GEOTECHNICAL REPORT OR AS DIRECTED BY THE GEOTECHNICAL ENGINEER DURING THE COURSE OF CONSTRUCTION.

PRIOR TO ACCEPTANCE OF THE COMPACTED SUB-GRADE, THE CONTRACTOR SHALL PROVIDE A TEST ROLL IN THE PRESENCE OF OWNER / CITY REPRESENTATIVE UNLESS OTHERWISE APPROVED BY THE GEOTECHNICAL ENGINEER.

AMERICANS WITH DISABILITIES ACT (ADA) NOTES

1. CONTRACTORS SHALL EXERCISE APPROPRIATE CARE AND PRECISION IN CONSTRUCTION OF ADA ACCESSIBLE COMPONENTS ON THE PROJECT, THE ADA COMPONENTS MUST COMPLY WITH ALL LOCAL, STATE, AND FEDERAL ACCESSIBILITY RULES, CODES, AND REGULATIONS.

2. FINISHED SURFACES ALONG THE ACCESSIBLE PATH OF TRAVEL FROM PARKING STALLS, PUBLIC TRANSPORTATION, AND PEDESTRIAN ACCESS WAYS TO THE POINT(S) OF ACCESSIBLE BUILDING INGRESS AND EGRESS SHALL COMPLY WITH ADA CODE REQUIREMENTS.

3. PARKING SPACE AND AISLE SLOPE SHALL NOT EXCEED 1:48 (1/4" PER FOOT OR NOMINALLY 2.0%) IN ANY DIRECTION.

4. CURB RAMP SLOPE SHALL NOT EXCEED 1:12 (8.3%) AND RAMP LENGTH IS LIMITED TO 15 FEET.

5. LANDINGS SHALL BE PROVIDED AT EACH END OF RAMPS, SHALL HAVE POSITIVE DRAINAGE, AND SHALL NOT EXCEED 1:48 (1/4"PER FOOT OR NOMINALLY 2.0%) IN ANY DIRECTION.

6. PATH OF TRAVEL ALONG ACCESSIBLE ROUTE SHALL PROVIDE A MINIMUM OF 36 INCH UNOBSTRUCTED WIDTH OF TRAVEL. SLOPE SHALL BE NO GREATER THAN 1:20 (5.0% OR 5/8" PER FOOT) IN THE DIRECTION OF TRAVEL, AND SHALL NOT EXCEED 1:48 (1/4" PER FOOT OR NOMINALLY 2.0%) IN CROSS SLOPE. WHERE PATH OF TRAVEL BE GREATER THAN 1:20 (5.0%), AN ACCESSIBLE RAMP WITH A MAXIMUM SLOPE OF 1:12 (8.3%) FOR A MAXIMUM DISTANCE OF 30 FEET SHALL BE PROVIDED INCLUDING HANDRAILS. THE RAMP SHALL HAVE ACCESSIBLE HAND RAILS AND LANDINGS ON EACH END WITH A SLOPE IN ANY DIRECTION NOT EXCEEDING 1:48 (1/4" PER FOOT OR NOMINALLY 2.0%).

7. DOORWAYS SHALL HAVE A LANDING AREA ON THE EXTERIOR SIDE OF THE DOOR THAT IS SLOPED NO MORE THAN 1:48 (1/4" PER FOOT OR NOMINALLY 2.0%) FOR POSITIVE DRAINAGE. THIS LANDING AREA SHALL BE NO LESS THAN 60 INCHES (5 FEET) LONG, EXCEPT HERE OTHERWSE PERMITTED BY ACCESSIBILITY STANDARDS FOR ALTERNATIVE DOORWAY OPENING CONDITIONS AND APPROVED BY THE OWNER'S REPRESENTATIVE.

8. WHERE PEDESTRIAN ACCESS ROUTES ARE CONTAINED WITHIN A STREET OR HIGHWAY RIGHT-OF-WAY, THE GRADE OF THE PEDESTRIAN ACCESS ROUTE IS PERMITTED TO EQUAL THE GENERAL GRADE ESTABLISHED FOR THE ADJACENT STREET OR HIGHWAY, EXCEPT THAT WHERE PEDESTRIAN ACCESS ROUTES ARE CONTAINED WITHIN PEDESTRIAN STREET CROSSINGS A MAXIMUM GRADE OF 5 PERCENT IS REQUIRED. (EXCERPT FROM PROWAG)

GENERAL FIRE NOTES

1. GENERAL FIRE SAFETY PRECAUTIONS SHALL BE MAINTAINED, IN ACCORDANCE WITH CHAPTER 33 OF THE INTERNATIONAL FIRE CODE; FIRE SAFETY DURING CONSTRUCTION

2. ALL WORK SUBJECT TO FIELD INSPECTION AND CORRECTION(S) AS IDENTIFIED AT THE TIME OF THE ON-SITE INSPECTION; ALL WORK SHALL BE COMPLIANT WITH THE APPLICABLE STANDARDS AND CODES; TO INCLUDE THE ADOPTED EDITION OF THE INTERNATIONAL FIRE CODE AND THE CITY'S MUNICIPAL CODE.

3. ALL FIRE ALARM AND FIRE SPRINKLERS SHALL BE SUBMITTED SEPARATELY AND DIRECTLY TO THE FIRE MARSHAL.

4. MODIFICATIONS FOR FUTURE TENANT IMPROVEMENT(S) MAY REQUIRE AN ALTERNATE PLANS RE-SUBMITTAL.

5. APPENDIX D FOR FIRE APPARATUS ACCESS ROADSALL ON-SITE PRIVATE UNDERGROUND FIRE SUPPRESSION WATER SUPPLY SHALL BE SUBMITTED TO THE FIRE MARSHAL (THIS INLCUDES PRIVATE HYDRANTS, UNDERGROUND FOR FDC'S AND FIRE SPRINKLER UNDERGROUND CONNECTIONS).

6. IFC APPENDIX D FIRE APPARATUS ACCESS ROADS. WHERE HYDRANTS ARE ON A FIRE APPARATUS ACCESS ROAD, THE MINIMUM WITH OF THE ROAD SHALL BE 26 FEET FOR A DISTANCE OF 20 FEET; 10 FEET IN EITHER DIRECTION.

7. IFC 503.3 MARKING WHERE REQUIRED BY THE FIRE CODE OFFICIAL, APPROVED SIGNS OR OTHER APPROVED NOTICES OR MARKINGS THAT INCLUDE THE WORDS NO PARKING FIRE LANE SHALL BE PROVIDED FOR FIRE APPARATUS ACCESS ROADS TO IDENTIFY SUCH ROADS OR PROHIBIT THE OBSTRUCTION THEREOF. THE MEANS BY WHICH FIRE LANES ARE DESIGNATED SHALL BE MAINTAINED IN A CLEAN AND LEGIBLE CONDITION AT ALL TIMES AND BE REPLACED OR REPAIRED WHEN NECESSARY TO PROVIDE ADEQUATE VISIBILITY.

8. IFC D103.6 FIRE APPARATUS ACCESS PARKING RESTRICTIONS--SIGNS: REQUIRED ROADWAYS MUST HAVE SIGNAGE FOR PARKING RESTRICTIONS AS FOLLOWS: SIGNS FOR NO-PARKING--FIRE LANE SHALL COMPLY WITH A MINIMUM DIMENSION OF 12 INCHES WIDE BY 18 INCHES HIGH AND HAVE RED LETTERS ON A WHITE REFLECTIVE BACKGROUND. SIGN'S SHALL BE PROVIDED ON BOTH SIDES OF ALL STREETS THAT ARE LESS THAN 26 IN WIDTH IN ACCORDANCE WITH LOCAL STANDARDS FOR ACCESS AND FUTURE ENFORCEMENT; SIGNS FOR NO-PARKING MUST BE PROVIDED ON ONE SIDE OF ALL STREETS THAT ARE BETWEEN 26 AND 32 IN WIDTH ACCORDANCE WITH LOCAL STANDARDS FOR ACCESS AND FUTURE ENFORCEMENT.

9. IFC 506 WHERE REQUIRED ACCESS IS RESTRICTED WITH A GATE, AN APPROVED PADLOCK OR KEY SWITCH (FOR ELECTRONIC/AUTOMATED GATES) SHALL BE PROVIDED TO ALLOW FIRE DEPARTMENT ACCESS.

10. IFC 503.1.1 / D102 / D103 ROADWAYS TO ACCESS STRUCTURES: THE PERIMETER OF ALL STRUCTURES MUST BE WITHIN 150 FEET OF AN APPROVED ACCESS ROAD WITH A MINIMUM CLEAR WIDTH OF 20 FEET (26 FEET WHERE A HYDRANT IS LOCATED). BUILDING SHALL BE INSTALLED WITH AUTOMATIC FIRE SPRINKLERS AS AN ALTERNATIVE TO DISTANCE FROM A FIRE ACCESS ROAD.

11. IFC 507.5.4 FIRE PROTECTION WATER SUPPLY: UNOBSTRUCTED ACCESS TO FIRE HYDRANTS SHALL BE MAINTAINED AT ALL TIMES. THE FIRE DEPARTMENT SHALL NOT BE DETERRED OR HINDERED FROM GAINING IMMEDIATE ACCESS TO FIRE PROTECTION EQUIPMENT OR FIRE HYDRANTS REQUIRED ACCESS ROADWAYS AND HYDRANTS SHALL BE SERVICEABLE AND UNOBSTRUCTED PRIOR TO COMBUSTIBLE CONSTRUCTION.

811 Know what's **below.** **Call** before you dig.
CALL 2 BUSINESS DAYS BEFORE YOU DIG.
CAUTION UTILITY INFORMATION IS APPROXIMATE.
VERIFY ALL UTILITIES PRIOR TO CONSTRUCTION.

Revisions:

LINE IS 1" ON FULL SCALE DRAWING

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March 9, 1999
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EXPIRES: 06-30-24

WATER RESILIENCY PROJECT
PHASE 1 - SEISMIC IMPROVEMENTS
CITY OF CANNON BEACH, OR 97110

ENGINEERING PLAN
Issue Date: 7/14/2023

Project Manager TWT
Drawn by TJM
Checked by MRL

CIVIL NOTES AND ABBREVIATIONS

G002

BID PLAN SET

SITE PLAN

- EXISTING BOUNDARY LINE
- EXISTING CONTOUR- MINOR (423)
- EXISTING CONTOUR- MAJOR (420)
- CONSTRUCTION LIMITS
- PROPOSED CONTOUR- MINOR (423)
- PROPOSED CONTOUR- MAJOR (420)
- PROPOSED PROPERTY LINE
- PROPOSED PROJECT BOUNDARY
- R/W — PROPOSED RIGHT OF WAY
- ESMT — PROPOSED EASEMENT LINE
- PROPOSED ROAD CENTERLINE
- PROPOSED CURB AND GUTTER
- PHASE LINE
- PROPOSED BUILDING OUTLINE
- CONSTRUCTION LIMITS
- PHASE LINE
- ACCESSIBLE ROUTE
- X — X — PROPOSED FENCE
- PROPOSED HOUSE
- PROPOSED DRIVE AISLE CENTERLINE
- PAVEMENT MARKING CENTERLINE
- CONCRETE PAVEMENT
- PROPOSED BITUMINOUS PAVEMENT
- EXISTING PAVEMENT TO REMAIN
- PARKING STALLS
- ADA PARKING WITH CURB STOP
- ADA CURB RAMP
- LANDSCAPE ISLAND
- LANDSCAPE STRIP
- TREE - DECIDUOUS
- TREE - CONIFEROUS
- SIGN
- RIGHT / LEFT - TURN ARROW
- DIRECTIONAL - TURN ARROW
- STOP BAR
- SOLID STRIPE
- CROSS WALK
- TRASH ENCLOSURE (D, D, G, R, R, R)
- GATE
- ET — ELECTRICAL BOX / TRANSFORMER
- GUY POLE
- DCVA
- STREET LIGHT
- ELECTRICAL TRANSFORMER

STORM WATER

- PROPOSED CENTERLINE OF DITCH
- STM >>> — PROPOSED STORM WATER
- SD >>> — PROPOSED STORM SUB DRAIN
- DTL — PROPOSED DRAINTILE - POND
- CO — CLEAN OUT
- FLARED END SECTION (FES)
- FLARED END SECTION WITH RIPRAP
- I — INLET / BEEHIVE CB
- INLET / BEEHIVE CB
- STORM WATER CATCH BASIN
- STORM WATER CATCH BASIN MANHOLE
- STORM WATER MANHOLE
- PROPOSED DOWNSPOUT
- STORM FACILITY
- BERM
- STORM DETENTION (CALV'S ?)
- CULVERT - DRIVEWAY
- DTL — DTL — DRAINTILE - POND
- STM >>> — STM >>> — DRAINTILE - BUILDING

SANITARY SEWER

- > SAN > — PROPOSED SANITARY SEWER
- > > — > > — PROPOSED SANITARY SEWER LATERAL
- < < — SANITARY SEWER LATERAL
- FM — PROPOSED SANITARY SEWER FORCEMAIN
- SANITARY SEWER MANHOLE
- SANITARY SEWER CLEAN OUT
- LS — SANITARY SEWER LIFT STATION

WATERMAIN

- FS — FS — FIRE SERVICE
- WATER SERVICE
- PROPOSED WATERLINE LATERAL
- FIRE HYDRANT
- WATER METER
- W — W — PROPOSED WATER MAIN
- THRUST BLOCK
- BLOW OFF VALVE ASSEMBLY
- METER PIT / VAULT

EROSION CONTROL

- SF — PROPOSED SILT FENCE
- INLET PROTECTION
- ROCK CONSTRUCTION ENTRANCE
- BIO ROLL
- BMP C240 — OVERFLOW SEDIMENT TRAP (TYP). SEE DOE STD DETAILS FIGURE 9-4.2.16 AND FIGURE 9-4.2.17, SHEET ED1 — CONCRETE WASH OUT STATION
- SEDIMENT BASIN (BMP)
- STORM DETENTION (CAVFS)
- SB — SOIL BORING
- CONSTRUCTION LIMITS
- SF — PROPOSED SILT FENCE
- SSF — PROPOSED SILT FENCE (HEAVY DUTY)
- FLOW ARROW

WATERMAIN SYMBOLS

- HYDRANT WITH GATE VALVE AND TEE
- HYDRANT - EXISTING
- AIR RELEASE ASSEMBLY
- BLOW-OFF ASSEMBLY
- PLUG
- BLIND FLANGE
- CUT IN WET TAP
- 11.25 DEGREE BEND
- 22.5 DEGREE BEND
- 90 DEGREE BEND
- BUTTERFLY VALVE ACTUATOR

RJ

- RJ CAP
- RJ WITH GATE VALVE
- RJ WITH REDUCER
- RJ WITH ADAPTER
- RJ WITH SLEEVE / COUPLING
- RJ WITH CAP
- RJ WITH CAP AND BLOCKING
- RJ WITH VERTICAL CROSS

MJ

- MJ CAP
- MJ WITH GATE VALVE
- MJ WITH REDUCER
- MJ WITH ADAPTER
- MJ WITH SLEEVE / COUPLING
- MJ WITH CAP
- MJ WITH CAP AND BLOCKING
- MJ x FL - GATE VALVE
- MJ X FL - REDUCER
- MJ WITH VERTICAL CROSS
- MJ CHECK VALVE

FL

- FL - VERTICAL CROSS
- FL - GATE VALVE
- FL - REDUCER

TEES

- TEE - MJ
- TEE - MJ x FL
- TEE - FL x MJ
- TEE - FL
- TEE - FL x RJ
- TEE - RJ x FL
- TEE - RJ
- TEE - MJ CUT IN
- TEE - FL CUT IN
- TEE - RJ CUT IN

CROSS

- CROSS - MJ
- CROSS - MJ x FL
- CROSS - FL x MJ
- CROSS - FL
- CROSS - FL x RJ
- CROSS - RJ x FL
- CROSS - RJ
- CROSS - MJ CUT IN
- CROSS - FL CUT IN
- CROSS - RJ CUT IN

DRY UTILITIES

*POWER AND GAS BY PUBLIC UTILITY PROVIDER

- STREET LIGHTING
- GAS — GAS (G)
- E — E — OVERHEAD ELECTRIC (P)
- UE — UNDERGROUND ELECTRIC (E)
- OT — OVERHEAD TELEPHONE (T)
- UT — UNDERGROUND TELEPHONE
- FO — FIBER OPTIC
- CATV — CABLETELEVISION (C)

LANDSCAPE SYMBOLS

SHRUBS

TREES

- TREE DECIDUOUS
- TREE DECIDUOUS
- TREE DECIDUOUS
- TREE DECIDUOUS
- TREE - CONIFEROUS
- TREE - CONIFEROUS
- TREE - CONIFEROUS
- TREE DECIDUOUS
- TREE - CONIFEROUS
- TREE - GROUP
- TREE DECIDUOUS

SEED - SOD

- SEED MIX - 1
- SEED MIX - 2
- SEED MIX - 3
- SOD
- LANDSCAPE ISLAND
- LANDSCAPE STRIP

DEMOLITION

- CONCRETE REMOVAL
- BITUMINOUS REMOVAL
- TOPSOIL REMOVAL
- CURB & GUTTER REMOVAL
- SAWCUT
- TREE - DECIDUOUS REMOVAL
- TREE - CONIFEROUS REMOVAL

EXISTING

- EXISTING EASEMENT
- EXISTING PROPERTY LINE
- EXISTING CONCRETE
- 50 — 50 — 50 — EXISTING STORM DRAIN
- EXISTING EDGE OF GRAVEL
- EXISTING TREES
- D — EXISTING STORM MANHOLE
- EXISTING POWERPOLE
- WM — EXISTING WATER VALVE / WATER METER

GENERAL ABBREVIATIONS

(E)	EXISTING
C	CONCRETE
CB	CATCH BASIN
CL	CENTERLINE
CNS	COMPACTED NATIVE SOIL
CO	CLEAN OUT
CR	CURB RETURN
D	DIRT / DRAINAGE
FG	FINISHED GRADE
FH	FIRE HYDRANT
FL	FLOW LINE
FM	FORCE MAIN
G	NATURAL GAS (LOW PRESSURE)
GB	GRADE BREAK
HP	HIGH POINT
LF	LINEAR FOOT
LP	LOW POINT
MG	NATURAL GAS (MEDIUM PRESSURE)
MG	MATCH EXISTING GRADE
MH	MANHOLE
NS	NATIVE SOIL
NTS	NOT TO SCALE
P	PAVEMENT
PC	POINT OF CURVATURE
POC	POINT OF CONNECTION
POS	POINT OF SERVICE
PP	POWER POLE
PT	POINT OF TANGENCY
R	RADIUS
ROW	RIGHT OF WAY
S	SLOPE / SANITARY
SAN	SEWER SEWER
SSMH	SANITARY MANHOLE
STA	STATION
STM	STORM DRAIN
STMH	STORM MANHOLE
TBD	TO BE DETERMINED
TBL	TO BE RELOCATED BY RESPECTIVE UTILITY
TBR	TO BE REMOVED BY CONTRACTOR
TC	TOP OF CURB
TOE	TOE OF BANK
TOP	TOP OF BANK
TP	TELEPHONE POLE
U	UNDERGROUND
VIP	VERIFY IN FIELD PRIOR TO CONSTRUCTION
W	WATER MAIN

SITE - ABBREVIATIONS

FFE - FIRST FLOOR FINISH ELEVATION
LLE - LOWER LEVEL FINISH ELEVATION
WO - WALKOUT
LO - LOOKOUT

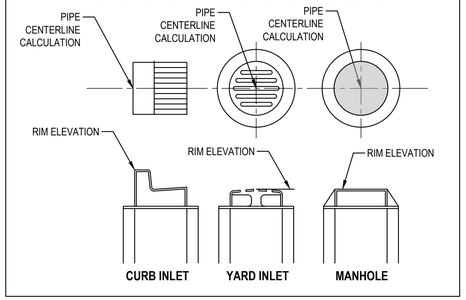
GRADING LEGEND / ABBREVIATIONS

TC: 391.49
FL: 390.99

TW: 391.49
BW: 380.99

GB: GRADE BREAK
LP: LOW POINT
HP: HIGH POINT
FC: FLUSH CURB
MG: MATCH GRADE
FL: FLOWLINE
SW: SIDEWALK
TC: TOP OF CURB
FG: FINISH GRADE (DEFAULT- IF NOT LABELED)

STURCTURE REFERENCE LEGEND



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Revisions:

LINE IS 1" ON FULL SCALE DRAWING

WINDSOR ENGINEERS
Ridgefield, WA
Duluth + Minneapolis, MN
www.windsorengineers.com
Project No: 20198.3

REGISTERED PROFESSIONAL ENGINEER
60239PE
OREGON
Month 9, 1993
TRAVIS W. TORMANEN
EXPIRES: 06-30-24

WATER RESILIENCY PROJECT
PHASE 1 - SEISMIC IMPROVEMENTS
CITY OF CANNON BEACH, OR 97110

ENGINEERING PLAN
Issue Date: 7/14/2023

Project Manager TWT
Drawn by TJM
Checked by MRL

LEGENDS

G003

BID PLAN SET

STATE HIGHWAY 101

EXISTING GENERATOR

FUTURE ISOLATION VALVE 1

EXISTING GENERATOR

MATCHLINE SEE SHEET C101

NORTH RESERVOIR SEE SHEET C105

ECOLA STATE PARK ROAD

WEST 5TH STREET

WEST 3RD STREET

WEST 2ND STREET

EXISTING GENERATOR

0 200' 400'

N

KEY MAP

Scale: NTS

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KEY PLAN - NORTH

G004

BID PLAN SET

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KEY PLAN - CENTER

G005

BID PLAN SET

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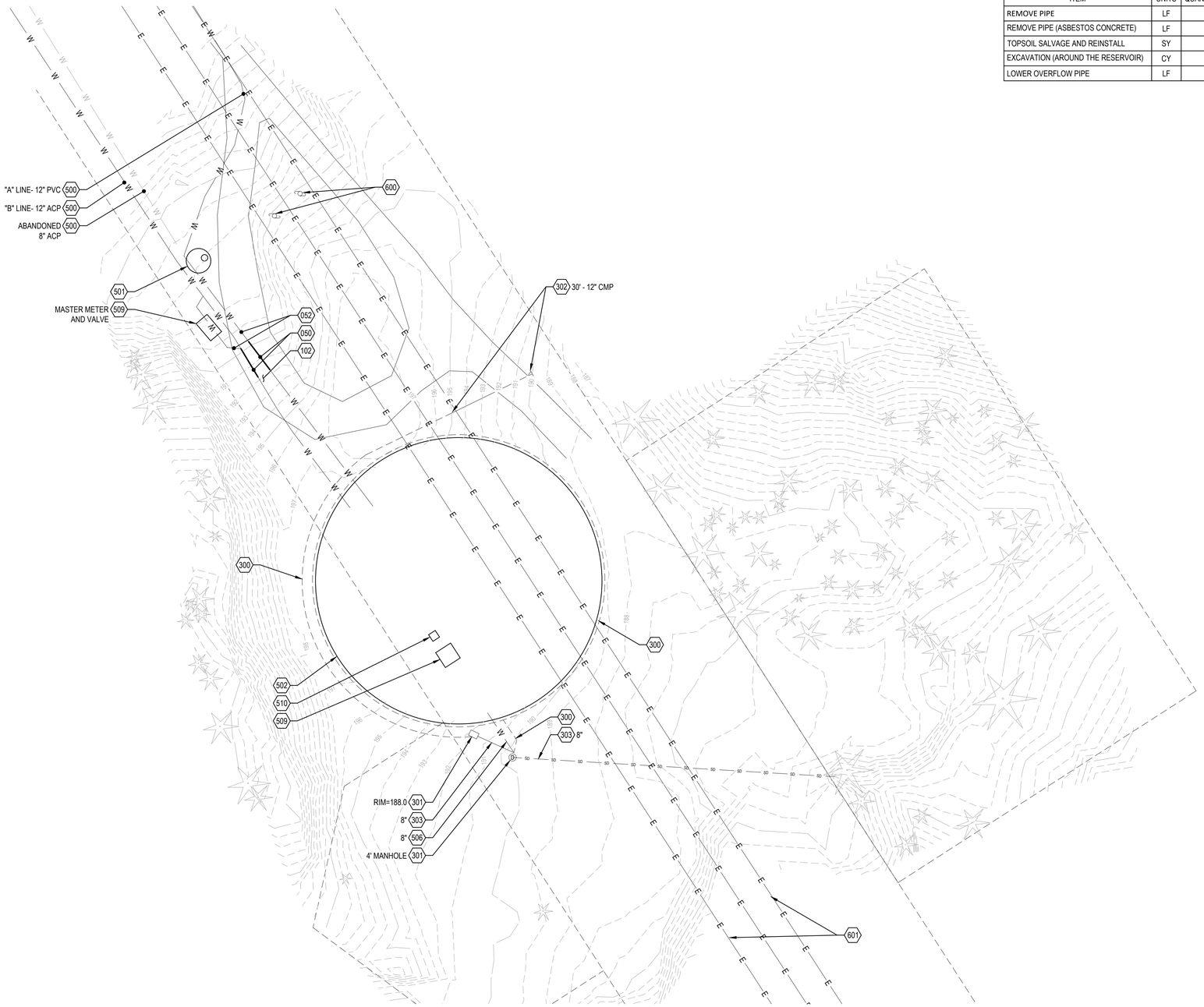
KEY PLAN - SOUTH

G006

BID PLAN SET



PLAN
SCALE: 1" = 20'

0 20' 40'

N

MAIN RESERVOIR QUANTITIES		
ITEM	UNITS	QUANTITY
REMOVE PIPE	LF	0
REMOVE PIPE (ASBESTOS CONCRETE)	LF	40
TOPSOIL SALVAGE AND REINSTALL	SY	1050
EXCAVATION (AROUND THE RESERVOIR)	CY	20
LOWER OVERFLOW PIPE	LF	3

050 DEMOLITION

- 050 REMOVE PIPE AS NEEDED TO INSTALL NEW VAULTS, FITTINGS AND VALVES. SEE SITE PLANS AND DETAILS FOR PROPOSED EQUIPMENT.
- 051 SAWCUTFULL DEPTH AND REMOVE PAVEING
- 052 POTHOLE TO LOCATE EXISTING PIPES PRIOR TO BEGINNING CONSTRUCTION- SHOWN LOCATIONS ARE BASED ON RECORD PLANS AND FIELD LOCATES
- 053 REMOVE EXISING VAULT, VALVES, METERS, FITTINGS AND PIPE.
- 054 CEARING AND GRUBBING AS NEEDED FOR NEW POWER

100 SITE PLAN NOTES

- 100 EXISTING CHAIN LINK FENCE
- 101 GRAVEL EDGE
- 102 SALVAGE TOPSOIL IN ALL AREAS OF EXCAVATION AND GRADING

300 STORMWATER

- 300 EXISTING 6" UNDERDRAIN
- 301 EXISTING STORM STRUCTURE
- 302 EXISTING DAYLIGHT PIPE - INLET = 187.5 OUTLET = 186.5
- 303 EXISTING CONCRETE PIPE
- 304 EXISTING HDPE PIPE

500 WATER

- 500 EXISTING WATER TRUNK LINE
- 501 EXISTING ALTITUDE CONTROL VALVE AND VAULT
- 502 EXISTING RESERVOIR TANK
- 503 EXISTING PUMP HOUSE
- 504 EXISTING FIRE HYDRANT
- 505 EXISTING DI OVERFLOW PIPE
- 506 EXISTING DI WATER PIPE
- 507 EXISTING PVC WATER LINE
- 508 EXISTING ASBESTOUS CONCRETE WATER LINE
- 509 EXISTING VAULT
- 510 EXISTING ROOF HATCH
- 511 EXISTING ROOF VENT

600 DRY UTILITIES

- 600 EXISTING OVERHEAD POWER POLE
- 601 EXISTING OVERHEAD POWER
- 602 EXISTING CELLULAR CONTROL BOX
- 603 EXISTING UTILITY BOX
- 604 UNDERGROUND POWER AND COMMUNICATIONS TO US101

GENERAL SHEET NOTES:

1. ALL ASBESTOS CONCRETE PIPE REMOVED NEEDS TO BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH OREGON DEQ RULES 340, DIVISION 248. AS WELL AS ANY LOCAL REQUIREMENTS INCLUDING OREGON OSHA AND CONSTRUCTION CONTRACTORS BOARD.

KEY MAP
SCALE: NTS

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Month 9, 1988
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Project Manager TWT
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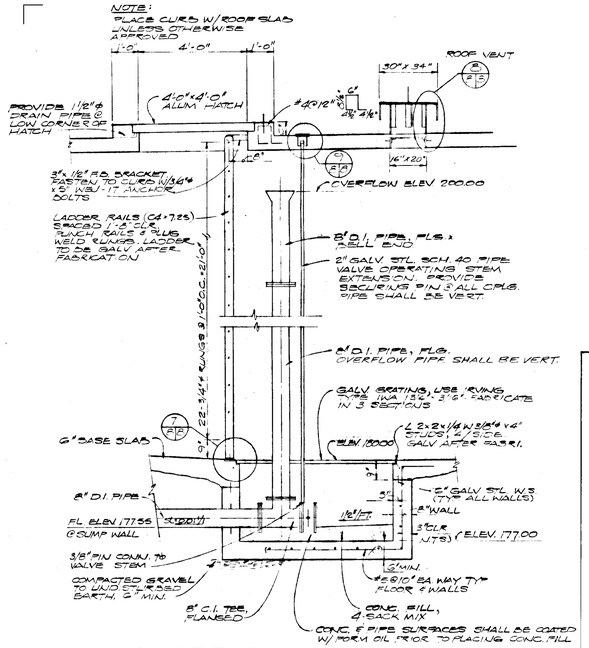
EXISTING CONDITIONS AND DEMOLITION PLAN - MAIN RESERVOIR

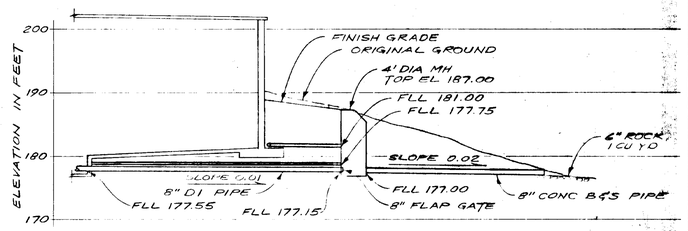
C000

BID PLAN SET



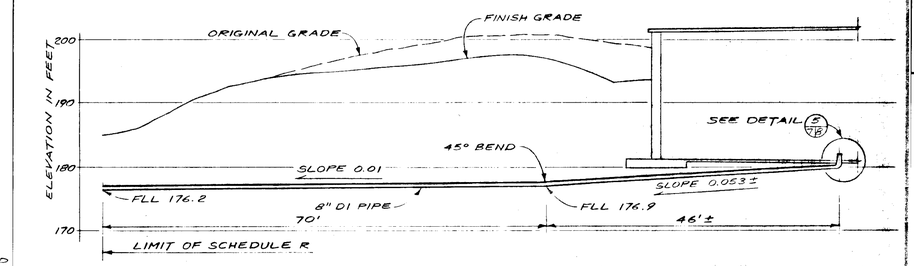
OVERFLOW PIPING - ROOF ACCESS DETAIL

1/2" = 1'-0"



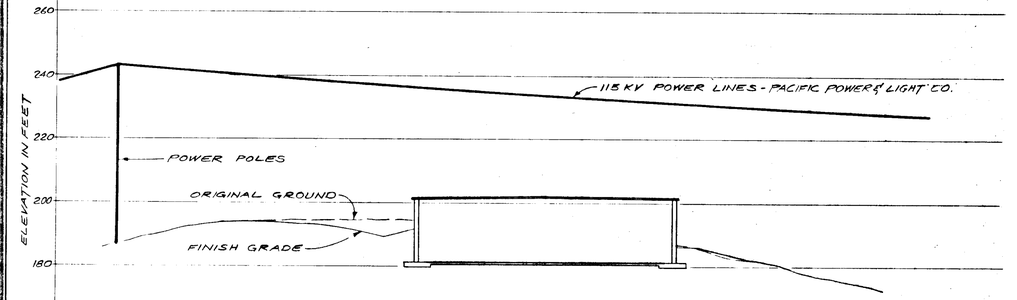
OVERFLOW - DRAIN PIPE PROFILE

1" = 10'



INLET PIPE PROFILE

1" = 10'

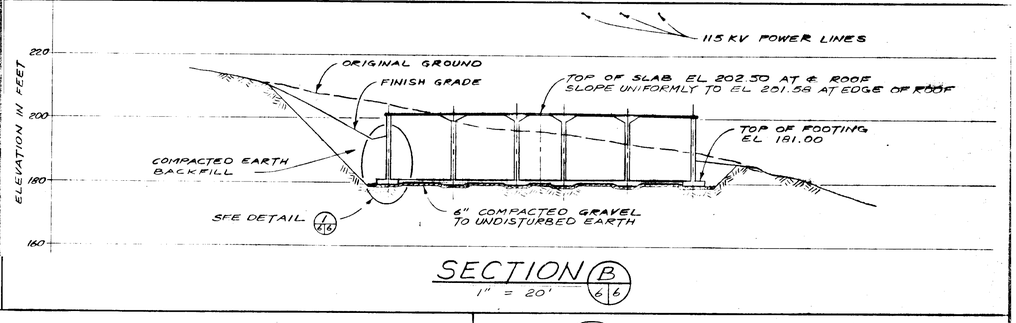


POWER LINE PROFILE

SECTION A 6/6

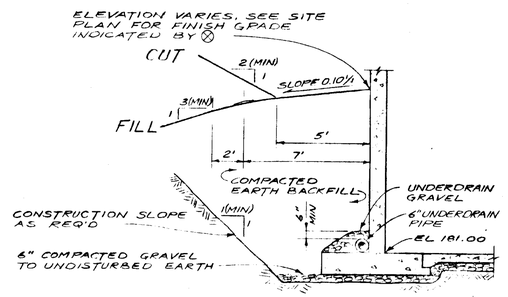
1" = 20'

NOTE:
1. PROFILE IS APPROXIMATE AND IS SHOWN FOR GENERAL INFORMATION ONLY. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING PROPER CLEARANCE FROM POWER LINES DURING CONSTRUCTION.



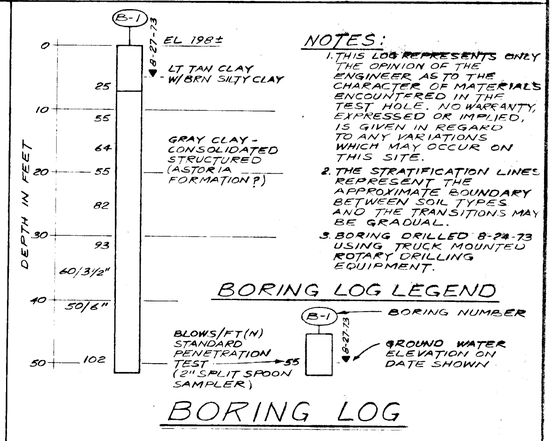
SECTION B 6/6

1" = 20'



DETAIL 1 6/6

N.T.S.



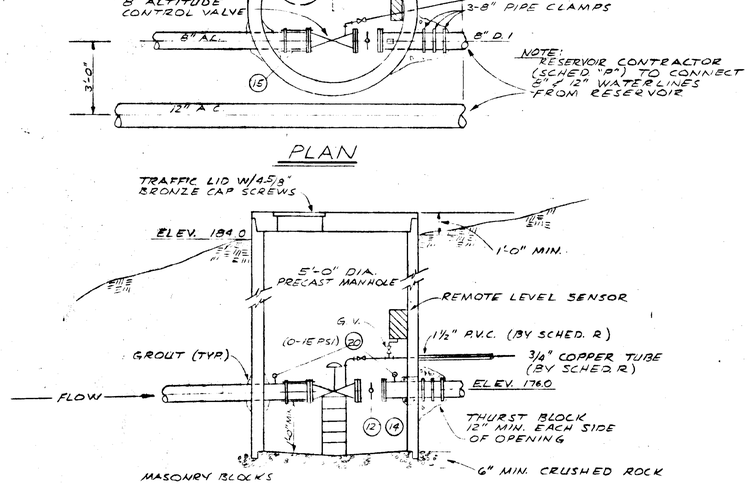
NOTES:
1. THIS LOG REPRESENTS ONLY THE OPINION OF THE ENGINEER AS TO THE CHARACTER OF MATERIALS ENCOUNTERED IN THE TEST HOLE. NO WARRANTY, EXPRESSED OR IMPLIED, IS GIVEN IN REGARD TO ANY VARIATIONS WHICH MAY OCCUR ON THIS SITE.
2. THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY BETWEEN SOIL TYPES AND THE TRANSITIONS MAY BE GRADUAL.
3. BORING DRILLED 8-29-73 USING TRUCK MOUNTED ROTARY DRILLING EQUIPMENT.

BORING LOG LEGEND

BORING LOG

LEGEND

1	4" G.I. PIPE
2	4"x3" G.I. REDUCER
3	GATE VALVE
4	3" PRESSURE RELIEF VALVE
5	FLOOD DRAIN
6	CHLORINE INJECTOR
7	A.C. HUBxFLG. ADAPTER
8	FLG.xFLG. D.I. PIPE
9	90° FLG. ELL.
10	8"x4" FLG. TEE
11	8"x6" FLG. REDUCER
12	FLG. B.V. W/HAND WHEEL
13	CHECK VALVE
14	FLG.xP.E. D.I. PIPE
15	FLG. COUPLING ADAPTER
16	6"x4" FLG. TEE W/1¼" TAP
17	6" TURBO-METER
18	½" AIR RELIEF VALVE W/G.V.
19	6" FLG.xFLG. D.I. PIPE TAPPED FOR CHLORINE DIFFUSER
20	PRESSURE GAUGE W/CORP. STOP (0-100 PSI)



ALTITUDE CONTROL VALVE & VAULT

N.T.S.

NOTES:
1. ASBUILT DRAWINGS OBTAINED FROM CITY OF CANNON BEACH 1974 CH2M HILL PLAN SET.
2. THE ENGINEER DOES NOT GUARANTEE THE ACCURACY OF THIS INFORMATION.

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ENGINEERING PLAN
Issue Date: 7/14/2023

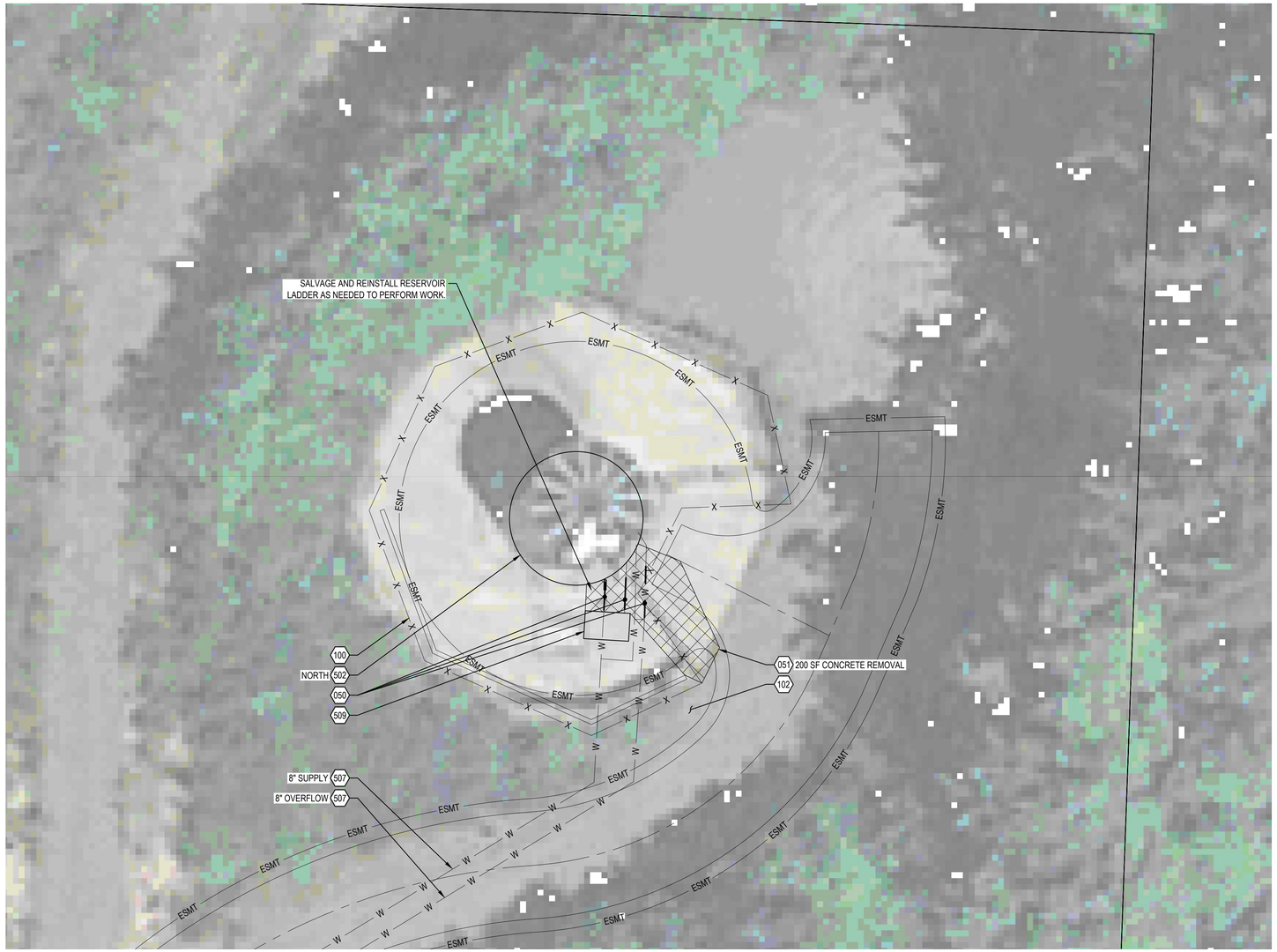
Project Manager TWT
Drawn by TJM
Checked by MRL

EXISTING DETAILS - MAIN RESERVOIR

C001

BID PLAN SET

NORTH RESERVOIR QUANTITIES		
ITEM	UNITS	QUANTITY
REMOVE PIPE	LF	20
REMOVE PIPE (ASBESTOS CONCRETE)	LF	0
TOPSOIL SALVAGE AND REINSTALL	SY	40
REMOVE VALVES	EA	3
SAWCUT CONCRETE	LF	50
REMOVE CONCRETE SURFACING	SY	400



PLAN
SCALE: 1" = 10'

0 10' 20'

N

050 DEMOLITION

- 050 REMOVE PIPE AS NEEDED TO INSTALL NEW VAULTS, FITTINGS AND VALVES. SEE SITE PLANS AND DETAILS FOR PROPOSED EQUIPMENT.
- 051 SAWCUTFULL DEPTH AND REMOVE PAVEING
- 052 POTHOLE TO LOCATE EXISTING PIPES PRIOR TO BEGINNING CONSTRUCTION- SHOWN LOCATIONS ARE BASED ON RECORD PLANS AND FIELD LOCATES
- 053 REMOVE EXISING VAULT, VALVES, METERS, FITTINGS AND PIPE.
- 054 CEARING AND GRUBBING AS NEEDED FOR NEW POWER

100 SITE PLAN NOTES

- 100 EXISTING CHAIN LINK FENCE
- 101 GRAVEL EDGE
- 102 SALVAGE TOPSOIL IN ALL AREAS OF EXCAVATION AND GRADING

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- 300 EXISTING 6" UNDERDRAIN
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- 304 EXISTING HDPE PIPE

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- 505 EXISTING DI OVERFLOW PIPE
- 506 EXISTING DI WATER PIPE
- 507 EXISTING PVC WATER LINE
- 508 EXISTING ASBESTOUS CONCRETE WATER LINE
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KEY MAP
SCALE: NTS

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EXPIRES: 06-30-24

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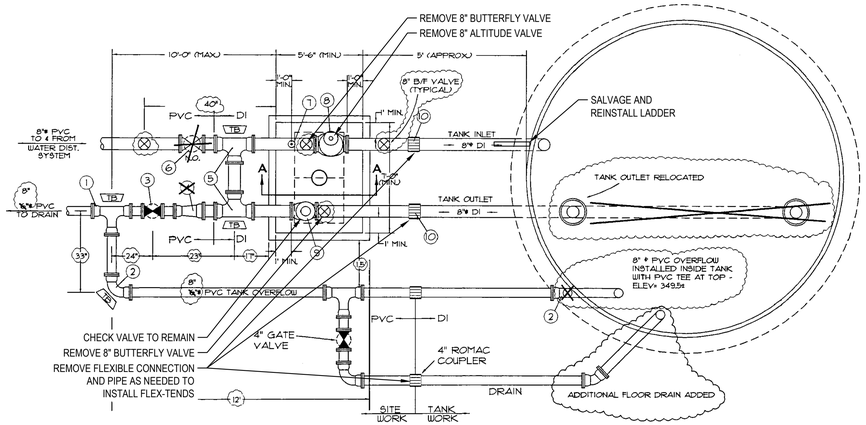
EXISTING CONDTIONS AND DEMOLITION PLAN - NORTH RESERVOIR

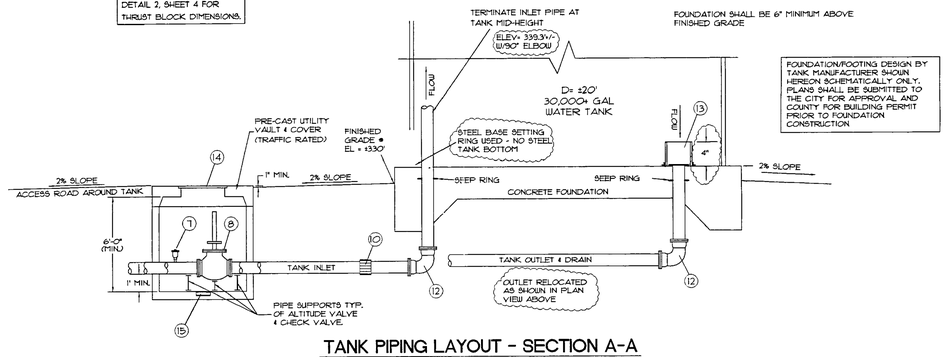
C002

BID PLAN SET



TANK PIPING LAYOUT - PLAN VIEW
SCALE: 1/4" = 1'

NOTE:
"TB" = THRUST BLOCK. SEE DETAIL 2, SHEET 4 FOR THRUST BLOCK DIMENSIONS.



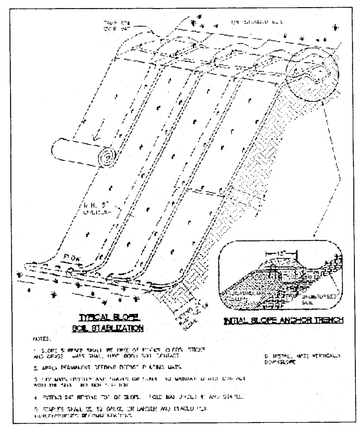
TANK PIPING LAYOUT - SECTION A-A
SCALE: 1/4" = 1'

PIPING COMPONENT TABLE

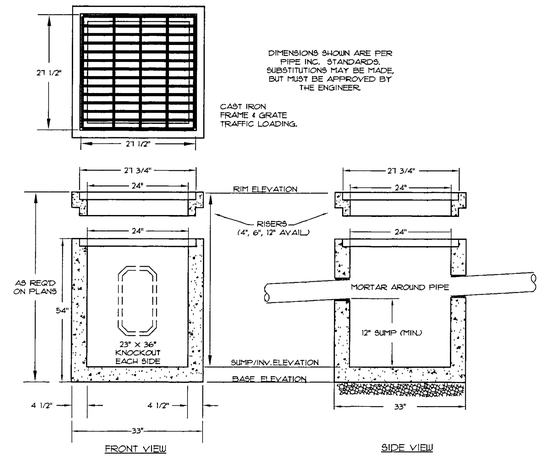
COMPONENT NUMBER	DESCRIPTION
1	6"x6"x6" MJxMJxMJ DI TEE
2	6"ø MJxMJ DI 90° STD. ELBOW
3	6"ø GATE VALVE (NORMALLY CLOSED), WITH VALVE BOX
4	8"x6" MJxMJ DI REDUCER
5	8"x8"x8" MJxMJxMJ DI TEE
6	8"ø GATE VALVE (NORMALLY OPEN), WITH VALVE BOX
7	AIR RELEASE VALVE
8	8"ø ALTITUDE VALVE
9	8"ø SPRING-ACTUATED CHECK VALVE
10	8"ø FLEXIBLE CONNECTION
11	6"ø FLEXIBLE CONNECTION
12	6"ø MJxMJ DI 90° STD. ELBOW
13	~~REMOVABLE SILT STOP~~ NOT USED - ADDITIONAL DEPRESSED DRAIN INSTALLED IN FLOOR
14	2 DOOR GALV. STEEL ACCESS HATCH (TRAFFIC RATED)
15	VAULT SUMP WITH 2" ø DRAIN PIPE WITH SCREENED END TO DAYLIGHT ON SLOPE - STATION 3+25+/- LT

TANK DATA
TYPE: GLASS-FUSED-TO-STEEL
MANUFACTURER: FUSION TANKS & SILOS, ENGLAND
CONSTRUCTED BY: DUNMIRE ASSOCIATES, INC. 1002 PIONEER RD, DALLAS, OR 97338
FLOOR: CONCRETE SLAB WITH STEEL BASE-SETTING RING
TANK BASE ELEVATION: 330' (NGVD "29" DATUM)
HEIGHT: 21'7 (INCLUDING ROOF) 20.3' TO BRIM
DIAMETER: 16.8' NOMINAL
CAPACITY: 30,211 US GALLONS-BRIMFULL
SIDE ACCESS HATCH: DIAMETER = 3'0" (GALVANIZED)
ROOF INSPECTION HATCH: DIAMETER = 24"
ROOF: 17' LIGHT DUTY ROOF ASSEMBLY (TAPERED BEAM ROOF TYPE) (WEIGHT = 1900LB).
TANK COLOR: FOREST GREEN
SNOW LOAD: 25 PSF, WIND LOAD: 100 MPH, SEISMIC LOADING: ZONE 4
CATHODIC TANK PROTECTION: NOT REQUIRED

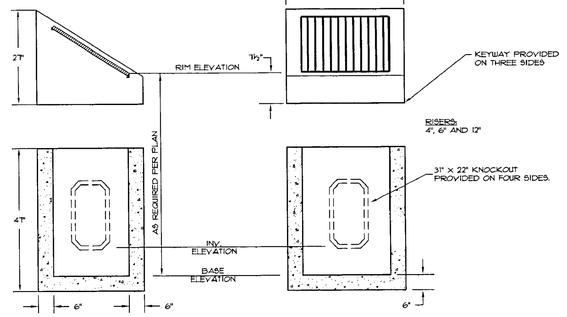
OVERFLOW ELEVATION?



1/5 EROSION PREVENTION MATTING DETAIL
NOT TO SCALE



2/5 TYPE 24-A CATCH BASIN
NOT TO SCALE



3/5 TYPE G-2 DITCH INLET
NOT TO SCALE

NOTES:
1. ASBUILT DRAWINGS OBTAINED FROM CITY OF CANNON BEACH 2002 HLB RECORD PLAN SET.
2. THE ENGINEER DOES NOT GUARANTEE THE ACCURACY OF THIS INFORMATION.

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Revisions:

LINE IS 1" ON FULL SCALE DRAWING

WINDSOR ENGINEERS
Ridgefield, WA
Duluth + Minneapolis, MN
www.windsorengineers.com
Project No: 20198.3

REGISTERED PROFESSIONAL ENGINEER 60239PE OREGON Travis W. Tormanen Month 9, 1998
EXPIRES: 06-30-24

WATER RESILIENCY PROJECT
PHASE 1 - SEISMIC IMPROVEMENTS
CITY OF CANNON BEACH, OR 97110

ENGINEERING PLAN
Issue Date: 7/14/2023

Project Manager TWT
Drawn by TJM
Checked by MRL

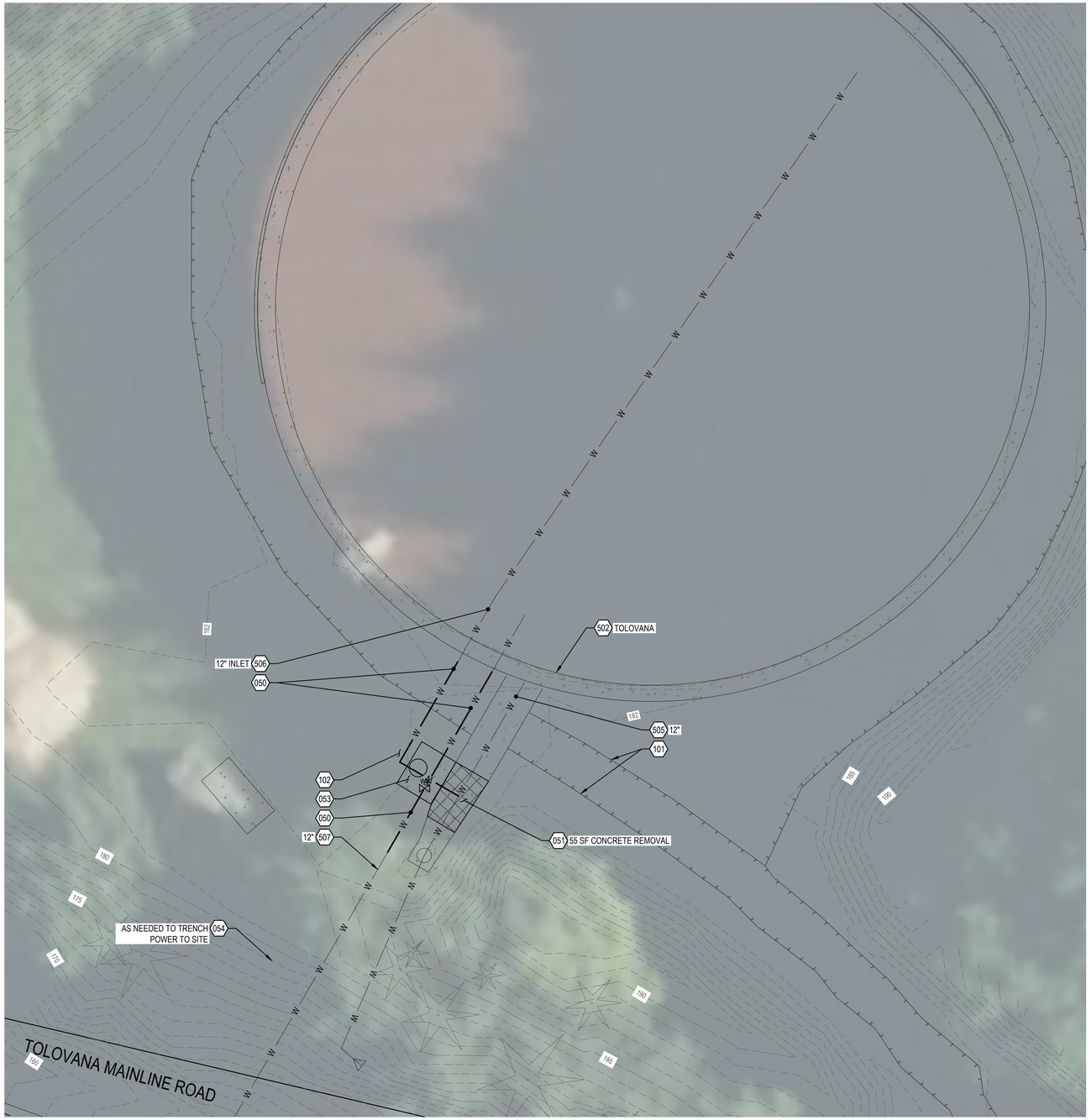
EXISTING DETAILS - NORTH RESERVOIR

C003

BID PLAN SET

SOUTH RESERVOIR QUANTITIES		
ITEM	UNITS	QUANTITY
REMOVE PIPE	LF	80
REMOVE PIPE (ASBESTOS CONCRETE)	LF	0
GRAVEL SALVAGE AND REINSTALL	SY	30
TOPSOIL SALVAGE AND REINSTALL	SY	35
REMOVE VALVES	EA	5
SAWCUT CONCRETE	LF	10
SAWCUT ASPHALT PAVEMENT	LF	50
REMOVE CONCRETE SURFACING	SY	55
REMOVE ASHPALT PAVEMENT	SY	15
REMOVAL OF STRUCTURES AND OBSTRUCTIONS	EA	1
CLEARING AND GRUBBING (AS NEEDED)	SY	30

PLAN
SCALE: 1" = 20'



PLAN
SCALE: 1" = 20'

050 DEMOLITION

- 050 REMOVE PIPE AS NEEDED TO INSTALL NEW VAULTS, FITTINGS AND VALVES. SEE SITE PLANS AND DETAILS FOR PROPOSED EQUIPMENT.
- 051 SAWCUTFULL DEPTH AND REMOVE PAVEING
- 052 POTHOLE TO LOCATE EXISTING PIPES PRIOR TO BEGINNING CONSTRUCTION- SHOWN LOCATIONS ARE BASED ON RECORD PLANS AND FIELD LOCATES
- 053 REMOVE EXISING VAULT, VALVES, METERS, FITTINGS AND PIPE.
- 054 CEARING AND GRUBBING AS NEEDED FOR NEW POWER

100 SITE PLAN NOTES

- 100 EXISTING CHAIN LINK FENCE
- 101 GRAVEL EDGE
- 102 SALVAGE TOPSOIL IN ALL AREAS OF EXCAVATION AND GRADING

300 STORMWATER

- 300 EXISTING 6" UNDERDRAIN
- 301 EXISTING STORM STRUCTURE
- 302 EXISTING DAYLIGHT PIPE - INLET = 187.5 OUTLET = 186.5
- 303 EXISTING CONCRETE PIPE
- 304 EXISTING HDPE PIPE

500 WATER

- 500 EXISTING WATER TRUNK LINE
- 501 EXISTING ALTITUDE CONTROL VALVE AND VAULT
- 502 EXISTING RESERVOIR TANK
- 503 EXISTING PUMP HOUSE
- 504 EXISTING FIRE HYDRANT
- 505 EXISTING DI OVERFLOW PIPE
- 506 EXISTING DI WATER PIPE
- 507 EXISTING PVC WATER LINE
- 508 EXISTING ASBESTOUS CONCRETE WATER LINE
- 509 EXISTING VAULT
- 510 EXISTING ROOF HATCH
- 511 EXISTING ROOF VENT

600 DRY UTILITIES

- 600 EXISTING OVERHEAD POWER POLE
- 601 EXISTING OVERHEAD POWER
- 602 EXISTING CELLULAR CONTROL BOX
- 603 EXISTING UTILITY BOX
- 604 UNDERGROUND POWER AND COMMUNICATIONS TO US101

GENERAL SHEET NOTES:

1. ALL ASBESTOS CONCRETE PIPE REMOVED NEEDS TO BE REMOVED AND DISPOSED OF IN ACCORDANCE WITH OREGON DEQ RULES 340, DIVISION 248. AS WELL AS ANY LOCAL REQUIREMENTS INCLUDING OREGON OSHA AND CONSTRUCTION CONTRACTORS BOARD.

KEY MAP
SCALE: NTS

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Revisions:

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www.windsorengineers.com
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REGISTERED PROFESSIONAL ENGINEER
60209PE
OREGON
March 9, 1999
TRAVIS W. TORMANEN
EXPIRES: 06-30-24

WATER RESILIENCY PROJECT
PHASE 1 - SEISMIC IMPROVEMENTS
CITY OF CANNON BEACH, OR 97110

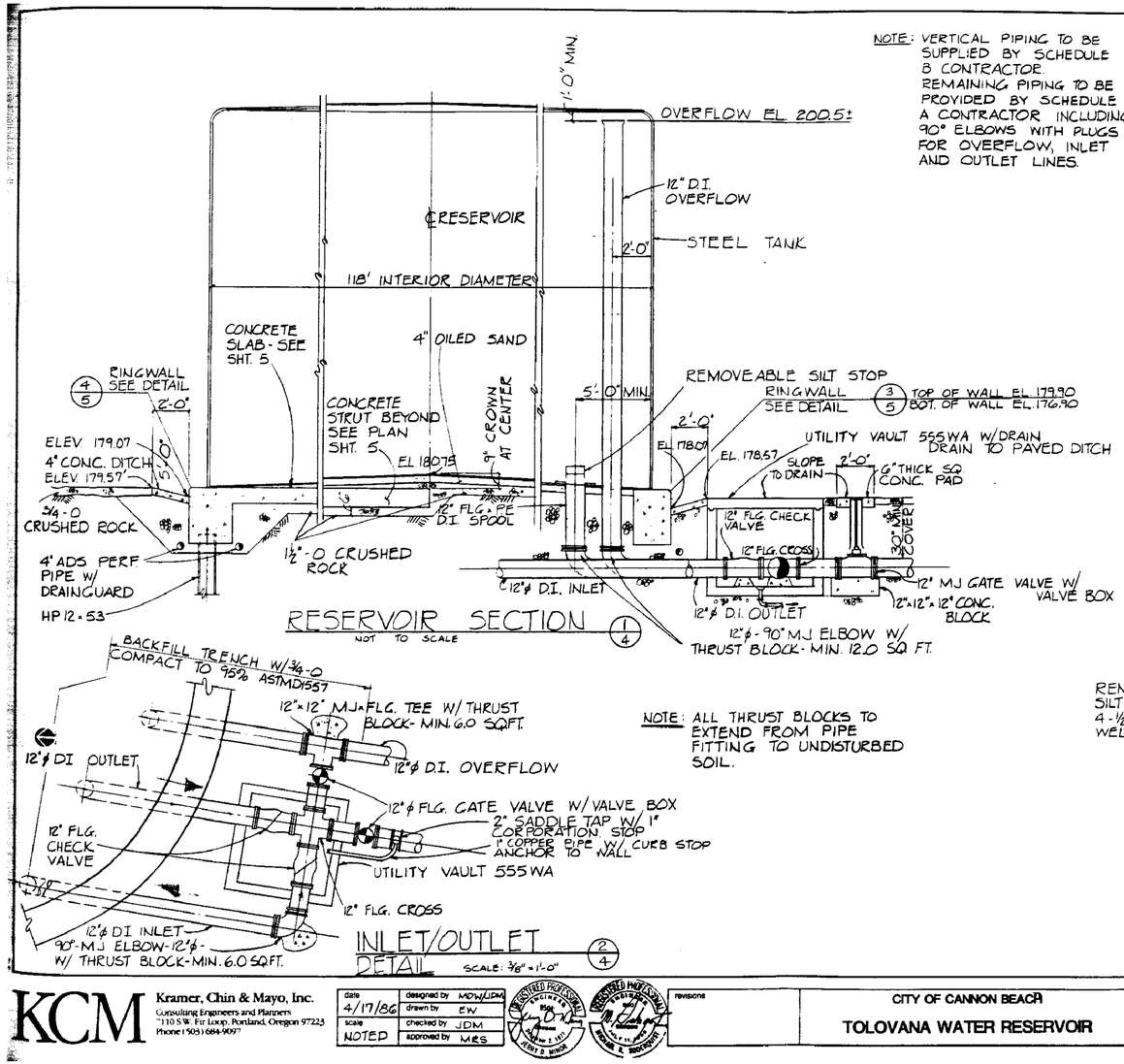
ENGINEERING PLAN
Issue Date: 7/14/2023

Project Manager TWT
Drawn by TJM
Checked by MRL

EXISTING CONDITIONS AND DEMOLITION PLAN- TOLOVANA RESERVOIR

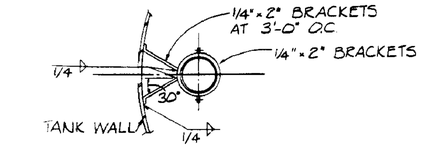
C004

BID PLAN SET

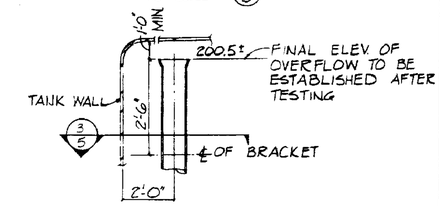


RESERVOIR SECTION 1/4
NOT TO SCALE

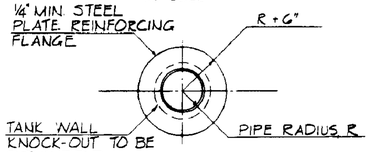
NOTE: VERTICAL PIPING TO BE SUPPLIED BY SCHEDULE B CONTRACTOR. REMAINING PIPING TO BE PROVIDED BY SCHEDULE A CONTRACTOR INCLUDING 90° ELBOWS WITH PLUGS FOR OVERFLOW, INLET AND OUTLET LINES.



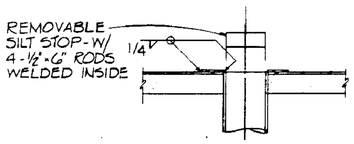
PLAN 3/5
NO SCALE



OVERFLOW DETAIL 4/5
NO SCALE



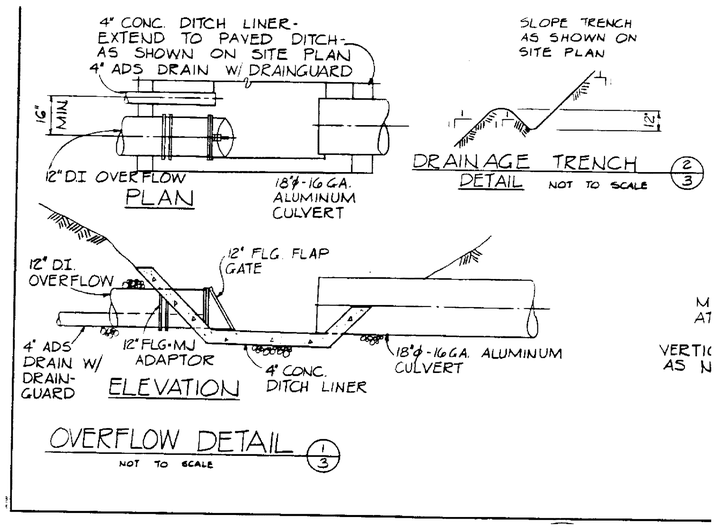
PLAN



FLOOR PENETRATION DETAIL 5/4

NOTE: ALL THRUST BLOCKS TO EXTEND FROM PIPE FITTING TO UNDISTURBED SOIL.

INLET/OUTLET DETAIL 2/4
SCALE: 3/8" = 1'-0"



NOTES:
1. ASBUILT DRAWINGS OBTAINED FROM CITY OF CANNON BEACH 1986 KCM PLAN SET.
2. THE ENGINEER DOES NOT GUARANTEE THE ACCURACY OF THIS INFORMATION.

KCM
Kramer, Chin & Mayo, Inc.
Consulting Engineers and Planners
1110 S.W. Fir Loop, Portland, Oregon 97223
Phone (503) 684-9097

date	4/17/86	designed by MDW/JDM
		drawn by EW
scale	NOTED	checked by JDM
		approved by MES

REGISTERED PROFESSIONAL ENGINEER — OREGON — JULY 11, 1975 — JERRY D. MINOR
REGISTERED PROFESSIONAL ENGINEER — OREGON — JANUARY 11, 1977 — MICHAEL L. SOKOLOFF

revisions

CITY OF CANNON BEACH
TOLOVANA WATER RESERVOIR
RESERVOIR SECTION AND DETAILS
sheet number 4 of 6

This drawing is full size when 22" x 34" or is reduced to half size when 11" x 17"

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Revisions:

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Duluth + Minneapolis, MN
www.windsorengineers.com
Project No: 20198.3

WATER RESILIENCY PROJECT
PHASE 1 - SEISMIC IMPROVEMENTS
CITY OF CANNON BEACH, OR 97110

ENGINEERING PLAN
Issue Date: 7/14/2023

Project Manager TWT
Drawn by TJM
Checked by MRL

EXISTING DETAILS - SOUTH-TOLOVANA RESERVOIR

C005

BID PLAN SET

PLOT DATE: 7/17/2023 5:11 PM - FILE: C:\Users\MARCUS\OneDrive - Windsor Engineers\03_Projects\2020\20198.3 Cannon Beach Seismic Varied\D_Drawings\1_Working\04_Final Sheets\20198.3_ex2.dwg

ISOLATION VALVE 4 QUANTITIES		
ITEM	UNITS	QUNTITY
REMOVE PIPE	LF	0
REMOVE PIPE (ASBESTOS CONCRETE)	LF	40
GRAVEL SALVAGE AND REINSTALL	SY	35
TOPSOIL SALVAGE AND REINSTALL	SY	75
CLEARING AND GRUBBING (AS NEEDED)	SY	10

PLAN
SCALE: 1" = 10'

050 DEMOLITION

- 050 REMOVE PIPE AS NEEDED TO INSTALL NEW VAULTS, FITTINGS AND VALVES. SEE SITE PLANS AND DETAILS FOR PROPOSED EQUIPMENT.
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100 SITE PLAN NOTES

- 100 EXISTING CHAIN LINK FENCE
- 101 GRAVEL EDGE
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- 510 EXISTING ROOF HATCH
- 511 EXISTING ROOF VENT

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- 600 EXISTING OVERHEAD POWER POLE
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GENERAL SHEET NOTES:

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2. PLACE ISOLATION VALVE TO REDUCE IMPACT TO NEARBY TREES. PROTECT TREES TO THE MAXIMUM EXTENT POSSIBLE.

KEY MAP
Scale: NTS

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Revisions:

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Duluth + Minneapolis, MN
www.windsorengineers.com
Project No: 20198.3

REGISTERED PROFESSIONAL ENGINEER
60299PE
OREGON
Month 9, 1999
TRAVIS W. TORMANEN
EXPIRES: 06-30-24

WATER RESILIENCY PROJECT
PHASE 1 - SEISMIC IMPROVEMENTS
CITY OF CANNON BEACH, OR 97110

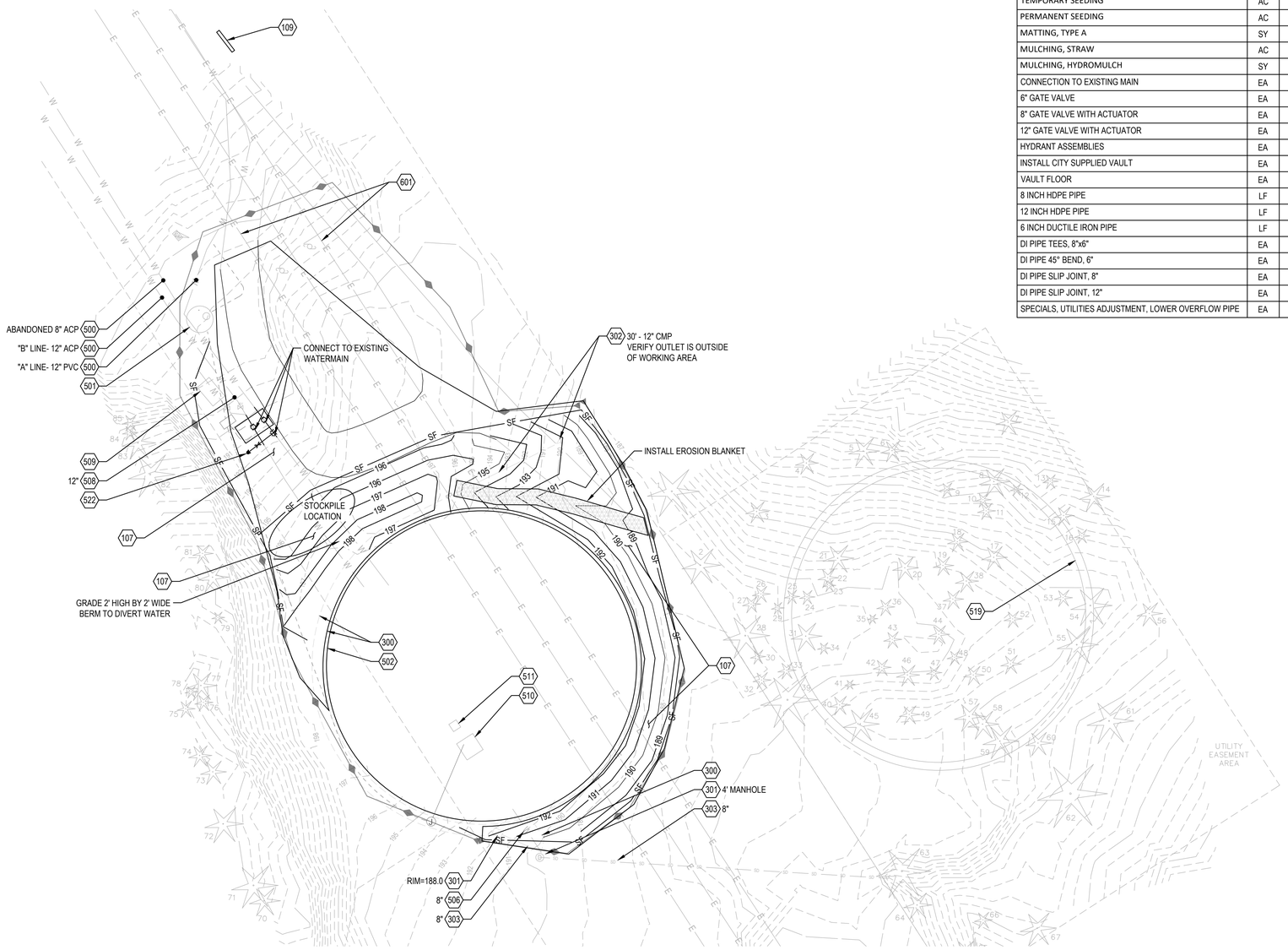
ENGINEERING PLAN
Issue Date: 7/14/2023

Project Manager TWT
Drawn by TJM
Checked by MRL

EXISTING CONDITIONS - ISOLATION VALVE 4

C006

BID PLAN SET



PLAN
SCALE: 1" = 20'

0 20' 40'

N

RESERVOIR IMPROVEMENTS:

1. LOWER OPERATING LEVEL OF THE TANK
2. REINFORCE WALLS BY ADDING FILL AROUND THE EAST AND SOUTH SIDES.

MAIN RESERVOIR QUANTITIES		
ITEM	UNITS	QUANTITY
TEMPORARY SIGNS	EA	1
GENERAL EXCAVATION	CY	120
EXTRA FOR SELECTED TOPSOIL MATERIAL	CY	10
SEDIMENT FENCE	LF	400
SEDIMENT BARRIER, TYPE 3	LF	50
SEEDING MOBILIZATION	LS	1
TEMPORARY SEEDING	AC	0.05
PERMANENT SEEDING	AC	0.05
MATTING, TYPE A	SY	50
MULCHING, STRAW	AC	0.05
MULCHING, HYDROMULCH	SY	1000
CONNECTION TO EXISTING MAIN	EA	3
6" GATE VALVE	EA	1
8" GATE VALVE WITH ACTUATOR	EA	1
12" GATE VALVE WITH ACTUATOR	EA	1
HYDRANT ASSEMBLIES	EA	1
INSTALL CITY SUPPLIED VAULT	EA	1
VAULT FLOOR	EA	1
8 INCH HDPE PIPE	LF	20
12 INCH HDPE PIPE	LF	10
6 INCH DUCTILE IRON PIPE	LF	10
DI PIPE TEES, 8"x6"	EA	11
DI PIPE 45° BEND, 6"	EA	1
DI PIPE SLIP JOINT, 8"	EA	1
DI PIPE SLIP JOINT, 12"	EA	1
SPECIALS, UTILITIES ADJUSTMENT, LOWER OVERFLOW PIPE	EA	1

100 SITE PLAN NOTES

100 EXISTING CHAIN LINK FENCE
101 GRAVEL EDGE
102 SALVAGE TOPSOIL IN ALL AREAS OF EXCAVATION AND GRADING
103 SIDEWALK / SHOULDER CLOSED SIGNAGE
104 CONSTRUCTION FENCE
105 BARRELS
106 REPAIR TO MATCH ORIGINAL MATERIALS
107 SEED AND BLANKET SWALE BOTTOM AND SEED AND MULCH REMAINDER OF DISTURBED AREAS. USE OREGON COAST RANGE ECO-REGION SEED MIX
108 SALVAGE AND REINSTALL SIGN IF NEEDED
109 BUSINESS OREGON AND OTHER CONSTRUCTION RELATED SIGNS.

110 EROSION CONTROL / OVERALL GRADING

110 INSTALL SILT FENCE
111 INSTALL SEDIMENT BARRIER

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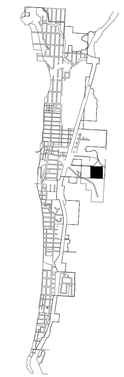
504 EXISTING FIRE HYDRANT
505 EXISTING DI OVERFLOW PIPE
506 EXISTING DI WATER PIPE
507 EXISTING PVC WATER LINE
508 EXISTING ASBESTOUS CONCRETE WATER LINE
509 EXISTING VAULT
510 EXISTING ROOF HATCH
511 EXISTING ROOF VENT
512 SEISMIC VALVE VAULT
513 SEISMIC VALVE CONTROL PANEL
514 FLEX-TEND WITH 12" EXTEND ABILITY
515 FLEX-TEND WITH 4" EXTEND ABILITY
516 WATER SERVICE AND GATE VALVE
517 MANHOLE, ISOLATION VALVE AND VALVE CONTROLS PLACE MANHOLE CASTING OUTSIDE OF TRAVEL LANES
518 WATERLINE. CONNECT TO EXISTING
519 FUTURE RESERVOIR
520 WATER PIPE
521 BLOW OFF HYDRANT
522 FIRE HYDRANT - WATER FILL STATION

600 DRY UTILITIES

600 EXISTING OVERHEAD POWER POLE
601 EXISTING OVERHEAD POWER
602 EXISTING CELLULAR CONTROL BOX
603 EXISTING UTILITY BOX
604 UNDERGROUND POWER AND COMMUNICATIONS TO US101



KEY MAP
Scale: NTS

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Duluth + Minneapolis, MN
www.windsorengineers.com
Project No: 20198.3

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60289PE
OREGON
TRAVIS W. TORMANEN
Month 9, 1998
EXPIRES: 06-30-24

WATER RESILIENCY PROJECT
PHASE 1 - SEISMIC IMPROVEMENTS
CITY OF CANNON BEACH, OR 97110

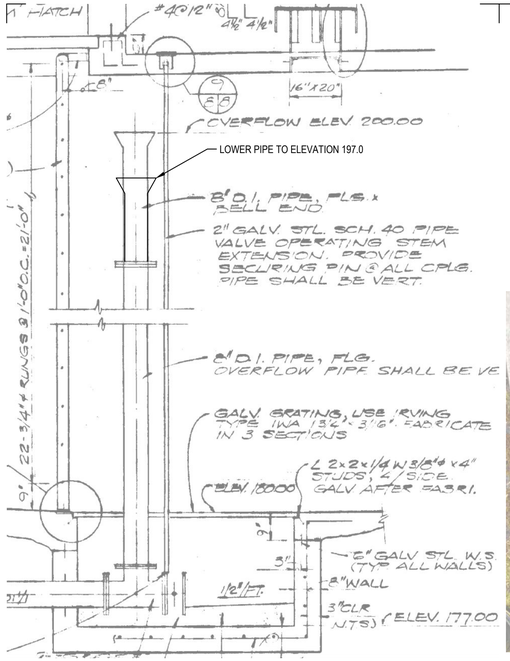
ENGINEERING PLAN
Issue Date: 7/14/2023

Project Manager TWT
Drawn by TJM
Checked by MRL

SITE & EROSION CONTROL PLAN - MAIN RESERVOIR

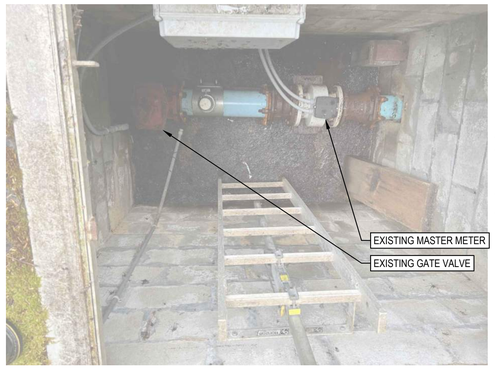
C100

BID PLAN SET



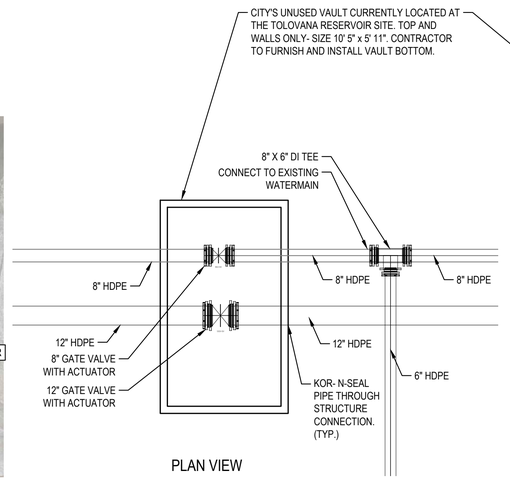
1 LOWERING RISER PIPE DETAIL

SCALE: 1/2" = 1'



2 PHOTO - EXISTING

SCALE: NTS



3 VAULT DETAIL

SCALE: NTS

4 EXISTING VAULT PHOTO

SCALE: NTS

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TRAVIS W. TORMANEN
EXPIRES: 06-30-24

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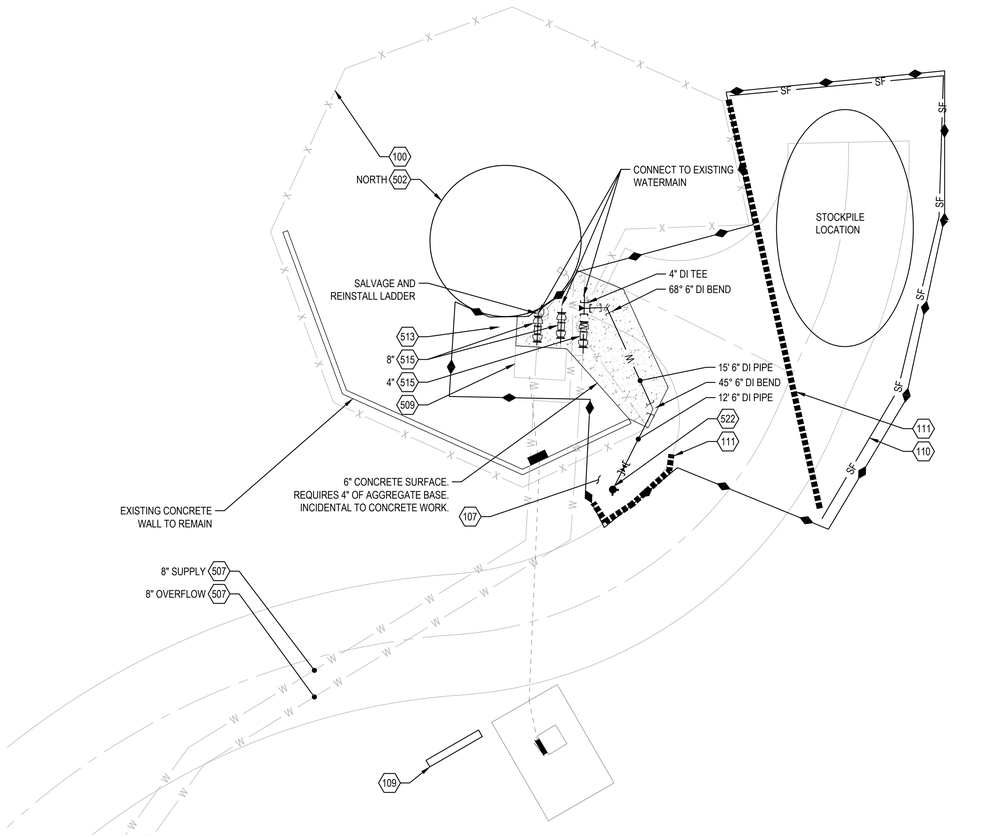
Checked by MRL

VAULT AND VALVE DETAILS - MAIN RESERVOIR

C101

BID PLAN SET

NORTH RESERVOIR QUANTITIES		
ITEM	UNITS	QUANTITY
TEMPORARY SINGS	EA	1
EXTRA FOR SELECTED TOPSOIL MATERIAL (IF NEEDED)	CY	5
SEDIMENT FENCE	LA	100
SEDIMENT BARRIER, TYPE 3	LA	100
SEEDING MOBILIZATION	LS	1
TEMPORARY SEEDING	AC	0.01
PERMANENT SEEDING	AC	0.01
MULCHING, STRAW	AC	0.01
MULCHING, HYDROMULCH	SY	40
SALVAGE & REINSTALL LADDER	EA	1
AGGREGATE BASE	TN	10
6 INCH CONCRETE SURFACING	SY	400
CONNECTION TO EXISTING MAIN	EA	3
6" GATE VALVE	EA	1
4" GATE VALVE WITH ACTUATOR	EA	1
8" GATE VALVE WITH ACTUATOR	EA	2
4" FLEXTEND	EA	1
8" FLEXTEND	EA	2
HYDRANT ASSEMBLIES	EA	1
6 INCH DUCTILE IRON PIPE	LF	30
8 INCH DUCTILE IRON PIPE	LF	10
DI PIPE TEES, 4"x4"	EA	1
DI PIPE REDUCER, 6" TO 4"	EA	1



PLAN
SCALE: 1" = 10'

0 10' 20'

N

100 SITE PLAN NOTES

100 EXISTING CHAIN LINK FENCE
101 GRAVEL EDGE
102 SALVAGE TOPSOIL IN ALL AREAS OF EXCAVATION AND GRADING
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110 INSTALL SILT FENCE
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300 STORMWATER

300 EXISTING 6" UNDERDRAIN
301 EXISTING STORM STRUCTURE
302 EXISTING DAYLIGHT PIPE - INLET = 187.5 OUTLET = 186.5
303 EXISTING CONCRETE PIPE
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500 WATER

500 EXISTING WATER TRUNK LINE
501 EXISTING ALTITUDE CONTROL VALVE AND VAULT
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503 EXISTING PUMP HOUSE
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516 WATER SERVICE AND GATE VALVE
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518 WATERLINE. CONNECT TO EXISTING
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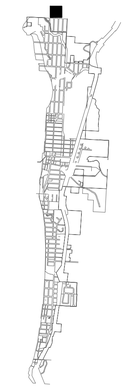
600 DRY UTILITIES

600 EXISTING OVERHEAD POWER POLE
601 EXISTING OVERHEAD POWER
602 EXISTING CELLULAR CONTROL BOX
603 EXISTING UTILITY BOX
604 UNDERGROUND POWER AND COMMUNICATIONS TO US101



KEY MAP
Scale: NTS

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Revisions:

LINE IS 1" ON FULL SCALE DRAWING

WINDSOR ENGINEERS
Ridgefield, WA
Duluth + Minneapolis, MN
www.windsorengineers.com
Project No: 20198.3

REGISTERED PROFESSIONAL ENGINEER
60289PE
OREGON
March 9, 1999
TRAVIS W. TORMANEN
EXPIRES: 06-30-24

WATER RESILIENCY PROJECT
PHASE 1 - SEISMIC IMPROVEMENTS
CITY OF CANNON BEACH, OR 97110

ENGINEERING PLAN
Issue Date: 7/14/2023

Project Manager TWT
Drawn by TJM
Checked by MRL

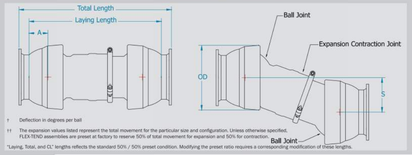
SITE & EROSION CONTROL PLAN - NORTH RESERVOIR

C102

BID PLAN SET

1 PHOTO- EXISTING
SCALE: NTS

FLEX-TEND Double Ball Submittal Reference Drawing - M.J. by M.J.



† Deflection in degrees per ball

†† The expansion values listed represent the total movement for the particular size and configuration. Unless otherwise specified, FLEX-TEND assemblies are preset at factory to reserve 50% of total movement for expansion and 50% for contraction.

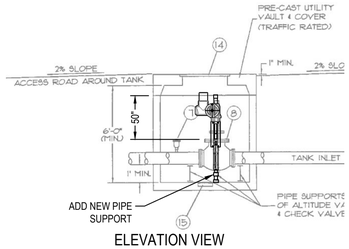
*Laying, Total, and CL' lengths reflects the standard 50% / 50% preset condition. Modifying the preset ratio requires a corresponding modification of these lengths.

Nominal Pipe Size	OD	Deflection† (Degrees)	A	Expansion††	Total Length	Laying Length*	CL	S (Offset)	Weight (lbs.)	Assembly Number
				4	35.80 (±2.0)	30.80 (±2.0)	21.30 (±2.0)	7.75	176	403M20
3	9.20	20	3.88	8	51.00 (±4.0)	46.00 (±4.0)	36.50 (±4.0)	13.28	221	403M21
				12	66.30 (±6.0)	61.30 (±6.0)	51.75 (±6.0)	18.84	265	403M22
				4	34.99 (±2.0)	29.99 (±2.0)	22.81 (±2.0)	8.49	152	404M20
4	10.85	20	3.59	8	50.24 (±4.0)	45.24 (±4.0)	38.06 (±4.0)	14.39	203	404M21
				12	65.49 (±6.0)	60.49 (±6.0)	53.31 (±6.0)	20.29	248	404M22
				4	37.11 (±2.0)	32.11 (±2.0)	23.70 (±2.0)	8.79	213	406M20
6	12.28	20	4.20	8	51.39 (±4.0)	46.39 (±4.0)	37.98 (±4.0)	14.36	274	406M21
				12	65.67 (±6.0)	60.67 (±6.0)	52.26 (±6.0)	19.93	335	406M22
				4	41.41 (±2.0)	36.41 (±2.0)	26.59 (±2.0)	9.78	311	408M20
8	14.82	20	4.91	8	58.51 (±4.0)	53.51 (±4.0)	43.69 (±4.0)	16.31	404	408M21
				12	75.61 (±6.0)	70.61 (±6.0)	60.79 (±6.0)	22.84	497	408M22
				4	45.74 (±2.0)	40.74 (±2.0)	28.38 (±2.0)	10.39	475	410M20
10	18.03	20	6.18	8	61.54 (±4.0)	56.54 (±4.0)	44.18 (±4.0)	16.48	612	410M21
				12	77.34 (±6.0)	72.34 (±6.0)	59.98 (±6.0)	22.57	750	410M22
				4	48.91 (±2.0)	43.91 (±2.0)	30.24 (±2.0)	11.03	587	412M20
12	20.69	20	6.84	8	64.86 (±4.0)	59.86 (±4.0)	46.19 (±4.0)	17.17	735	412M21
				12	80.81 (±6.0)	75.81 (±6.0)	62.14 (±6.0)	23.31	882	412M22
				8	65.10 (±4.0)	58.10 (±4.0)	44.00 (±4.0)	11.79	1222	414M20
14	25.00	15	7.00	16	91.50 (±8.0)	84.50 (±8.0)	70.50 (±8.0)	18.89	1510	414M21
				24	117.90 (±12)	110.90 (±12)	98.90 (±12)	25.96	1798	414M22
				8	74.00 (±4.0)	67.00 (±4.0)	46.30 (±4.0)	12.41	1133	416M20
16	25.00	15	10.30	16	101.50 (±8.0)	94.50 (±8.0)	74.20 (±8.0)	19.88	1465	416M21
				24	129.50 (±12)	122.50 (±12)	102.10 (±12)	27.36	1797	416M22
				8	71.90 (±4.0)	65.30 (±4.0)	47.10 (±4.0)	12.62	1760	418M20
18	30.50	15	12.60	16	99.20 (±8.0)	92.10 (±8.0)	74.10 (±8.0)	19.86	2153	418M21
				24	126.20 (±12)	119.20 (±12)	101.10 (±12)	27.09	2546	418M22
				8	73.50 (±4.0)	66.50 (±4.0)	45.90 (±4.0)	12.30	1874	420M20
20	30.50	15	10.40	16	101.00 (±8.0)	94.00 (±8.0)	73.20 (±8.0)	19.61	2298	420M21
				24	128.00 (±12)	121.00 (±12)	100.40 (±12)	26.90	2721	420M22
				8	87.00 (±4.0)	80.00 (±4.0)	52.20 (±4.0)	13.99	3183	424M20
24	37.30	15	13.80	16	114.00 (±8.0)	107.00 (±8.0)	79.50 (±8.0)	21.30	3902	424M21
				24	141.50 (±12)	134.00 (±12)	106.80 (±12)	28.62	4555	424M22
				8	98.20(±5)	90.20(±5)	65.30(±5)	17.50	4985	430M20
30	44.00	15	12.03	16	132.50(±10)	124.50(±10)	99.00(±10)	26.53	5976	430M21
				24	166.80(±15)	158.80(±15)	132.00(±15)	35.37	6856	430M22

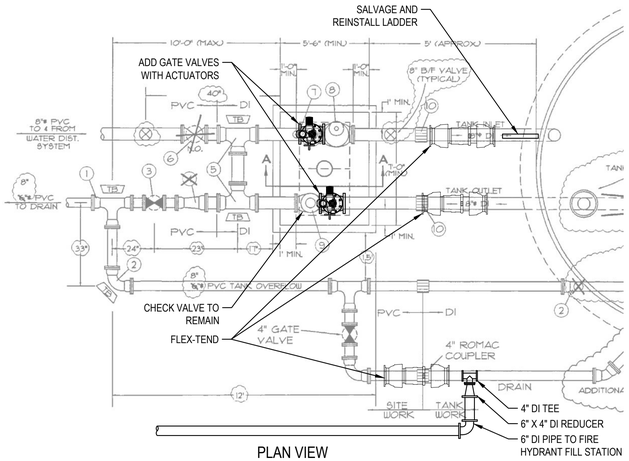
All dimensions are ± 1⁄4. NOTE: All dimensions listed in brochure are in inches and subject to change without notice.

6

2 FLEX-TEND DETAIL
SCALE: NTS



ELEVATION VIEW



PLAN VIEW

3 VAULT DETAIL
SCALE: NTS

Revisions:

LINE IS 1" ON FULL SCALE DRAWING

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www.windsorengineers.com
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REGISTERED PROFESSIONAL ENGINEER
60299PE
OREGON
Travis W. Tormanen
Month 9, 1999
EXPIRES: 06-30-24

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PHASE 1 - SEISMIC IMPROVEMENTS
CITY OF CANNON BEACH, OR 97110

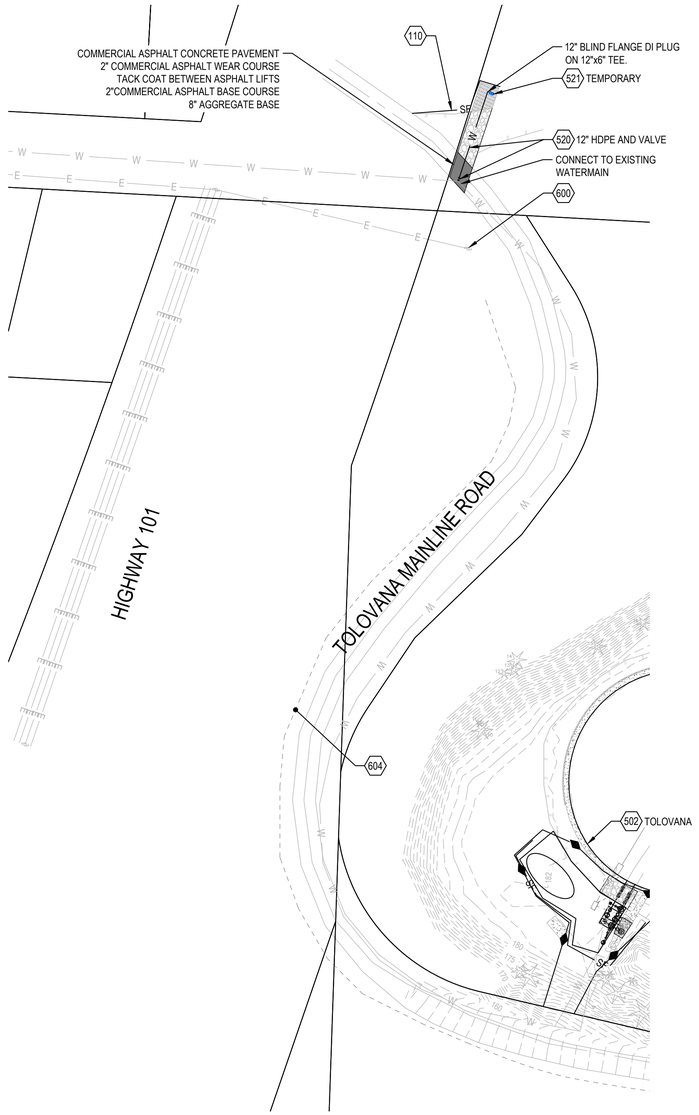
ENGINEERING PLAN
Issue Date: 7/14/2023

Project Manager TWT
Drawn by TJM
Checked by MRL

VAULT AND VALVE DETAILS - NORTH RESERVOIR

C103

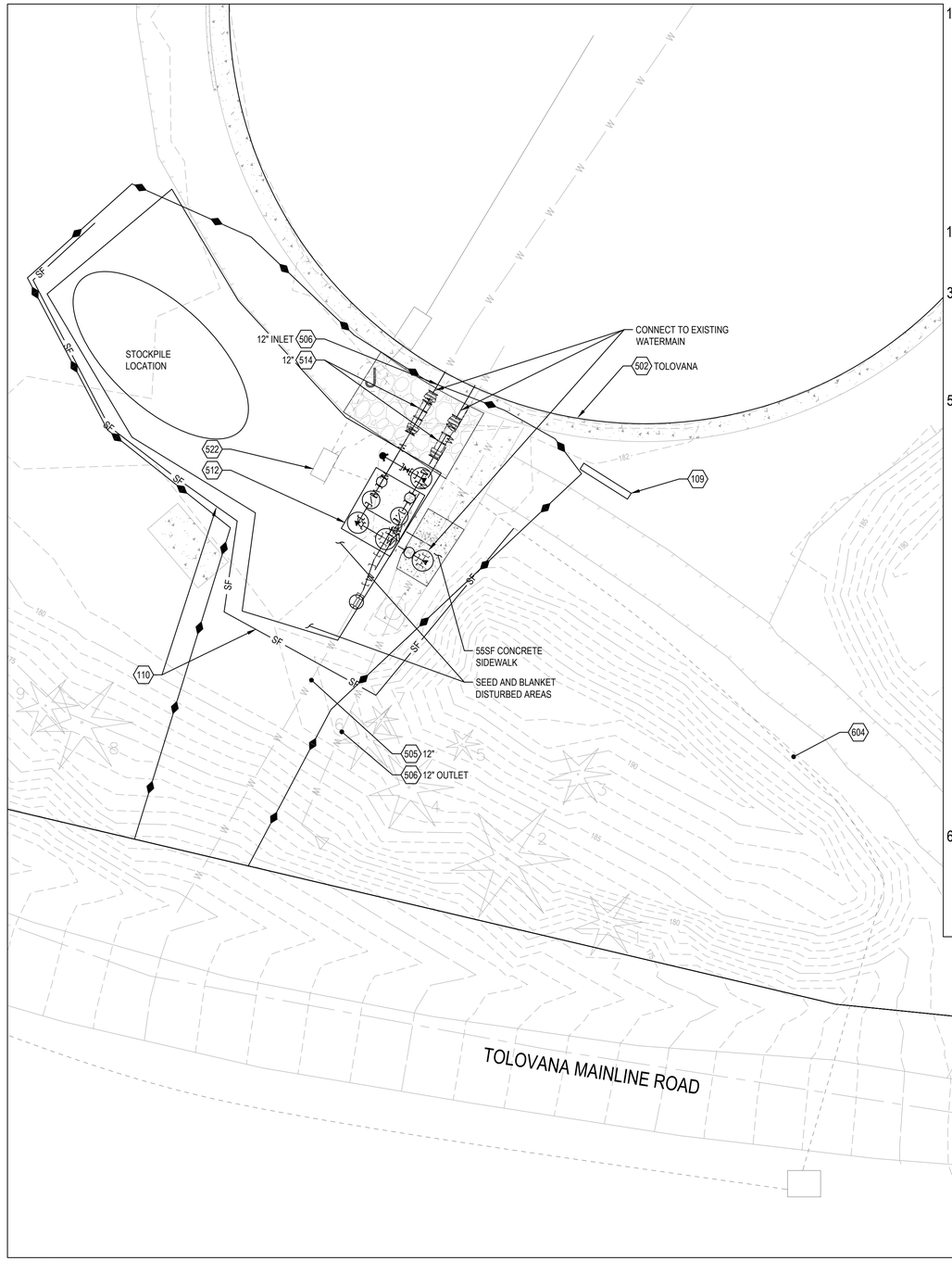
BID PLAN SET



PLAN

SCALE: 1" = 40'

0 40' 80' N



PLAN

SCALE: 1" = 10'

0 10' 20' N

100 SITE PLAN NOTES

100	EXISTING CHAIN LINK FENCE
101	GRAVEL EDGE
102	SALVAGE TOPSOIL IN ALL AREAS OF EXCAVATION AND GRADING
103	SIDEWALK / SHOULDER CLOSED SIGNAGE
104	CONSTRUCTION FENCE
105	BARRELS
106	REPAIR TO MATCH ORIGINAL MATERIALS
107	SEED AND BLANKET SWALE BOTTOM AND SEED AND MULCH REMAINDER OF DISTURBED AREAS. USE OREGON COAST RANGE ECO-REGION SEED MIX
108	SALVAGE AND REINSTALL SIGN IF NEEDED
109	BUSINESS OREGON AND OTHER CONSTRUCTION RELATED SIGNS.

110 EROSION CONTROL / OVERALL GRADING

110	INSTALL SILT FENCE
111	INSTALL SEDIMENT BARRIER

300 STORMWATER

300	EXISTING 6" UNDERDRAIN
301	EXISTING STORM STRUCTURE
302	EXISTING DAYLIGHT PIPE - INLET = 187.5 OUTLET = 186.5
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500 WATER

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601	EXISTING OVERHEAD POWER
602	EXISTING CELLULAR CONTROL BOX
603	EXISTING UTILITY BOX
604	UNDERGROUND POWER AND COMMUNICATIONS TO US101

GENERAL SHEET NOTES:

1. EXISTING VAULT TO BE REPLACED WITH NEW GATE VALVES AND ACTUATOR
2. FLEX-TENDS TO BE INSTALLED BETWEEN RESERVOIR AND VAULT
3. 6" DI HYDRANT ASSEMBLY TO BE INSTALLED BETWEEN FLEX-TENDS AND GATE VALVE VAULT
4. ELECTRIC CONTROL PANEL AND POWER TO BE INSTALLED

SOUTH RESERVOIR QUANTITIES

ITEM	UNITS	QUANTITY
TRAFFIC CONTROL	LS	1
TEMPORARY SIGNS	EA	1
EXTRA FOR SELECTED TOPSOIL MATERIAL (IF NEEDED)	CY	180
SEDIMENT FENCE	LF	100
SEDIMENT BARRIER, TYPE 3	LF	1
SEEDING MOBILIZATION	LS	1
TEMPORARY SEEDING	AC	0
PERMANENT SEEDING	AC	0
MATTING, TYPE A	SY	10
MULCHING, STRAW	AC	0
MULCHING, HYDROMULCH	SY	1000
AGGREGATE BASE	TN	15
COMMERCIAL ASPHALT CONCRETE PAVEMENT	TN	5
6 INCH CONCRETE SURFACING	SY	10
CONNECTION TO EXISTING MAIN	EA	4
6" GATE VALVE	EA	11
12" GATE VALVE	EA	2
12" CHECK VALVE	EA	
12" GATE VALVE WITH ACTUATOR	EA	2
12" FLEXTEND	EA	2
HYDRANT ASSEMBLIES	EA	1
10' x 8' VAULT	EA	1
12 INCH HDPE PIPE	LF	40
6 INCH DUCTILE IRON PIPE	LF	10
12 INCH DUCTILE IRON PIPE	LF	80
DI PIPE TEES, 12"x6"	EA	2
DI PIPE TEES, 12"x12"	EA	1
DI PIPE CROSS, 12"	EA	1
DI PIPE 45° BEND, 12"	EA	2
DI PIPE 90° BEND, 12"	EA	1
DI PIPE SLIP JOINT, 12"	EA	2
12" PLUG	EA	1
BLOWOFF ASSEMBLY, 2"	EA	1

KEY MAP

Scale: NTS

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CITY OF CANNON BEACH, OR 97110

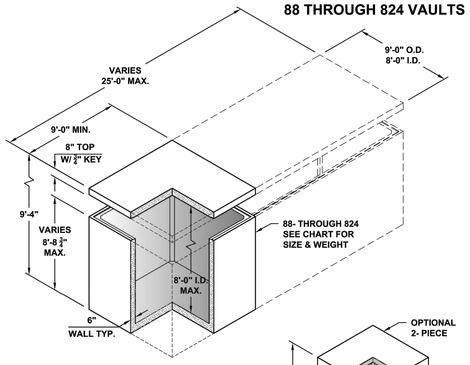
ENGINEERING PLAN
Issue Date: 7/14/2023

Project Manager TWT
Drawn by TJM
Checked by MRL

SITE & EROSION CONTROL PLAN - TOLOVANA RESERVOIR

C104

BID PLAN SET

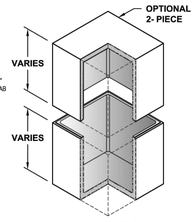


88 THROUGH 824 IN 2FT. INCREMENTS

VAULT	WIDTH I.D.	LENGTH I.D.	HEIGHT I.D.	TOP WEIGHT	BASE WEIGHT
~~88~~	~~8'-0"~~	~~8'-0"~~	~~8'-0"~~	~~8,500 LBS~~	~~28,730 LBS~~
810	8'-0"	10'-0"	8'-0"	9,810 LBS	28,930 LBS
~~812~~	~~8'-0"~~	~~12'-0"~~	~~8'-0"~~	~~11,600 LBS~~	~~37,160 LBS~~
~~814~~	~~8'-0"~~	~~14'-0"~~	~~8'-0"~~	~~13,400 LBS~~	~~41,560 LBS~~
~~816~~	~~8'-0"~~	~~16'-0"~~	~~8'-0"~~	~~15,190 LBS~~	~~45,960 LBS~~
~~818~~	~~8'-0"~~	~~18'-0"~~	~~8'-0"~~	~~17,010 LBS~~	~~41,770 LBS~~
~~820~~	~~8'-0"~~	~~20'-0"~~	~~8'-0"~~	~~18,770 LBS~~	~~45,390 LBS~~
~~822~~	~~8'-0"~~	~~22'-0"~~	~~8'-0"~~	~~20,660 LBS~~	~~49,000 LBS~~
~~824~~	~~8'-0"~~	~~24'-0"~~	~~8'-0"~~	~~22,360 LBS~~	~~52,680 LBS~~

NOTE:
HEIGHT OF BASE AND TOP ADJUSTABLE, 8'-0" I.D. MAX EACH SECTION, BASE FLOOR AND TOP DECK THICKNESS AS REQUIRED.
OPTIONAL TOP ACCESS, MANHOLE FRAME & COVERS, AND HATCHES AS NEEDED.
VARIOUS SIZES AVAILABLE.
OPTIONAL ACCESSORIES: STRUT CHANNEL, SUMPS, INSERTS, LADDERS, ETC.

NOTE:
WEIGHTS BASED ON 8" FLOOR AND 8" TOP SLAB



88-2 VAULT

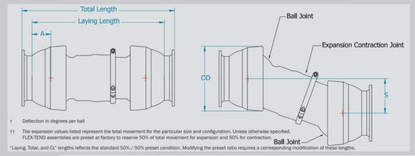
RVP Rogue Valley Precast — SMART certified

Phone: (541) 538-2500 Fax: (541) 538-2504
Email: sales@rvpor.com
Web: rvpor.com

Section: Standard Vaults Pg: 20 Date: 2019

1 810 VAULT DETAIL
SCALE: NTS

FLEX-TEND Double Ball Submittal Reference Drawing - M.J. by M.J.



† Deflection in degrees per ball

†† The expansion values listed represent the total movement for the particular size and configuration. Unless otherwise specified, FLEX-TEND assemblies are preset at factory to reserve 50% of total movement for expansion and 50% for contraction.

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				24	117.90 (±12)	110.90 (±12)	96.90 (±12)	25.96	1798	414M22
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16	25.00	15	10.30	16	101.50 (±8.0)	94.50 (±8.0)	74.20 (±8.0)	19.88	1465	416M21
				24	129.50 (±12)	122.50 (±12)	102.10 (±12)	27.36	1797	416M22
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				24	141.50 (±12)	134.00 (±12)	106.80 (±12)	28.62	4555	424M22
				8	98.20(±5)	90.20(±5)	65.30(±5)	17.50	4985	430M20
30	44.00	15	12.03	16	132.50(±10)	124.50(±10)	99.00(±10)	26.53	5976	430M21
				24	166.80(±15)	158.80(±15)	132.00(±15)	35.37	6856	430M22

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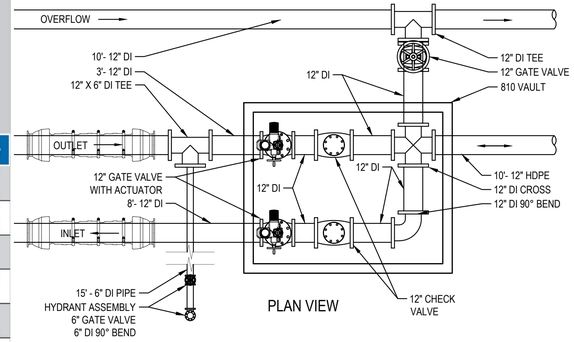
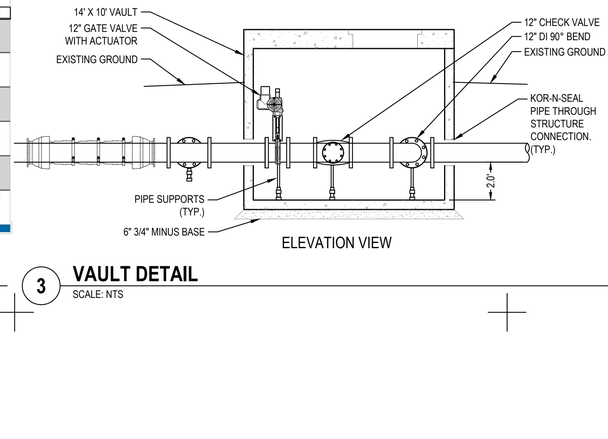
2 FLEX-TEND DETAIL
SCALE: NTS





3 VAULT DETAIL
SCALE: NTS

PLOT DATE: 7/17/2023 5:13 PM - FILE: C:\Users\MARCUS\OneDrive - Windsor Engineers\05_Projects\2020\20198.3 Cannon Beach Seismic Valves\02_Drawings\01_Working\04_Final Sheets\20198.3_site.dwg

811 Know what's **below.** **Call** before you dig.
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CAUTION UTILITY INFORMATION IS APPROXIMATE.
VERIFY ALL UTILITIES PRIOR TO CONSTRUCTION.

Revisions:

LINE IS 1" ON FULL SCALE DRAWING

WINDSOR ENGINEERS
Ridgefield, WA
Duluth + Minneapolis, MN
www.windsorengineers.com
Project No: 20198.3

REGISTERED PROFESSIONAL ENGINEER
60299PE
OREGON
Travis W. Tormanen
EXPIRES: 06-30-24

WATER RESILIENCY PROJECT
PHASE 1 - SEISMIC IMPROVEMENTS
CITY OF CANNON BEACH, OR 97110

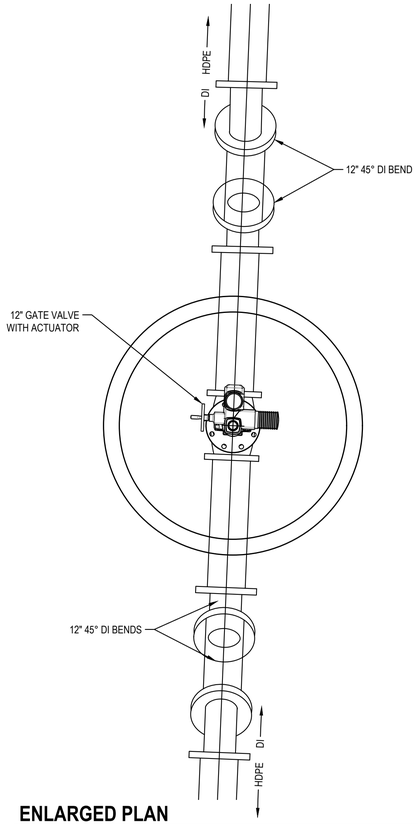
ENGINEERING PLAN
Issue Date: 7/14/2023

Project Manager TWT
Drawn by TJM
Checked by MRL

VAULT AND VALVE DETAILS- TOLOVANA RESERVOIR

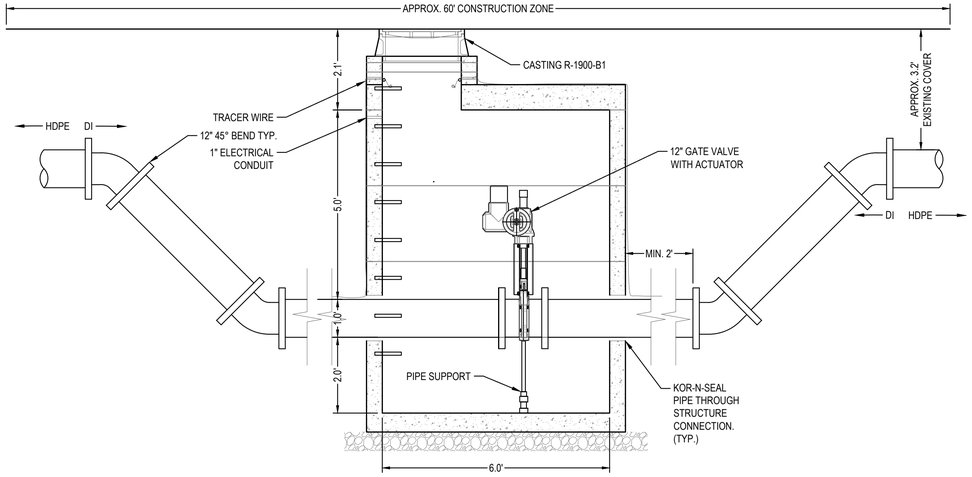
C105

BID PLAN SET



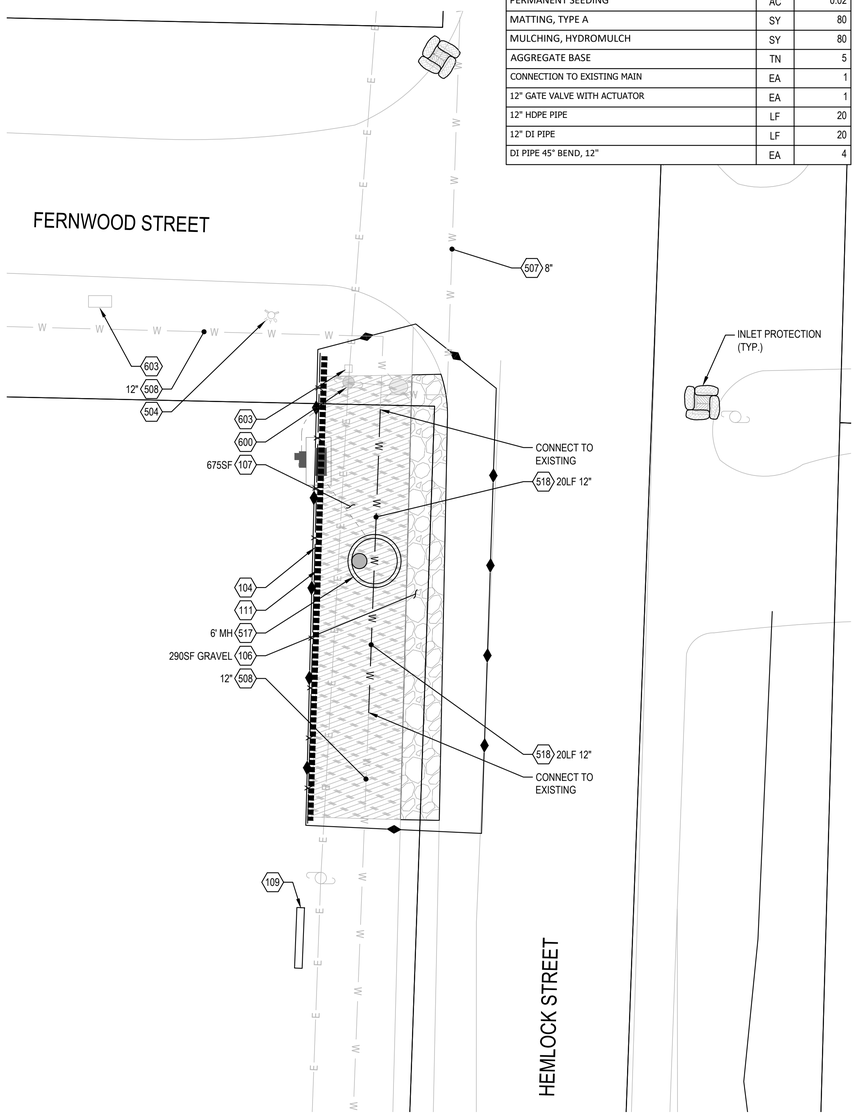
ENLARGED PLAN

SCALE: 1" = 2'



ELEVATION

SCALE: 1" = 2'



PLAN

SCALE: 1" = 10'

ISOLATION VALVE 4 QUANTITIES

ITEM	UNITS	QUANTITY
TRAFFIC CONTROL	LS	1
TEMPORARY SIGNS	EA	1
EXTRA FOR SELECTED TOPSOIL MATERIAL (IF NEEDED)	CY	5
SEDIMENT FENCE	LF	60
SEDIMENT BARRIER, TYPE 3	LF	60
INLET PROTECTION, TYPE 3	EA	4
SEEDING MOBILIZATION	LS	1
TEMPORARY SEEDING	AC	0.02
PERMANENT SEEDING	AC	0.02
MATTING, TYPE A	SY	80
MULCHING, HYDROMULCH	SY	80
AGGREGATE BASE	TN	5
CONNECTION TO EXISTING MAIN	EA	1
12" GATE VALVE WITH ACTUATOR	EA	1
12" HDPE PIPE	LF	20
12" DI PIPE	LF	20
DI PIPE 45° BEND, 12"	EA	4

100 SITE PLAN NOTES

100 EXISTING CHAIN LINK FENCE
101 GRAVEL EDGE
102 SALVAGE TOPSOIL IN ALL AREAS OF EXCAVATION AND GRADING
103 SIDEWALK / SHOULDER CLOSED SIGNAGE
104 CONSTRUCTION FENCE
105 BARRELS
106 REPAIR TO MATCH ORIGINAL MATERIALS
107 SEED AND BLANKET SWALE BOTTOM AND SEED AND MULCH REMAINDER OF DISTURBED AREAS. USE OREGON COAST RANGE ECO-REGION SEED MIX
108 SALVAGE AND REINSTALL SIGN IF NEEDED
109 BUSINESS OREGON AND OTHER CONSTRUCTION RELATED SIGNS.

110 EROSION CONTROL / OVERALL GRADING

110 INSTALL SILT FENCE
111 INSTALL SEDIMENT BARRIER

300 STORMWATER

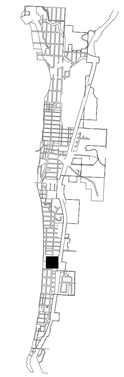
300 EXISTING 6" UNDERDRAIN
301 EXISTING STORM STRUCTURE
302 EXISTING DAYLIGHT PIPE - INLET = 187.5 OUTLET = 186.5
303 EXISTING CONCRETE PIPE
304 EXISTING HDPE PIPE

500 WATER

500 EXISTING WATER TRUNK LINE
501 EXISTING ALTITUDE CONTROL VALVE AND VAULT
502 EXISTING RESERVOIR TANK
503 EXISTING PUMP HOUSE
504 EXISTING FIRE HYDRANT
505 EXISTING DI OVERFLOW PIPE
506 EXISTING DI WATER PIPE
507 EXISTING PVC WATER LINE
508 EXISTING ASBESTOUS CONCRETE WATER LINE
509 EXISTING VAULT
510 EXISTING ROOF HATCH
511 EXISTING ROOF VENT
512 SEISMIC VALVE VAULT
513 SEISMIC VALVE CONTROL PANEL
514 FLEX-TEND WITH 12" EXTEND ABILITY
515 FLEX-TEND WITH 4" EXTEND ABILITY
516 WATER SERVICE AND GATE VALVE
517 MANHOLE, ISOLATION VALVE AND VALVE CONTROLS PLACE MANHOLE CASTING OUTSIDE OF TRAVEL LANES
518 WATERLINE. CONNECT TO EXISTING
519 FUTURE RESERVOIR
520 WATER PIPE
521 BLOW OFF HYDRANT
522 FIRE HYDRANT - WATER FILL STATION

600 DRY UTILITIES

600 EXISTING OVERHEAD POWER POLE
601 EXISTING OVERHEAD POWER
602 EXISTING CELLULAR CONTROL BOX
603 EXISTING UTILITY BOX



KEY MAP

Scale: NTS

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REGISTERED PROFESSIONAL ENGINEER
60239PE
OREGON
Month 9, 1998
TRAVIS W. TORMANEN
EXPIRES: 06-30-24

WATER RESILIENCY PROJECT
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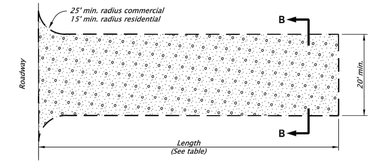
ENGINEERING PLAN
Issue Date: 7/14/2023

Project Manager TWT
Drawn by TJM
Checked by MRL

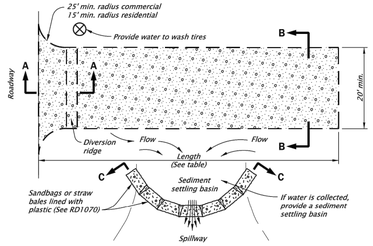
SITE & EROSION CONTROL PLAN - ISOLATION VALVE 4

C106

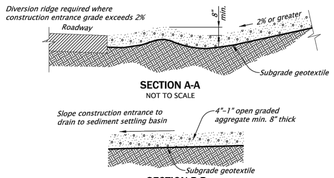
BID PLAN SET



CONSTRUCTION ENTRANCE - TYPE 1
NOT TO SCALE

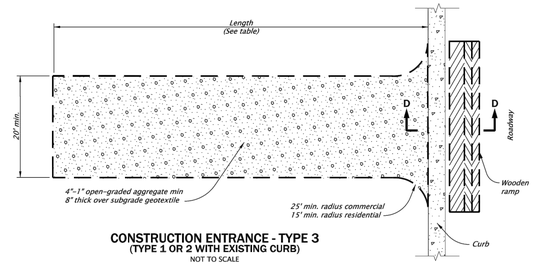


CONSTRUCTION ENTRANCE - TYPE 2
NOT TO SCALE

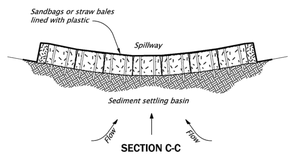


SECTION A-A
NOT TO SCALE

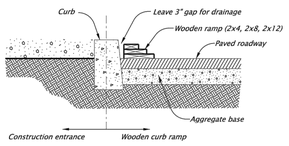
SECTION B-B
NOT TO SCALE



CONSTRUCTION ENTRANCE - TYPE 3
(TYPE 1 OR 2 WITH EXISTING CURB)
NOT TO SCALE



SECTION C-C
NOT TO SCALE



WOODEN CURB RAMP SECTION D-D
NOT TO SCALE

NOTES:
1. *The Type 1 entrance is a simple entrance without a diversion ridge or settling basin.*
2. *The wooden ramp may be used on either Type 1 or Type 2 entrances in situations where there is curb and the curb is not removed for the construction entrance.*

CONSTRUCTION ENTRANCE TABLE MINIMUM LENGTH	
Length (FT)	*Area Of Exposed Soil (Acre)*
20	0.25
50	0.25 < A < 1.0
100	A > 1.0

CALC. BOOK NO. N/A

SDR DATE January, 2021

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OREGON STANDARD DRAWINGS

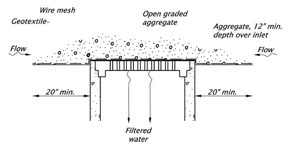
CONSTRUCTION ENTRANCES

2021

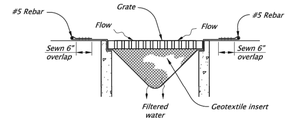
DATE	REVISION DESCRIPTION
Jan 2021	Removed Calc book numbers

RD1000

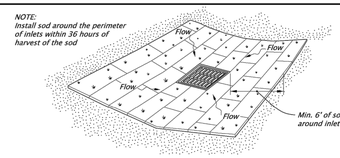
Effective Date: June 1, 2021 - November 30, 2021



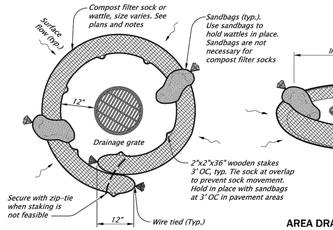
GEOTEXTILE/WIRE MESH/AGGREGATE - TYPE 2
NOT TO SCALE



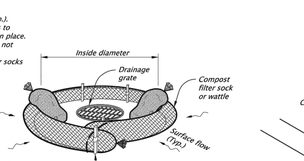
PREFABRICATED FILTER INSERT - TYPE 3
NOT TO SCALE



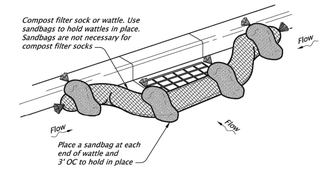
SOD PROTECTION - TYPE 6
NOT TO SCALE



AREA DRAIN PLAN



AREA DRAIN PERSPECTIVE VIEW



COMPOST FILTER SOCK OR WATTLE - TYPE 7
NOT TO SCALE

CURB INLET PERSPECTIVE VIEW

NOTES:
Type 2 – Geotextile/wire mesh/aggregate
Place the wire mesh over the grate.
Place sediment fence geotextile over the wire mesh and perimeter area around structure.
Install aggregate over the geotextile fabric.

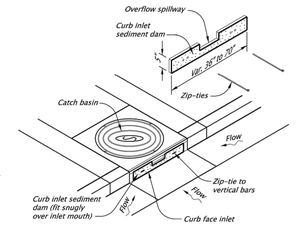
Type 3 – Prefabricated filter inserts
Install prefabricated filter inserts according to the plans, special provisions, and manufacturer recommendations. Prefabricated inserts with provisions for overflow are allowed only when accompanied by additional BMP's to prevent the potential of sediments entering project storm systems. Field fabricated inserts are not allowed.

Type 7 – Compost filter sock
Drive 2"x2" wood stakes a minimum of 6" into ground and flush with the top of the sock.
Overlap ends of sock per manufacturers recommendations (12"min., 36" max.). Use 8" to 12" dia sock on curbside in traffic areas.

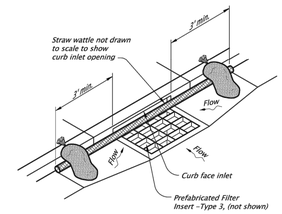
(Type 7 cont.)
Use 12" to 18" dia sock in non-traffic areas or areas where the larger socks can be used safely.
use synthetic mesh socks for temporary installations.

Type 10 – Curb inlet sediment dam
Fit curb inlet sediment dam snugly into inlet mouth. Curb inlet sediment dam is required for use with inlet filter insert where at-grade inlet grate and curb inlet are combined at a catch basin.

Type 11 – Wattle barrier with filter insert
Install prefabricated filter insert per Type 3 detail.
Install wattles over opening and 36" to each side of opening tight against curb. Adjust wattle to force storm water to flow through filter insert or wattle prior to leaving the site.
Adjust, replace or modify the inlet protection as needed to prevent sediment laden water from entering the catch basin.



CURB INLET SEDIMENT DAM - TYPE 10
NOT TO SCALE



WATTLE BARRIER WITH FILTER INSERT - TYPE 11
NOT TO SCALE

CALC. BOOK NO. N/A

SDR DATE January, 2021

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OREGON STANDARD DRAWINGS

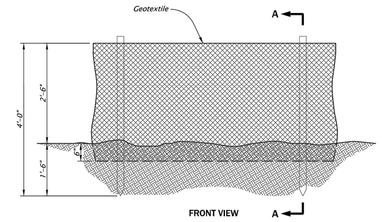
INLET PROTECTION
TYPE 2, 3, 6, 7, 10 AND 11

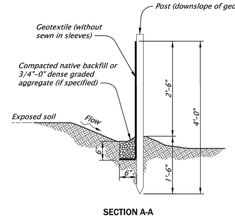
2021

DATE	REVISION DESCRIPTION
Jan 2021	Removed Calc book numbers
Jan 2021	Moved notes up from overlapping the sheet border

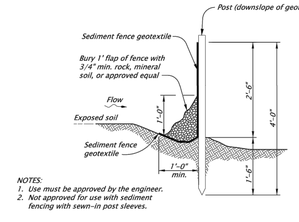
RD1010

Effective Date: June 1, 2021 - November 30, 2021



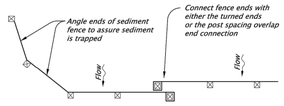


SEDIMENT FENCE AND GEOTEXTILE BURY DETAIL - TYPE 1
NOT TO SCALE

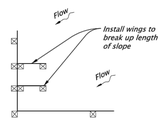


NOTES:
1. *Use must be approved by the engineer.*
2. *Not approved for use with sediment fencing with sewn-in post sleeves.*

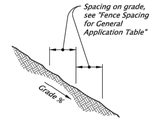
ALTERNATE SEDIMENT FENCE WITHOUT TRENCHING - TYPE 2
NOT TO SCALE



PLAN VIEW



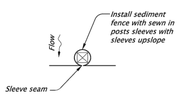
TERMINATION AT CORNER OR PROPERTY LINE



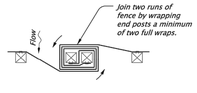
GENERAL NOTES:
1. *Use 2"x2" wood fence posts.*
2. *Posts to be installed on downhill side of sediment fence geotextile. Position posts to prevent separation from geotextile.*
3. *Compact filter fabric trench backfill and soil on uphill side of fence.*
4. *Locate fence no closer than three feet to the toe of a slope.*
5. *Wing spacing shall comply with "Fence Spacing for General Application Table".*

FENCE SPACING FOR GENERAL APPLICATION TABLE	
INSTALL PARALLEL ALONG CONTOURS AS FOLLOWS	
GRADE	*MAXIMUM SPACING ON GRADE*
Grade < 10%	300'
10% ≤ Grade < 15%	150'
15% ≤ Grade < 20%	100'
20% ≤ Grade < 30%	50'
30% ≤ Grade	25'

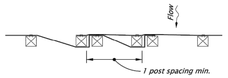
POST SPACING TABLE	
6"	Sediment Fence with Geotextile elongation less than 50%
4"	Sediment Fence with Geotextile elongation 50% or more



GEOTEXTILE WITH POST SLEEVES



TURNED ENDS CONNECTION



POST SPACING OVERLAP CONNECTION

GEOTEXTILE END CONNECTIONS
NOT TO SCALE

CALC. BOOK NO. N/A

SDR DATE January, 2021

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OREGON STANDARD DRAWINGS

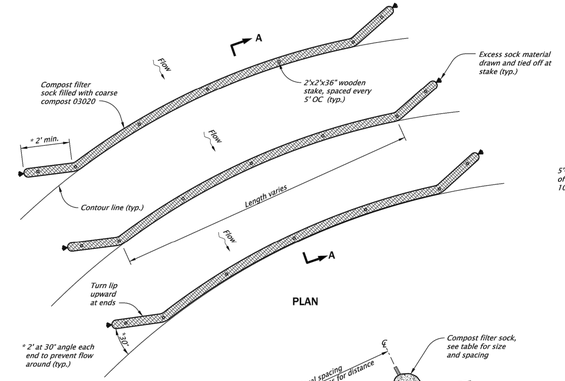
SEDIMENT FENCE

2021

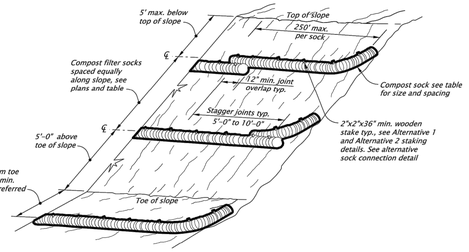
DATE	REVISION DESCRIPTION
Jan 2021	Removed Calc book numbers

RD1040

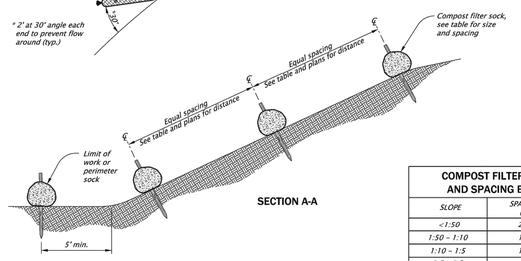
Effective Date: June 1, 2021 - November 30, 2021



PLAN

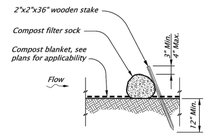


SLOPE APPLICATION - PERSPECTIVE VIEW

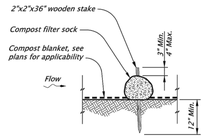


SECTION A-A

NOTE:
Fully biodegradable compost sock mesh is recommended for permanent installations. Where compost socks must be moved or removed, synthetic sock mesh should be used.



ALTERNATIVE 1 (Staking)



ALTERNATIVE 2 (Staking)

COMPOST FILTER SOCK DIAMETER AND SPACING BASED ON SLOPE		
SLOPE	*SPACING (ft)*	*DIAMETER (in)*
<1:50	250	8
1:50 – 1:10	125	12
1:10 – 1:5	100	12
1:5 – 1:2	50	18
>1:2	25	18

COMPOST FILTER SOCK
NOT TO SCALE

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OREGON STANDARD DRAWINGS

SEDIMENT BARRIER
TYPE 8

2021

DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

CALC. BOOK NO. N/A

SDR DATE 20-JAN-2021

RD1032

Effective Date: June 1, 2023 – November 30, 2023

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Duluth + Minneapolis, MN
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Project No: 20198.3

WATER RESILIENCY PROJECT
PHASE 1 - SEISMIC IMPROVEMENTS
CITY OF CANNON BEACH, OR 97110

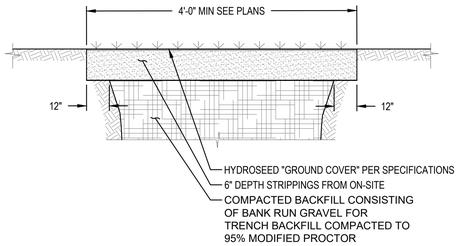
ENGINEERING PLAN
Issue Date: 7/14/2023

Project Manager TWT
Drawn by TJM
Checked by MRL

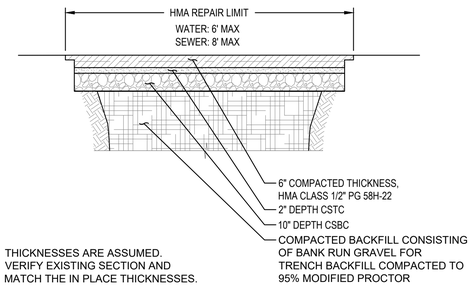
SITE DETAILS

C190

BID PLAN SET

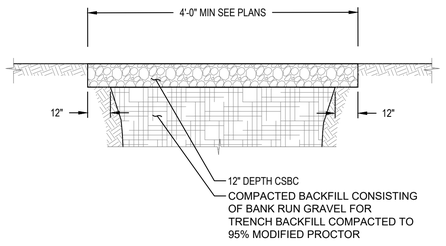


1 HYDROSEED REPAIR
NOT TO SCALE

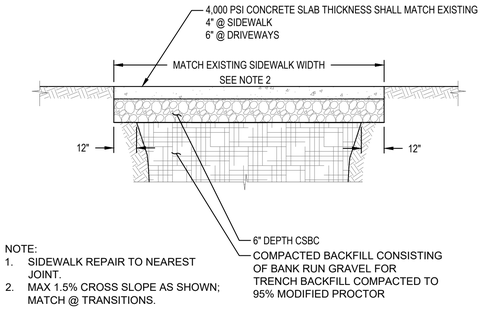


THICKNESSES ARE ASSUMED.
VERIFY EXISTING SECTION AND MATCH THE IN PLACE THICKNESSES.

2 HMA REPAIR
NOT TO SCALE

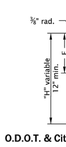


3 GRAVEL REPAIR
NOT TO SCALE

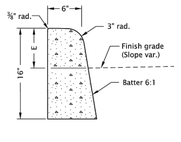


NOTE:
1. SIDEWALK REPAIR TO NEAREST JOINT.
2. MAX 1.5% CROSS SLOPE AS SHOWN; MATCH @ TRANSITIONS.

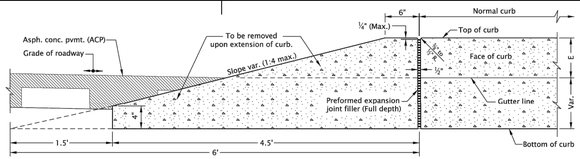
4 CONCRETE SIDEWALK REPAIR
NOT TO SCALE



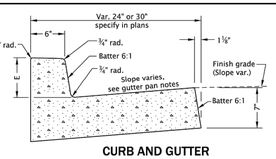
O.D.O.T. & City of Portland Standard "H"=16"
STANDARD CURB
(See general note 11)



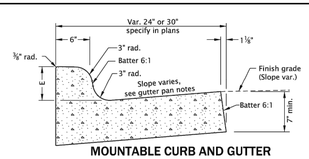
MOUNTABLE CURB
(See general note 11)



CURB ENDING DETAIL



CURB AND GUTTER



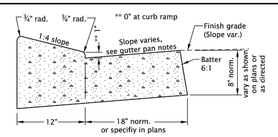
MOUNTABLE CURB AND GUTTER

GUTTER PAN NOTES:

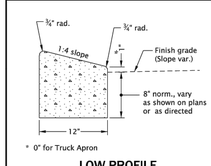
Slope 5.0% normal.

Slope 4.0% max. at curb ramps.

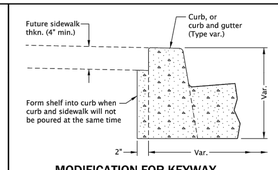
Vary slope as reqd. for drainage. Vary where shown on plans, and allowed by jurisdiction.



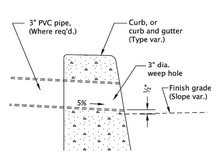
LOW PROFILE MOUNTABLE CURB AND GUTTER
(Where shown on plans)



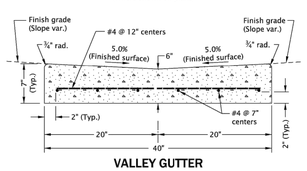
LOW PROFILE MOUNTABLE CURB
(See general note 11)



MODIFICATION FOR KEYWAY
(Where shown on plans)



WEEP HOLE DETAIL
(Where shown on plans, and allowed by jurisdiction)



VALLEY GUTTER

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Curb exposure "E" = 6" to 9", as measured vertically from flowline to highest point on curb. Vary as shown on plans or as directed. O.D.O.T standard "E"=7".
2. Const. curb expansion joints at 200' maximum spacing, and at points of tangency, and at ends of each driveways.
3. Const. curb contraction joints at 15' maximum spacing, and at ends of each inlet and curb ramp.
4. Transitions shall be used to connect curbs of different exposures "E". ("E" Is the total vertical dimension of those curb surfaces having a slope of 1:1 or steeper). Minimum desirable transition length shall be 20' for each 1" difference in "E".
5. Tops of all curbs shall slope toward the roadway at 1.5% max. (Max. 2.0% finished surface slope), unless otherwise shown, or as directed.
6. Dimensions are nominal, vary to conform with curb machine approved by the engineer.
7. Dimensions adjacent to radii are measured to the point of intersection of curb surfaces.
8. For sidewalk details, and monolithic curb & sidewalk, see Std. Dwgs. RD720 & RD721.
9. For drainage curbs, see Std. Dwg. RD701.
10. For curb ramp details, see Std. Dwgs. RD900 series.
11. On or along state highways, curb and gutter is required at curb ramp.

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

CURBS

2021

DATE	REVISION DESCRIPTION

CALC BOOK NO. N/A | SDR DATE 20-JUL-2020 | **RD700**

NATIVE GRASS SEED MIXTURE FOR MAINTENANCE USE
OREGON COAST RANGE (CR) ECO-REGON

ELEVATION RANGE: 450-750 METERS (1,200 M PEAKS): MOISTURE RANGE: 65-100+ CM. / YEAR

SPECIES (SCI NAME)	SPECIES (COMMON NAME)	NATIVE HABIT (Y/N)	NOXIOUS (Y/N)	WILDLIFE VALUE (COVER/FORAGE)	MATURE HEIGHT (CM)	LIFE CYCLE	# PURE LIVE SEEDS/m2	SEEDING RATE GRAMS PLS/ha	SEEDING RATE LBS. PLS/ACRE
FESTUCA RUBRA	RED FESCUE	Y	N	C/F	30-60	P	125	1298	1.15 (45.8 OZ.)
ELYMUS GLAUCUS	WILD RYE	Y	N	C/F	60+	P	125	4730	4.22 (16.7 OZ.)
BROMUS CARINATUS	CALIFORNIA BROME	Y	N	C	30-60	P	75	5325	4.75 (188 OZ.)
AGROSTIS EXARATA	SPIKE GRASS	Y	N	C	30-50	P	100	113	0.10 (4.0 OZ.)
GLYCERIA OCCIDENTALIS	MANNAGRASS	Y	N	C/F	30-60	P	75	1332	1.2 (47.0 OZ.)
							500 SEEDS/m2 COVERAGE	12,800 GRAMS PLS/ha	11.4 LBS PLS/AC

NOMENCLATURE USE FOR SPECIES IS CONSISTENT WITH HITCHCOCK AND CRANQUIST 1973 AND/OR NAME USED IN SEED CATALOGUES.

RECOMMENDED SEEDING RATE: 12.8 KG/KA (11.4 LBS/ACRE)

SUGGESTED SITE PREPARATION AND APPLICATION:

ON GRADES GREATER THAN 40% MAY BE APPLIED IN COMBINATION WITH SOIL-GUARD™ OR CELLULOSE MULCH WITH TACKIFIER THEN APPLY @ 200% OF RECOMMENDED SEEDING RATE. USE OF FERTILIZER IS NOT RECOMMENDED WITH THIS MIXTUE.

TEMPORARY SEEDING DATES:

WEST OF THE CASCADES - YEAR ROUND

EAST OF THE CASCADES - OCTOBER 1 THROUGH APRIL 30

WITHIN TEMPORARY SEEDING DATES, USE TEMPORARY SEEDING TO TEMPORARILY STABILIZE DISTURBED SOILS AND SLOPES NOT AT FINISHED GRADE, WHICH WILL BE EXPOSED FOR 2 MONTHS OR LONGER BEFORE BEING RE-DISTURBED. AREAS NOT REQUIRING TEMPORARY SEEDING OR TEMPORARY MULCHING INCLUDE EMBANKMENT SUB-GRADE OR AREAS WHERE PAVEMENT WILL BE PLACED.

PERMANMENT SEEDING DATES:

WEST OF THE CASCADES - AUGUST 1 THROUGH SEPTEMBER 15 AND FEBRUARY 1 THROUGH APRIL 30

EAST OF THE CASCADES - OCTOBER 1 THROUGH JANUARY 31

PERMANENT SEEDING WORK DONE OUTSIDE THE PERMANENT SEEDING DATES IN CONJUNCTION WITH PERMANENT MULCHING TO STABILIZE EXPOSED SOILS COMPLETED TO FINISHED GRADE SHALL BE CONSIDERED TEMPORARY UNTIL THREE WEEKS INTO THE NEXT PERMANENT SEEDING DATE. AT THAT TIME THE SEEDING WILL BE CONSIDERED PERMANENT IF AN ACCEPTABLE STAND OF GRASS, PROVIDING A UNIFORM COVERAGE AT 70% DENSITY OF THE SURROUNDING EXISTING GRASS AREAS, IN ACHIVED. IF EARLY GERMINATION OCCURRED AND THE GRASS DIED, OR AN ACCEPTABLE STAND OF GRASS IS NOT ACHIEVED, RE-SEED AND FERILITZE THE AREA ACCORDING TO THE PERMANENT SEEDING REQUIREMENTS.

COMPATIBLE TEMPORARY* EROSION CONTROL

CELLULOSE FIBER WITH TACKIFIER APPLIED WITH HYDRO-SEEDER.

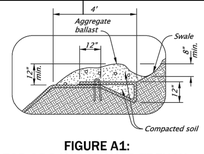


FIGURE A1:
TOP OF BANK ANCHOR TRENCH, H>3' AND TERMINAL SLOPE
NOT TO SCALE

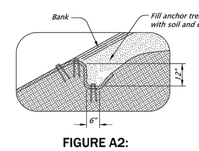


FIGURE A2:
TOP OF BANK ANCHOR TRENCH, H<3'
NOT TO SCALE

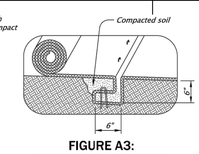


FIGURE A3:
CHANNEL CHECK SLOT
NOT TO SCALE

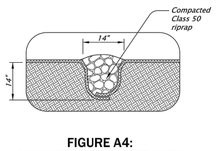


FIGURE A4:
CHANNEL CHECK SLOT WITH ROCK BACKFILL
NOT TO SCALE

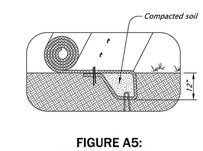
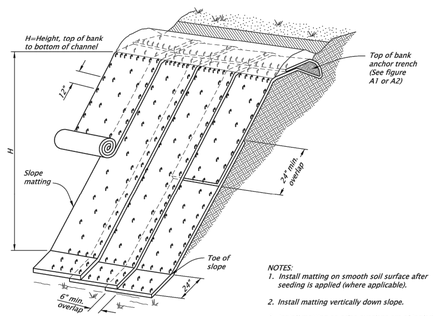
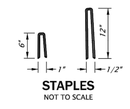


FIGURE A5:
INITIAL CHANNEL ANCHOR TRENCH
NOT TO SCALE



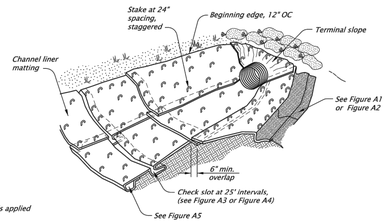
SLOPE MATTING ISOMETRIC VIEW
NOT TO SCALE

NOTES:
1. *Install matting on smooth soil surface after seeding is applied (where applicable).*
2. *Install matting vertically down slope.*
3. *Install matting so edge overlaps are shingled away from prevailing winds.*
4. *Place fastener at 12" OC on matting edges*
5. *Overlap upper mat over lower mat, and fasten.*
6. *Stagger alternate rows of fasteners placed at 24" OC*
7. *Extend mat 24" beyond toe of slope; fold mat back under 4" and fasten.*
8. *Matting Types A through E: Furnish fully biodegradable product. Matting with plastic or photodegradable components will not be accepted.*



STAPLES
NOT TO SCALE

NOTES:
1. *Install matting on smooth soil surface after seeding is applied (where applicable).*
2. *Install channel liner matting, in the direction of water flow. Anchor upstream end of mat with check slot for culvert outfalls, place mat under pipe 12" minimum upstream from pipe outlet.*
3. *Construct check slots across channel bottom at 25' spacing and at the end of each mat (Fig. A3 or A4).*
4. *Overlap side channel liner matting edges 6" over the center channel liner matting and fasten edges 12" OC Continue overlap and stapling pattern for each additional side channel liner mat.*
5. *Lap upstream matting end 12" over beginning edge of downstream matting. Fasten 12" OC*
6. *Anchor top edge of side channel matting in trench and fasten 12" OC (Fig. A2).*
7. *Fasten matting interior at 24" OC with staggered spacing.*
8. *Construct initial anchor trench at downstream end of matting and terminal slope anchor at upstream end.*
9. *Matting Types A through E: Furnish fully biodegradable product. Matting with plastic or photodegradable components will not be accepted.*



CHANNEL MATTING ISOMETRIC VIEW
NOT TO SCALE

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OREGON STANDARD DRAWINGS

SLOPE AND CHANNEL MATTING

2021

DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

CALC BOOK NO. N/A | SDR DATE 20-JAN-2021 | **RD1055**

Effective Date: June 1, 2023 – November 30, 2023

Know what's **below.** **Call** before you dig.
CALL 2 BUSINESS DAYS BEFORE YOU DIG.
CAUTION UTILITY INFORMATION IS APPROXIMATE.
VERIFY ALL UTILITIES PRIOR TO CONSTRUCTION.

Revisions:

LINE IS 1" ON FULL SCALE DRAWING

WINDSOR ENGINEERS
Ridgefield, WA
Duluth + Minneapolis, MN
www.windsorengineers.com
Project No: 20198.3

REGISTERED PROFESSIONAL ENGINEER 60298PE OREGON Travis W. Tormanen Month 9, 1998

EXPIRES: 06-30-24

WATER RESILIENCY PROJECT
PHASE 1 - SEISMIC IMPROVEMENTS
CITY OF CANNON BEACH, OR 97110

ENGINEERING PLAN
Issue Date: 7/14/2023

Project Manager TWT
Drawn by TJM
Checked by MRL

SITE DETAILS

C191

BID PLAN SET

PLOT DATE: 7/17/2023 6:13 PM - FILE: C:\Users\MARCUS\OneDrive - Windsor Engineers\05_Projects\20020\20198.3 Cannon Beach Seaview Valves\02_Drawings\01_Working\04_Final Sheets\20198.3_DET.dwg

GENERAL NOTE:

1) CONTRACTOR TO FOLLOW ALL REQUIREMENTS IN THE ODOT WORK ZONE TRAFFIC CONTROL GUIDELINES FOR MAINTENANCE OPERATIONS IN THE ODOT TRAFFIC CONTROL PLANS DESIGN MANUAL.

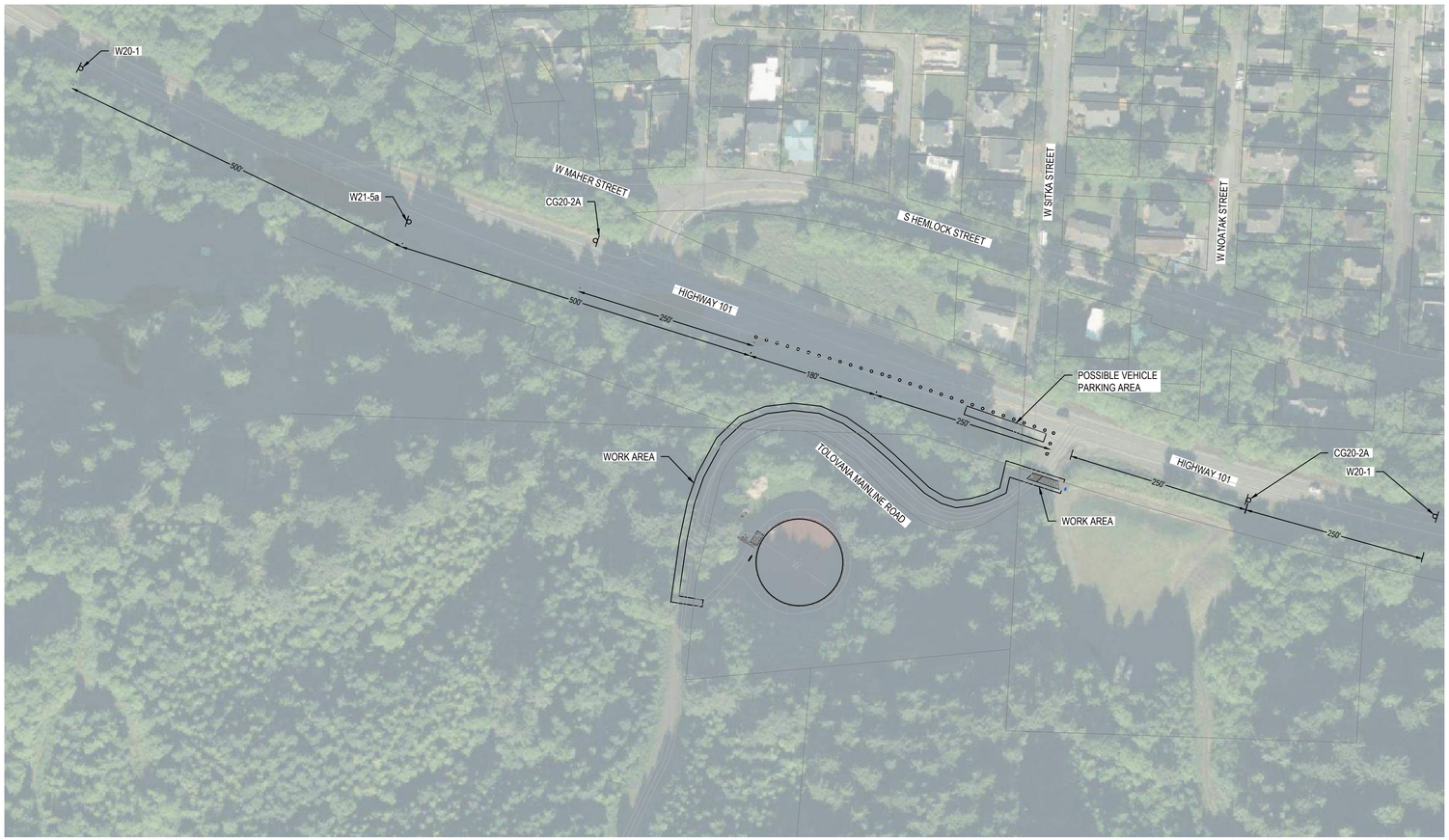
2) USE 3.5.1 20-MINUTE STOP OR HOLD ONLY WHEN CONSTRUCTION EQUIPMENT NEEDS TO BLOCK TRAFFIC TO TIE ROAD MATERIAL INTO EXISTING STREETS. THIS WILL BE CONSIDERED A TRAFFIC HOLD AND SHALL NOT LAST LONGER THEN 20 MINUTES.

3) ROADWAY DROP OFF GREATER THEN 2" ONLY ALLOWED FOR SHORT DURATION AND SHALL BE FILLED TO MEET TM800 AS SOON AS POSSIBLE FOR PUBLIC SAFETY.

4) CHANNELIZING DEVICES AND FLAGGING STATION TO BE REMOVED FROM DRIVE LANES DURING WEEKENDS, AFTER WEEK DAY WORKING HOURS, AND ANY PERIODS OF CONSTRUCTION WHERE NO WORK IS BEING DONE IN CITY, COUNTY, AND STATE.

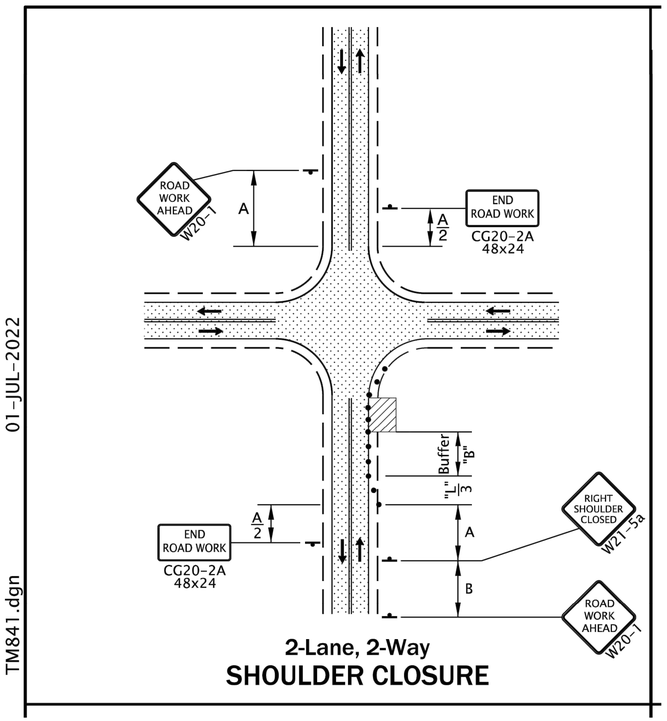
5) SEE SHEETS C292 -C294 FOR TRAFFIC DETAILS.

6) HIGHWAY 101 SPEED LIMIT = 55 MPH.



PLAN
SCALE: 1" = 100'

0 100' 200'



2-Lane, 2-Way
SHOULDER CLOSURE

KEY MAP
Scale: NTS

811 Know what's **below.** **Call** before you dig.
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Revisions:

LINE IS 1" ON FULL SCALE DRAWING

WINDSOR ENGINEERS
Ridgefield, WA
Duluth + Minneapolis, MN
www.windsorengineers.com
Project No: 20198.3

REGISTERED PROFESSIONAL ENGINEER
60239PE
OREGON
Month 9, 1988
TRAVIS W. TORMANEN
EXPIRES: 06-30-24

WATER RESILIENCY PROJECT
PHASE 1 - SEISMIC IMPROVEMENTS
CITY OF CANNON BEACH, OR 97110

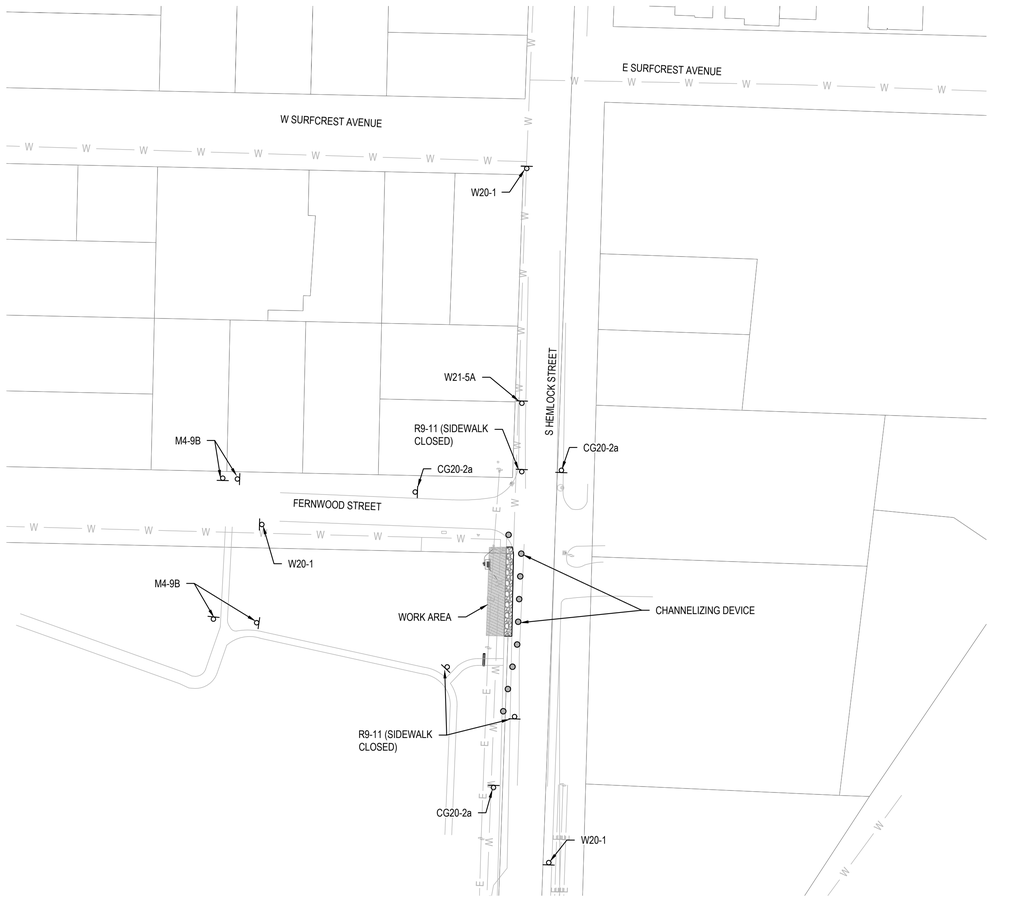
ENGINEERING PLAN
Issue Date: 7/14/2023

Project Manager TWT
Drawn by TJM
Checked by MRL

TRAFFIC CONTROL - TOLOVANA RESERVOIR

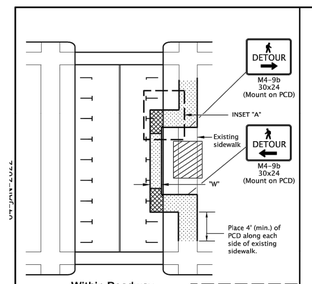
C290

BID PLAN SET



PLAN

SCALE: 1" = 50'



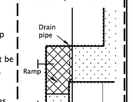
Within Roadway
SIDEWALK DIVERSION

NOTES:

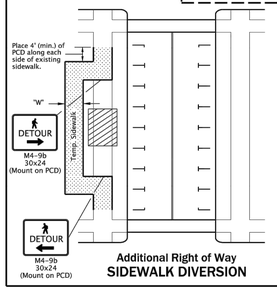
- Place or construct temp. sidewalk ramp, as needed.
- For roadways with a pre-construction posted speed of 40 mph or less.
- See inset "A" for Temp. Sidewalk Ramp details.
- "W" = 60", or, where 60" width cannot be maintained through the entire route, provide 48" min. width with 60" x 60" passing spaces every 200 ft.
- Use temporary ADA compliant surfaces to cross planter strips or other non-traversable surfaces.

NOTES:

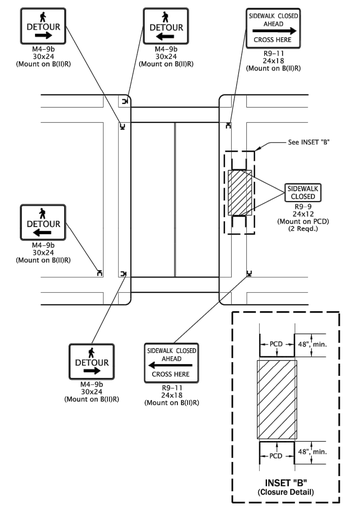
- Ramp size will vary. Ramp must meet ADA requirements incl. max. finished surf. slope of 8.3% and max. finished cross slope of 2.0%.



INSET "A"
(Temp. Sidewalk Ramp)



Additional Right of Way
SIDEWALK DIVERSION



INSET "B"
(Closure Detail)

SIDEWALK CLOSURE, MIDBLOCK

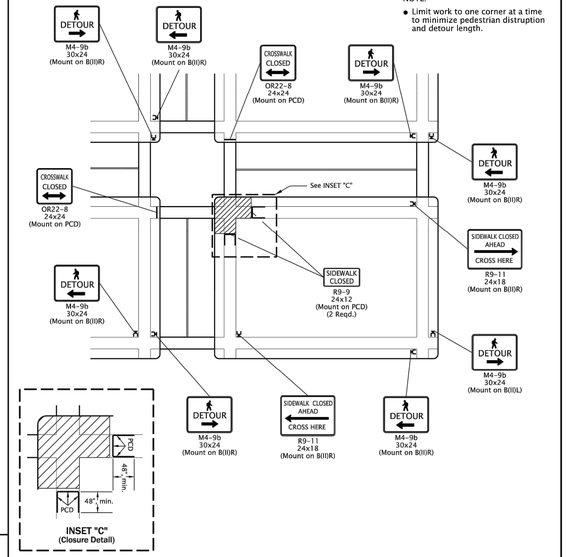
GENERAL NOTES FOR ALL DETAILS:

- When closing or relocating crosswalks or other pedestrian facilities provide ADA compliant facilities. Include accessibility features consistent with existing pedestrian facilities by providing adequate slope transitions and surfacing.
- Provide non-slip, 60 inch minimum wide surface through entire pedestrian route. If not possible, provide 48" min. width with 60" x 60" passing spaces every 200 feet along the route.
- Only TCD for pedestrians are shown. Other devices may be necessary to control vehicular traffic.
- Stage work, as necessary, to provide a temporary pedestrian access route at all times. For roadways with no available detours, maintain one open sidewalk at all times.
- Minimize pedestrian out-of-direction travel.
- To be accompanied by Dwg. Nos. TM820 & TM821.

UNDER PEDESTRIAN TRAFFIC
UNDER CONSTRUCTION
PEDESTRIAN CHANNELIZING DEVICE (PCD)

NOTE:

- Limit work to one corner at a time to minimize pedestrian distruption and detour length.



INSET "C"
(Closure Detail)

SIDEWALK CLOSURE, CORNER

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OREGON STANDARD DRAWINGS

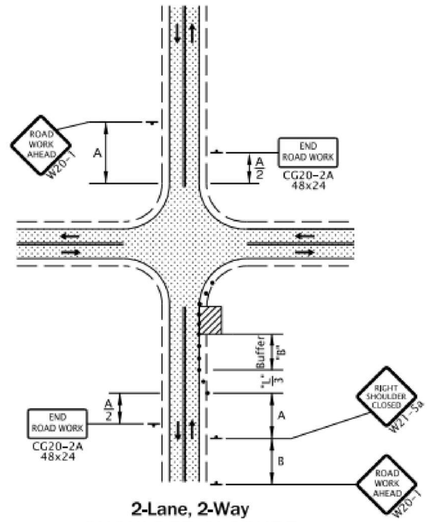
TEMPORARY PEDESTRIAN ACCESSIBLE ROUTES

2021

DATE	REVISION DESCRIPTION
01-2022	Revised notes for temporary sidewalk ramp.

CALC. BOOK NO. - - - N/A - - - SDR DATE 04-JAN-2022 **TM844**

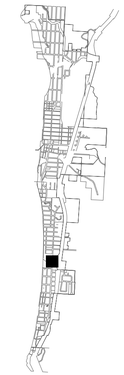
Effective Date: June 1, 2023 - November 30, 2023



2-Lane, 2-Way
SHOULDER CLOSURE

GENERAL NOTE:

1) CONTRACTOR TO FOLLOW ALL REQUIREMENTS IN THE ODOT WORK ZONE TRAFFIC CONTROL GUIDELINES FOR MAINTENANCE OPERATIONS IN THE ODOT TRAFFIC CONTROL PLANS DESIGN MANUAL.
2) USE 3.5.1 20-MINUTE STOP OR HOLD ONLY WHEN CONSTRUCTION EQUIPMENT NEEDS TO BLOCK TRAFFIC TO TIE ROAD MATERIAL INTO EXISTING STREETS. THIS WILL BE CONSIDERED A TRAFFIC HOLD AND SHALL NOT LAST LONGER THEN 20 MINUTES.
3) ROADWAY DROP OFF GREATER THEN 2" ONLY ALLOWED FOR SHORT DURATION AND SHALL BE FILLED TO MEET TM800 AS SOON AS POSSIBLE FOR PUBLIC SAFETY.
4) CHANNELIZING DEVICES AND FLAGGING STATION TO BE REMOVED FROM DRIVE LANES DURING WEEKENDS, AFTER WEEK DAY WORKING HOURS, AND ANY PERIODS OF CONSTRUCTION WHERE NO WORK IS BEING DONE IN CITY, COUNTY, AND STATE.
5) SEE SHEETS C292 -C294 FOR TRAFFIC DETAILS.
6) STREET SPEED LIMIT = 30 MPH.



KEY MAP

Scale: NTS

811 Know what's **below.** **Call** before you dig.
CALL 2 BUSINESS DAYS BEFORE YOU DIG.
CAUTION UTILITY INFORMATION IS APPROXIMATE.
VERIFY ALL UTILITIES PRIOR TO CONSTRUCTION.

Revisions:

LINE IS 1" ON FULL SCALE DRAWING

WINDSOR ENGINEERS
Ridgefield, WA
Duluth + Minneapolis, MN
www.windsorengineers.com
Project No: 20198.3

REGISTERED PROFESSIONAL ENGINEER
60299PE
OREGON
March 9, 1999
TRAVIS W. TORMANEN
EXPIRES: 06-30-24

WATER RESILIENCY PROJECT
PHASE 1 - SEISMIC IMPROVEMENTS
CITY OF CANNON BEACH, OR 97110

ENGINEERING PLAN
Issue Date: 7/14/2023

TRAFFIC CONTROL - ISOLATION VALVE 4

Project Manager TWT
Drawn by TJM
Checked by MRL

C291

BID PLAN SET

PLOT DATE: 7/17/2023 5:13 PM - FILE: C:\Users\MARCUS\OneDrive - Windsor Engineers\05_Projects\2020\20198.3 Cannon Beach Seismic Valves\02_Drawings\01_Working\04_Final Sheets\20198.3_traffic.dwg

TAPER TYPES & FORMULAS	
TAPER	FORMULA
Merging (Lane Closure)	"L"
Shifting	"L"/2 or ½"L"
Shoulder Closure	"L"/3 or ⅓"L"
Flagging (See Drg. TM850)	50' – 100'
Downstream (Termination)	Varies (See Drawings)

★ Use Pre-Construction Posted Speed to select the Speed from the Tables below.

TEMPORARY BARRIER FLARE RATE TABLE	
★SPEED (mph)	MINIMUM FLARE RATE
≤ 30	8:1
35	9:1
40	10:1
45	12:1
50	14:1
55	16:1
60	18:1
65	19:1
70	20:1

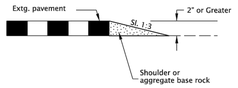
MINIMUM LENGTHS TABLE					
"L" VALUE FOR TAPERS (ft)					BUFFER "B" (ft)
★ SPEED (mph)	W = Lane or Shoulder Width being closed or shifted				
	W ≤ 10	W – 12	W = 14	W – 16	
25	105	125	145	165	75
30	150	180	210	240	100
35	205	245	285	325	125
40	265	320	375	430	150
45	450	540	630	720	180
50	500	600	700	800	210
55	550	660	770	880	250
60	600	720	840	960	285
65	650	780	910	1000	325
70	700	840	980	1000	365
FREEWAYS					
55	1000	1000	1000	1000	250
60	1000	1000	1000	1000	285
65	1000	1000	1000	1000	325
70	1000	1000	1000	1000	365

NOTES:
- For Lane closures where W < 10', use "L" value for W = 10'.
- For Shoulder closures where W < 10', use "L" value for W = 10' or calculate "L" using formula, for Speeds > 45: L = WS, Speeds < 45: L = S²W/60, S = Speed, W=Width

TRAFFIC CONTROL DEVICES (TCD) SPACING TABLE				
★ SPEED (mph)	Sign Spacing (ft)			Max. Channelizing Device Spacing (ft)
	A	B	C	
20 – 30	100	100	100	20
35 – 40	350	350	350	20
45 – 55	500	500	500	40
60 – 70	700	700	700	40
Freeway	1000	1500	2640	40

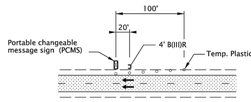
NOTES:
- Place traffic control devices on 10 ft. spacing for intersection and access radii.
- When necessary, sign spacing may be adjusted to fit site conditions. Limit spacing adjustments to 30% of the "A" dimension for all speeds.

NOTES:
- When paved shoulders adjacent to excavations are less than four feet wide protect longitudinal abrupt edge as shown.
- Use aggregate wedge when abrupt edge is 2 inches or greater.



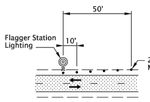
EXCAVATION ABRUPT EDGE

NOTES:
- Install PCMS beyond the outside shoulder, when possible.
- Use the appropriate type of barricade panels for PCMS location. Right shoulder, use Type B(III)R Left shoulder, use Type B(III)L
- Use six drums in shoulder taper on 20' spacing. The drums and barricade may be omitted when PCMS is placed behind a roadside barrier.
- Detail as shown is used for trailered and non-crashworthy components of:
  - Portable Traffic Signals
  - Smart Work Zone Systems



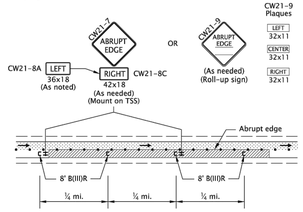
PORTABLE CHANGEABLE MESSAGE SIGN (PCMS) INSTALLATION

NOTES:
- Install Flagger Station Lighting beyond the outside shoulder, where practical.
- Use six tubular markers in shoulder taper on 10' spacing.
- Place cart / generator / power supply off of the shoulder, as far as practical.



FLAGGER STATION LIGHTING DELINEATION

NOTES:
- Abrupt edges may be created by paving, operations, excavations or other roadway work. Use abrupt edge signing for longitudinal abrupt edges of 1 inch or greater.
- If the excavation is located on left side of traffic, replace the 8' B(III)R barricades with 8' B(III)L barricades and replace the "RIGHT" (CW21-8C) riders with "LEFT" (CW21-8A) riders.
- Continue signing and other traffic control devices throughout excavation area at spacings shown.
- If roll-up signs are used, attach the correct (CW21-9) plaques to the sign face using hook and loop fasteners. Place roll-up signs in advance of barricades.



TYPICAL ABRUPT EDGE DELINEATION

GENERAL NOTES FOR ALL TCP DRAWINGS:
- Signs and other Traffic Control Devices (TCD) shown are the minimum required.
- Place a barricade approx. 20' ahead of all sequential arrow boards.
- Arrows shown in roadway are directional arrows to indicate traffic movements.
- All signs are 48" x 48" unless otherwise shown. Use fluorescent orange sheeting for the background of all temporary warning signs.
- All diamond shaped warning signs mounted on barrier sign supports shall be 36" by 36". All other signs mounted on barrier sign supports shall not exceed 12 sq. ft. in total sign area.
- Low speed highways have a pre-construction posted speed of 40 mph or less. High speed highways have a pre-construction posted speed of 45 mph or higher.
- Do not locate sign supports in locations designated for bicycle or pedestrian traffic.
- Combine drawing details to complete temporary traffic control for each work activity.
- Coordinate and control pedestrian movements through a Temporary Accessible Route using Flaggers, Traffic Control Measures, or as directed.
- To be accompanied by Dwg. Nos. TM820 & TM821.

Temp. Plastic Drums See TCD Spacing Table for max. spacing.

28" Tubular Markers See TCD Spacing Table for max. spacing.

UNDER TRAFFIC

UNDER CONSTRUCTION

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OREGON STANDARD DRAWINGS

TABLES, ABRUPT EDGE AND PCMS DETAILS

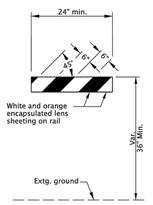
2021

DATE	REVISION DESCRIPTION
07-2022	Added a note for TPARs.

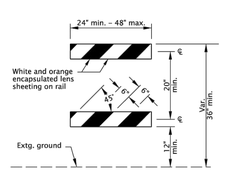
CALC BOOK NO. – – – N/A – – – | SDR DATE 01-JUL-2022 | **TM800**

TM800.dgn 01-JUL-2022

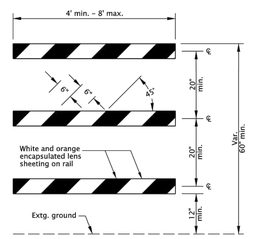
Effective Date: June 1, 2023 – November 30, 2023



TYPE I



TYPE II



TYPE III

GENERAL NOTES FOR ALL DETAILS:
- Sandbags (approximately 25 lb sack filled with sand) may be placed on lower frame to provide additional ballast.
- Ballast shall not extend above bottom rail or be suspended from barricade.
- For rails less than 36" long, 4" wide stripes shall be used.
- Rails must be 8" min. to 12" max. in height.
- Use barricades from ODOT Qualified Products List (QPL).
- Use 4' Type III barricades where horizontal space is limited.
- Do not block bike lanes or shoulders unless the facility is properly closed and signed.
- Do not place barricades in sidewalks unless sidewalk is closed and a temporary pedestrian accessible route (TPAR) is signed according to the TCP. See Dwg. No. TM844.

BARRICADE RAIL LAYOUT

NOTES:
- Markings for barricade rails shall slope downward at an angle of 45° in the direction traffic is to pass.
- Where a barricade extends entirely across a roadway, it is desirable that the stripes slope downward in the direction toward which traffic must turn in detouring.
- Where both right and left turns are provided for, slope the chevron striping downward in both directions from the center of the barricade.
- For full roadway closures, the C or LR barricade may be used. Extend barricades completely across roadway unless access is required for local road users.

DIAGRAM FOR BARRICADE PLACEMENT AND SLOPE MARKING

BARRICADE NOTATION

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OREGON STANDARD DRAWINGS

TEMPORARY BARRICADES

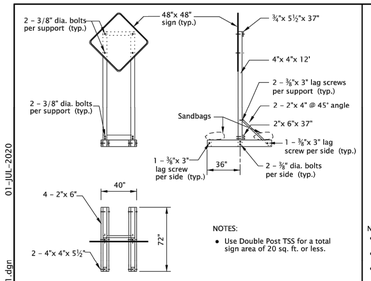
2021

DATE	REVISION DESCRIPTION

CALC BOOK NO. – – – N/A – – – | SDR DATE 01-JUL-2020 | **TM820**

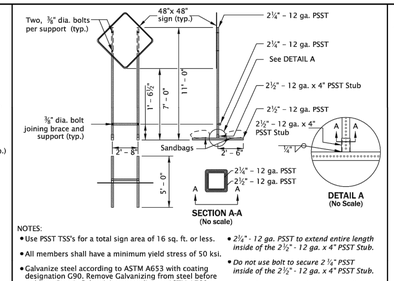
TM820.dgn 01-JUL-2020

Effective Date: June 1, 2023 – November 30, 2023



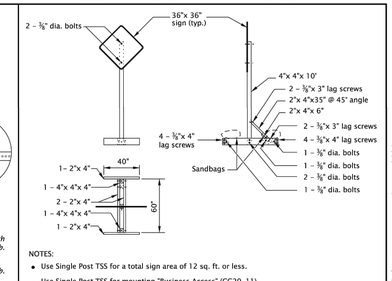
NOTES:
- Use Double Post TSS for a total sign area of 20 sq. ft. or less.

DOUBLE POST DETAIL



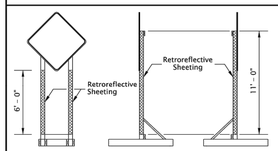
NOTES:
- Use PSST TSS's for a total sign area of 16 sq. ft. or less.
- All members shall have a minimum yield stress of 50 ksi.
- Galvanize steel according to ASTM A653 with coating designation G90. Remove Galvanizing from steel before welding. Repair Galvanizing according to ASTM A780.
- Use A325 Bolts or equivalent.
- *2¼" - 12 ga. PSST to extend entire length inside of the 2½" - 12 ga. x 4" PSST Stub.*
- *Do not use bolt to secure 2 ½" PSST inside of the 2½" - 12 ga. x 4" PSST Stub.*
- *Weld steel according to American Welding Society (AWS) D.1.1.*

PERFORATED STEEL SQUARE TUBE (PSST) DETAIL

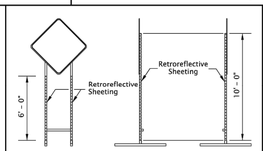


NOTES:
- Use Single Post TSS for a total sign area of 12 sq. ft. or less.
- Use Single Post TSS for mounting "Business Access" (CG20-11) signs. Do not mount signs on Type II or III Barricades.

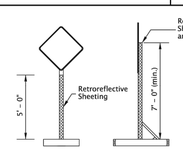
SINGLE POST DETAIL



Double Post



Perforated Steel Square Tube (PSST)



Single Post

TEMPORARY SIGN SUPPORT GENERAL NOTES:
- Do not tip over TSS at any time.
- Do not locate TSS's in locations that block pedestrian or bicycle traffic.
- For wooden TSS's, use either Douglas Fir or Hem Fir, which is surfaced four sides (S4S) and free of heart center (FOHC).
- See "Temporary Sign Placement" detail on TM822 for sign installation heights.
- Do not place or stack ballast more than 24" above the ground.
- When sign is inconsistent with current work zone conditions, cover sign: or turn sign 90 degrees away from approaching traffic. Remove TSS from roadway when signing is not needed for more than 3 days.
- Place a minimum of 50 lbs of sandbags on each of the four TSS supports legs. (25 lb. max per bag) (min. 100 lbs per side of each TSS).
- See Dwg. No. TM204 for flag board mounting detail.

NOTES:
- Apply fluorescent orange, ANSI Type VIII or IX retroreflective sheeting to TSS posts, as shown, for all temporary signs, except "STOP" and "DO NOT ENTER". For "STOP" and "DO NOT ENTER" signs, used red ANSI Type III or IV retroreflective sheeting on the TSS posts.
- Apply sign post retroreflectivity to each TSS post facing front; and to the left and right sides of the TSS, as shown. Use 3" wide sheeting for wood post TSS's. Use 2" wide sheeting for PSST TSS's.
- Sheeting may be applied directly to post material; or applied to a rigid, lightweight substrate, then securely attached to the posts.

SIGN POST REFLECTIVE SHEETING PLACEMENT

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OREGON STANDARD DRAWINGS

TEMPORARY SIGN SUPPORTS

2021

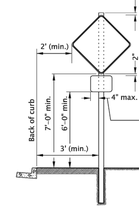
DATE	REVISION DESCRIPTION

CALC BOOK NO. – – – N/A – – – | SDR DATE 01-JUL-2020 | **TM821**

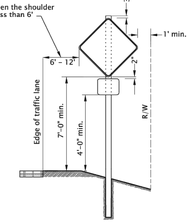
TM821.dgn 01-JUL-2020

Effective Date: June 1, 2023 – November 30, 2023

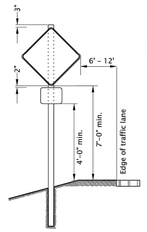
NOTES:
- Do not block bicycle lanes, sidewalks, or TPAR's with sign supports. Maintain minimum widths for these facilities according TCP Design Manual, MUTCD, ADA, or as directed.
- To be accompanied by Dwg. Nos. TM670, TM671, TM687, TM688 & TM689.



Urban Areas With Curb/Sidewalk

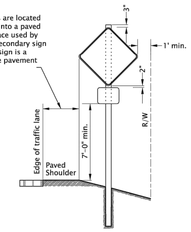


Rural Areas



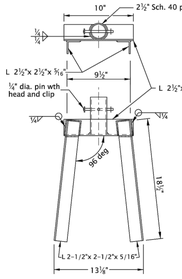
Divided Highway/Freeway Medians No Curb/Sidewalk

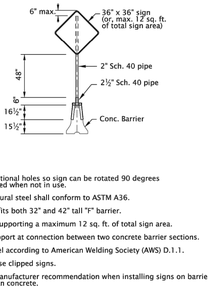
Where temporary signs are located adjacent to or intrude into a paved shoulder or other surface used by bicycle traffic, install secondary sign (plaque) so bottom of sign is a minimum of 7'0" above pavement surface, as shown.



Rural or Urban Areas - Curb or No Curb Bicycles On Shoulder

TEMPORARY SIGN PLACEMENT





NOTES:
- Drill additional holes so sign can be rotated 90 degrees and pinned when not in use.
- All structural steel shall conform to ASTM A36.
- Support fits both 32" and 42" tall "F" barrier.
- Use for supporting a maximum 12 sq. ft. of total sign area.
- Place support at connection between two concrete barrier sections.
- Weld steel according to American Welding Society (AWS) D.1.1.
- Do not use clipped signs.
- Follow manufacturer recommendation when installing signs on barrier other than concrete.

CONCRETE BARRIER SIGN SUPPORT

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OREGON STANDARD DRAWINGS

TEMPORARY SIGN SUPPORTS

2021

DATE	REVISION DESCRIPTION

CALC BOOK NO. – – – N/A – – – | SDR DATE 01-JUL-2020 | **TM822**

TM822.dgn 01-JUL-2020

Effective Date: June 1, 2023 – November 30, 2023

811 Know what's **below.** **Call** before you dig.

CALL 2 BUSINESS DAYS BEFORE YOU DIG.
CAUTION UTILITY INFORMATION IS APPROXIMATE.
VERIFY ALL UTILITIES PRIOR TO CONSTRUCTION.

Revisions:

LINE IS 1" ON FULL SCALE DRAWING

WINDSOR ENGINEERS
Ridgefield, WA
Duluth + Minneapolis, MN
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Project No: 20198.3

WATER RESILIENCY PROJECT
PHASE 1 - SEISMIC IMPROVEMENTS
CITY OF CANNON BEACH, OR 97110

ENGINEERING PLAN
Issue Date: 7/14/2023

Project Manager TWT
Drawn by TJM
Checked by MRL

TRAFFIC CONTROL DETAILS

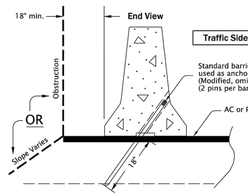
C292

BID PLAN SET

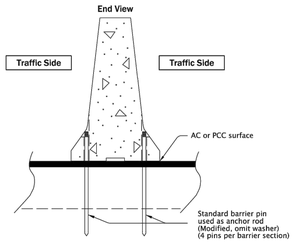
TM830.dgn 04-JAN-2022

NOTES:

- DO NOT USE ON BRIDGE DECKS. Restrain barrier on bridge decks according to Bridge Design Manual. See Chapter 1.13.1.10
- Predrill pin holes for PCC pavement placement.
- Excavation height greater than 3 feet requires proper backslope based on angle of repose, or shoring as directed.
- Place temporary barrier on smooth, solid surfacing. Maintain, smooth solid surfacing for clear area behind temporary barrier.



SECURING TEMPORARY CONCRETE BARRIER
(Shoulder Installation)

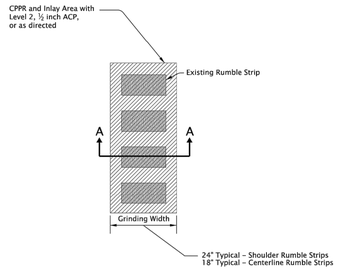


SECURING TEMPORARY TALL CONCRETE BARRIER
(Median Installation)

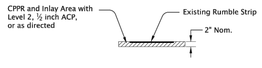
NOTES:

- CPPR and inlay existing rumble strips prior to staging traffic across the area. Common application is staging for freeway crossovers and lane shifts.
- Remove and replace existing striping as required.

UNDER CONSTRUCTION



EXISTING RUMBLE STRIP REMOVAL



SECTION A-A

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OREGON STANDARD DRAWINGS

TEMPORARY CONCRETE BARRIER AND RUMBLE STRIP DETAILS

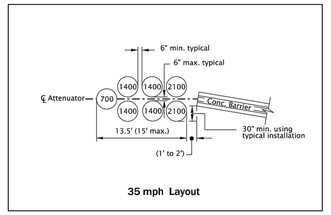
2021

DATE	REVISION DESCRIPTION
07-2021	Revised clear space to obstruction
01-2022	Added note for surfacing behind barrier

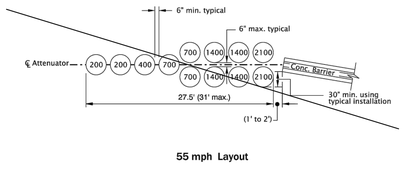
CALC BOOK NO. N/A | SDR DATE 04-JAN-2022 | **TM830**

Effective Date: June 1, 2023 – November 30, 2023

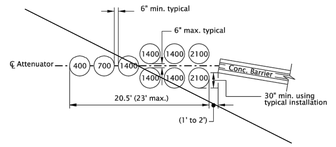
TM831.dgn 01-JUL-2020



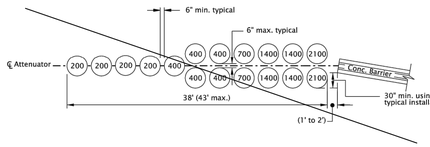
35 mph Layout



55 mph Layout

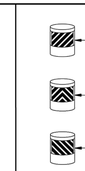


45 mph Layout



70 mph Layout

Single Barrier
TEMPORARY IMPACT ATTENUATOR LAYOUTS



OBJECT MARKERS

GENERAL NOTES FOR ALL DETAILS:

- Use the appropriate layout configuration based on the pre-construction posted speed, as approved by the Engineer.
- For posted speeds not shown, use the next higher speed for attenuator selection.
- Use Temporary Impact Attenuator from the QPL. Typical outside diameter of each module is 36".
- Typical attenuator layouts shown. Layouts may vary by both speed and manufacturer. Number shown within each module is mass of dry sand in pounds.
- Final alignment of attenuator will be established in the field, as directed. At locations where vibrations and surface slopes may cause modules to shift, modules shall be anchored to prevent movement according to manufacturer's instructions and as approved by the engineer.
- The leading module of each attenuator shall be delineated with the appropriate object marker, as shown above.
- The object marker shall be 1/16" thick aluminum sheeting approx. 24" wide, 30" deep, and covered with yellow encapsulated lens sheeting. Black stripes 5" wide shall be silk-screened on the sheeting at a 45° slope and with 4" space between stripes.
- In cold climates, mix sand with 5% rock salt by weight to prevent freezing.
- To be accompanied by Dwg. No. TM833.

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OREGON STANDARD DRAWINGS

TEMPORARY IMPACT ATTENUATORS

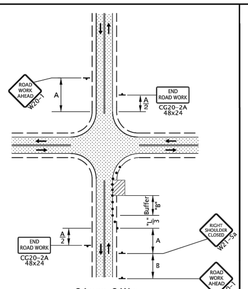
2021

DATE	REVISION DESCRIPTION

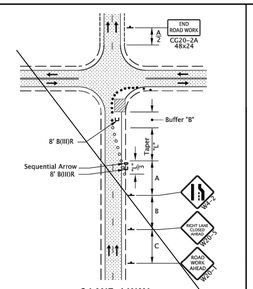
CALC BOOK NO. N/A | SDR DATE 01-JUL-2020 | **TM831**

Effective Date: June 1, 2023 – November 30, 2023

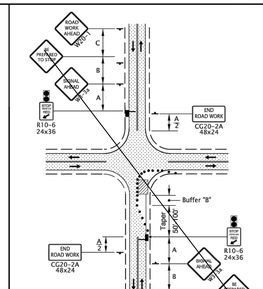
TM841.dgn 01-JUL-2022



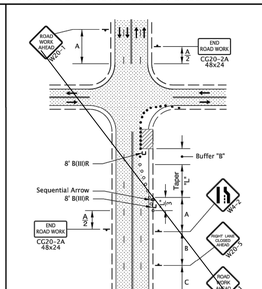
2-Lane, 2-Way
SHOULDER CLOSURE



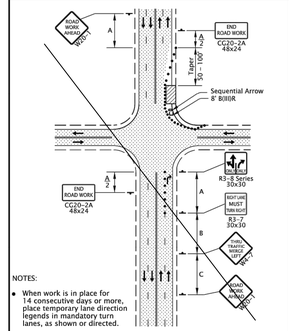
2-LANE, 1-WAY
RIGHT LANE CLOSURE



2-Lane, 2-Way
ONE LANE CLOSURE



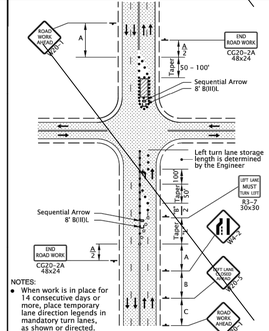
4-Lane, 2-Way
RIGHT LANE CLOSURE, NEAR SIDE



NOTES:

- When work is in place for 14 consecutive days or more, place temporary lane direction legends in mandatory turn lanes, as shown or directed.

4-Lane, 2-Way
RIGHT LANE CLOSURE, FAR SIDE



NOTES:

- When work is in place for 14 consecutive days or more, place temporary lane direction legends in mandatory turn lanes, as shown or directed.

4-Lane, 2-Way
LEFT LANE CLOSURE, FAR SIDE

GENERAL NOTES FOR ALL DETAILS:

- Additional Traffic Control Measures (TCM) may be required for all legs of the intersection.
- The "SIGNAL AHEAD" (W3-3a) sign may be substituted with the signal ahead symbol (W3-3) sign.
- To determine Taper Length ("L") and Buffer Length ("B"), use the "MINIMUM LENGTHS TABLE" on Dwg. TM800.
- For left lane or shoulder work, place TCD to close left lane or shoulder. Use "LEFT LANE CLOSED AHEAD" (W20-5) sign, "LEFT LANE ENDS" (W4-2L) symbol sign, or "LEFT SHOULDER CLOSED" (W21-5a) sign, where applicable.
- To determine sign spacing A, B, and C, use "TRAFFIC CONTROL DEVICES (TCD) SPACING TABLE" on Dwg. TM800.
- When a through road intersects within the work zone, place a "ROAD WORK AHEAD" (W20-1) sign in advance of the intersection at sign spacing A.
- Tubular markers may be used in lane closure tapers where posted speed is 40 mph or less.
- Where shoulder width is limited, Sequential Arrow may be placed within the lane closure taper.
- Place channelizing devices around intersection radii, business accesses and driveways at 10' spacing.
- Install a "BICYCLES ON ROADWAY" (CW11-1) sign in advance of the closure when a bike lane is closed, or when the shoulder is closed and bikes are expected.
- To be accompanied by Dwg. Nos. TM820, TM82, TM840 & TM854.

Automated Flagging Assistance Device (AFAD)

28" Tubular Markers See TCD Spacing Table on TM800 for max. spacing.

Temp. Plastic Drums See TCD Spacing Table on TM800 for max. spacing.

UNDER TRAFFIC

UNDER CONSTRUCTION

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OREGON STANDARD DRAWINGS

INTERSECTION WORK ZONE DETAILS

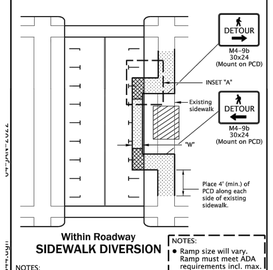
2021

DATE	REVISION DESCRIPTION

CALC BOOK NO. N/A | SDR DATE 01-JUL-2022 | **TM841**

Effective Date: June 1, 2023 – November 30, 2023

TM844.dgn 01-JUL-2022



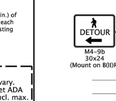
Within Roadway
SIDEWALK DIVERSION

NOTES:

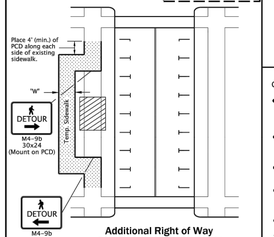
- Place or construct temp. sidewalk ramp, as needed.
- For roadways with a pre-construction posted speed of 40 mph or less.
- See inset "A" for Temp. Sidewalk Ramp details.
- "W" – 60", or, where 60" width cannot be maintained through the entire route, provide 48" min. width with 60" x 60" passing spaces every 200 ft.
- Use temporary ADA compliant surfaces to cross planter strips or other non-traversable surfaces.

NOTES:

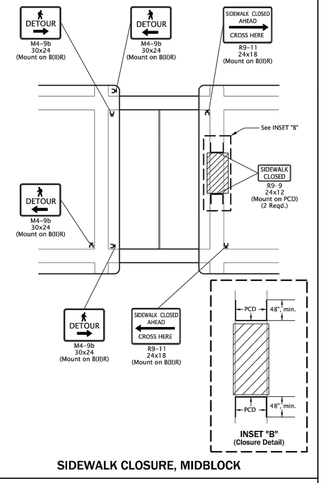
- Ramp size will vary. Ramp must meet ADA requirements incl. max. finished surf. slope of 8.3% and max. finished cross slope of 2.0%.



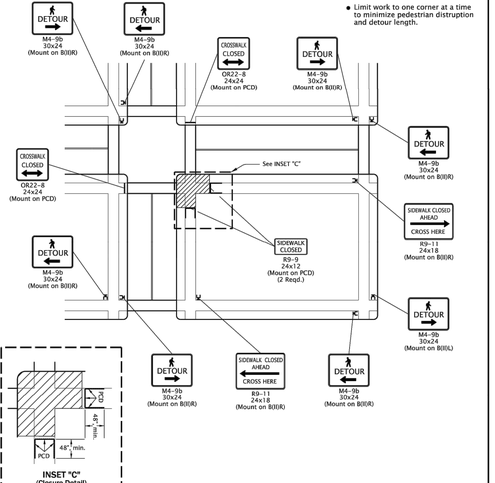
INSET "A"
(Temp. Sidewalk Ramp)



Additional Right of Way
SIDEWALK DIVERSION



SIDEWALK CLOSURE, MIDBLOCK



SIDEWALK CLOSURE, CORNER

GENERAL NOTES FOR ALL DETAILS:

- When closing or relocating crosswalks or other pedestrian facilities provide ADA compliant facilities. Include accessibility features consistent with existing pedestrian facilities by providing adequate slope transitions and surfacing.
- Provide non-slip, 60 inch minimum wide surface through entire pedestrian route. If not possible, provide 48" min. width with 60" x 60" passing spaces every 200 feet along the route.
- Only TCD for pedestrians are shown. Other devices may be necessary to control vehicular traffic.
- Stage work, as necessary, to provide a temporary pedestrian access route at all times. For roadways with no available detours, maintain one open sidewalk at all times.
- Minimize pedestrian out-of-direction travel.
- To be accompanied by Dwg. Nos. TM820 & TM821.

UNDER PEDESTRIAN TRAFFIC

UNDER CONSTRUCTION

PEDESTRIAN CHANNELIZING DEVICE (PCD)

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OREGON STANDARD DRAWINGS

TEMPORARY PEDESTRIAN ACCESSIBLE ROUTES

2021

DATE	REVISION DESCRIPTION
01-2022	Revised notes for temporary sidewalk ramp.

CALC BOOK NO. N/A | SDR DATE 04-JAN-2022 | **TM844**

Effective Date: June 1, 2023 – November 30, 2023

Revisions:

LINE IS 1" ON FULL SCALE DRAWING

WINDSOR ENGINEERS
Ridgefield, WA
Duluth + Minneapolis, MN
www.windsorengineers.com
Project No: 20198.3

WATER RESILIENCY PROJECT
PHASE 1 - SEISMIC IMPROVEMENTS
CITY OF CANNON BEACH, OR 97110

ENGINEERING PLAN
Issue Date: 7/14/2023

Project Manager TWT
Drawn by TJM
Checked by MRL

TRAFFIC CONTROL DETAILS

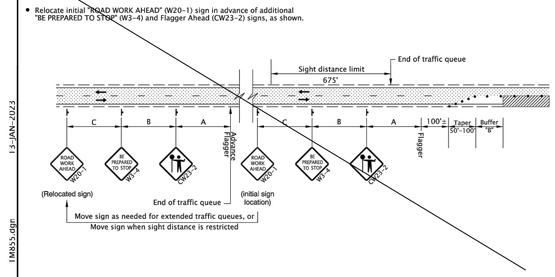
C293

BID PLAN SET

PLOT DATE: 7/17/2023 6:13 PM - FILE: C:\Users\MARCUS\OneDrive - Windsor Engineers\05_Projects\2020\20198.3 Cannon Beach Seismic Valves\02_Drawings\01_Working\04_Final Sheets\20198.3_traffic details.dwg

NOTES:

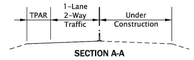
- Place Advance Flagger and additional signing when traffic queues extend beyond initial warning signing OR when sight distance is restricted.
- Relocate initial "ROAD WORK AHEAD" (W20-1) sign in advance of additional "BE PREPARED TO STOP" (W3-4) and Flagger Ahead (CW23-2) signs, as shown.
- Place additional Tubular Markers for Flagger and Advance Flagger Stations according to FLAGGER STATION DELINEATION detail.



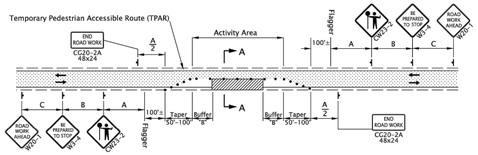
ADVANCE FLAGGER FOR EXTENDED TRAFFIC QUEUES

NOTE:

- When using pilot cars with flaggers to control traffic during paving operations, the Tubular Marker spacing along centerline may be increased to 200' within the Activity Area, as shown or as directed.
- Include "WAIT FOR FLAGGER" (CR4-23) signs mounted on Type II Barricade located approx. 50' before each Flagger.
- Coordinate and control pedestrians movements through the TPAR using Flaggers, other TCM, or as directed. When the existing shoulder is greater than or equal to 4' wide, provide a minimum of 4' of width for the TPAR.



SECTION A-A



2-Lane, 2-Way Roadway
ONE LANE CLOSURE

GENERAL NOTES FOR ALL DETAILS:

- This drawing is only intended to be used where an Automated Flagger Assistance Device (AFAD) cannot be utilized.
- The "FLAGGER" (CW23-2) symbol sign shall be used only in conjunction with the "BE PREPARED TO STOP" (W3-4) sign.
- Cover existing passing zone signing, as directed.
- Install temporary striping as required.
- To determine Taper Length ("L") and Buffer Length ("B"), use the "MINIMUM LENGTHS TABLE" shown on Dwg. No. TM800.
- To determine sign spacing A, B, and C, use "TRAFFIC CONTROL DEVICES (TCD) SPACING TABLE" on Dwg. No. TM800.
- Install a "BICYCLES ON ROADWAY" (CW11-1) sign in advance of the closure when a bike lane is closed, or when the shoulder is closed and bikes are expected.
- At night, flagger stations shall be illuminated according to the FLAGGER STATION LIGHTING DELINEATION detail on Dwg No. TM800.
- To be accompanied by Dwg. Nos. TM820 & TM821.

•••••••• 28" Tubular Markers on 10'max. spacing arround intersection radii.

• • • • • 28" Tubular Markers on 20' max. spacing for flagger tapers and stations

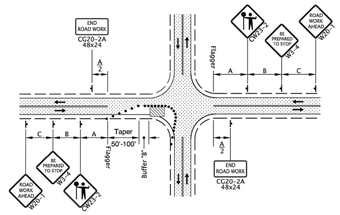
• • • 28" Tubular Markers See TCD Spacing Table on TM800 for max. spacing.

UNDER TRAFFIC

UNDER CONSTRUCTION

NOTE:

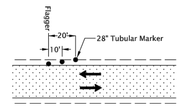
- Additional Traffic Control Measures (TCM) may be required for all legs of the intersection



2-Lane, 2-Way Roadway
ONE LANE CLOSURE, INTERSECTION

NOTE:

- Use a minimum of 3 tubular markers in shoulder taper on 10' spacing for flagger station delineation.



FLAGGER STATION DELINEATION

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OREGON STANDARD DRAWINGS

2-LANE, 2-WAY ROADWAYS

2021

DATE	REVISION DESCRIPTION

CALC. BOOK NO. N/A | ODR DATE 13-JAN-2023 | **TM855**

Effective Date: June 1, 2023 - November 30, 2023

15-JAN-2023 TM855.dgn

PLOT DATE: 7/17/2023 5:13 PM - FILE: C:\Users\MARCUS\OneDrive - Windsor Engineers\05_Projects\2020\20198.3 Cannon Beach Seismic Valves\02_Drawings\01_Working\04_Final Sheets\20198.3_traffic details.dwg

Know what's **below.** **Call** before you dig.
CALL 2 BUSINESS DAYS BEFORE YOU DIG.
CAUTION UTILITY INFORMATION IS APPROXIMATE.
VERIFY ALL UTILITIES PRIOR TO CONSTRUCTION.

Revisions:

LINE IS 1" ON FULL SCALE DRAWING

WINDSOR ENGINEERS
Ridgefield, WA
Duluth + Minneapolis, MN
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Project No: 20198.3

WATER RESILIENCY PROJECT
PHASE 1 - SEISMIC IMPROVEMENTS
CITY OF CANNON BEACH, OR 97110

ENGINEERING PLAN
Issue Date: 7/14/2023

Project Manager TWT
Drawn by TJM
Checked by MRL

TRAFFIC CONTROL DETAILS

C294

BID PLAN SET

RD250.dgn 20-JUL-2020

THRUST BLOCKING

TABLE A

CONCRETE THRUST BLOCKING (HORIZONTAL)

		Thrust (T) at fittings in Pounds				
		A	B	C	D	E
PIPE DIA.	Table Pressure PSI	Tee & Dead Ends	90 deg Bend	45 deg Bend	22.5 deg Bend	11.25 deg Bend
4"	250	3035	4320	2315	1215	610
6"	250	6860	9735	5215	2720	1375
8"	250	12185	17310	9265	4835	2430
10"	250	19045	27045	14480	7560	3800
12"	250	27405	38940	20840	10880	5465
14"	250	37320	53010	28370	14815	7445
16"	250	48740	69245	37050	19360	9735

TABLE B

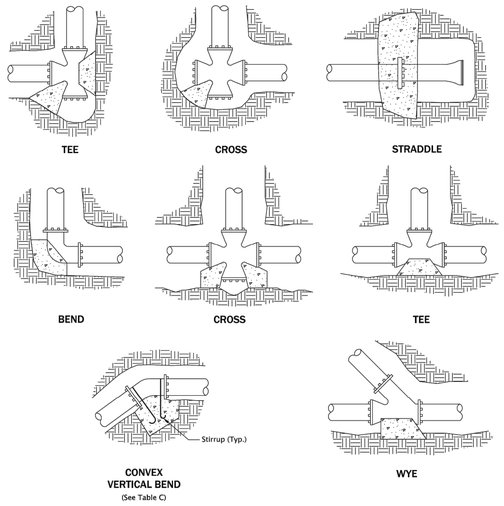
Soil Type	Soil Bearing Capacity (B) in PSF
Muck, peat, etc.	*0*
Soft Clay	*1000*
Sand	*2000*
Sand and gravel	*3000*
Sand and gravel cemented with clay	*4000*
Hard shale	*10,000*

TABLE C

CONCRETE BLOCKING FOR CONVEX VERTICAL BENDS

DIMENSION TABLE

PIPE DIA. in.	Table Pressure PSI	Bend Angle (deg)	Concrete Volume (cy)	Cube Size (ft)	Stirrup Dia. (in)	Stirrup Embmt. (in)	Stirrup Bar #
4"	250	11.25	0.21	1.8	⅜	17	5
		22.5	0.43	2.3			
		45	0.77	2.8			
6"	250	11.25	0.48	2.4	⅜	17	5
		22.5	0.95	3.0			
		45	1.79	3.6			
8"	250	11.25	0.86	2.9	⅜	17	5
		22.5	1.65	3.5			
		45	3.22	4.4			
10"	250	11.25	1.39	3.3	⅜	17	5
		22.5	2.62	4.1			
		45	4.97	4.1			
12"	250	11.25	1.94	3.7	⅜	17	*5*
		22.5	3.91	4.7			
		45	6.89	5.7	⅞	24	7
14"	250	11.25	2.62	4.1	⅜	17	5
		22.5	5.26	5.2	¾	20	6
		45	9.70	6.4	1	27	8
16"	250	11.25	3.44	4.5	⅜	17	5
		22.5	6.89	5.7	⅞	24	7
		45	12.63	7.0	1⅛	30	9



THRUST BLOCK BEARING AREA EQUATION

NOTE: WHEN THRUST BLOCK BEARING AREA IS NOT SPECIFIED ON THE PLANS OR DETERMINED BY THE ENGINEER, USE THE FOLLOWING PROCEDURE TO DETERMINE REQUIRED BEARING AREA.

1. Determine thrust (T) for type of fitting or joint and size of pipe from Table A.
2. Determine Design (Test) Pressure from Standard Specifications or Special Provisions.
3. Determine Table Pressure from Table A.
4. Determine Soil Bearing Capacity (B) of soil from Table B.
5. Determine required bearing area (A) in sq. ft. as follows:

$$\text{Thrust Block Bearing Area} = A = \left(\frac{T}{B}\right)\left(\frac{\text{Design (Test) Pressure}}{\text{Table Pressure}}\right)$$

Example: Design (Test) Pressure = 150 PSI
Pipe = 14"
Fitting = Tee
Soil = Sand

From Table A, T = 37320
From Table B, B = 2000

$$A = \left(\frac{37320}{2000}\right)\left(\frac{150}{250}\right) = 11.2 \text{ sq.ft.}$$

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Contractor to provide blocking adequate to withstand full test pressure.
2. Pour concrete blocking against undisturbed earth.
3. All concrete shall be commercial grade concrete.
4. Wrap pipe and/or fittings with 2 layers of polyethylene film where in contact with concrete
5. Keep concrete clear of all joints and accessories.
6. Stirrups shall be deformed galvanized cold rolled steel AASHTO M31 (ASTM A615), Grade 60. Coat with coal tar epoxy after installation.
7. See project plans for details not shown.

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OREGON STANDARD DRAWINGS

THRUST BLOCKING

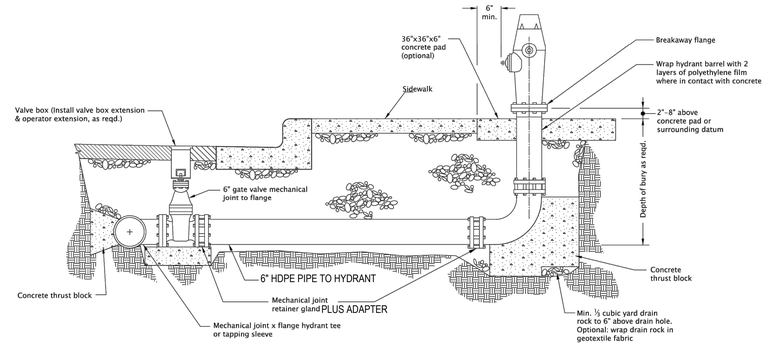
2021

DATE	REVISION DESCRIPTION

CALC BOOK NO. - - - N/A - - - | SDR DATE 25-JUL-2017 | **RD250**

Effective Date: June 1, 2023 - November 30, 2023

RD254.dgn 20-JUL-2020



HYDRANT ASSEMBLY

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. When pipe is shorter than 18', no joints allowed. Use mechanical joint retainer glands. Two ¾" galvanized tie rods may be used in lieu of thrust blocks for installations less than 18' long. Coat tie rods with two coats of coal tar epoxy.
2. When pipe is longer that 18' retainer glands not required.
3. There shall be a minimum of 18" horizontal clearance around hydrant.
4. When placed adjacent to curb, hydrant port shall be 24" from face of curb.
5. Concrete thrust blocks shall be constructed as per thrust blocking Std. Dwg. RD250. Do not block drain holes.
6. Extensions required for hydrant systems shall be installed to the manufacturer's specifications.
7. Hydrants shall be placed to provide a minimum of 5' clearance from driveways, poles, and other obstructions.
8. Hydrant pumper port shall face direction of access.
9. Set hydrant plumb in all directions.
10. See project plans for details not shown.

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

HYDRANT INSTALLATION

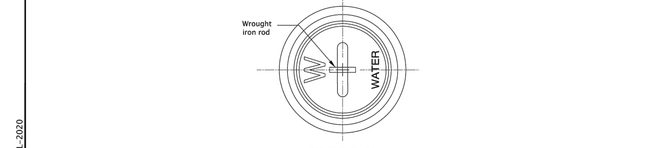
2021

DATE	REVISION DESCRIPTION

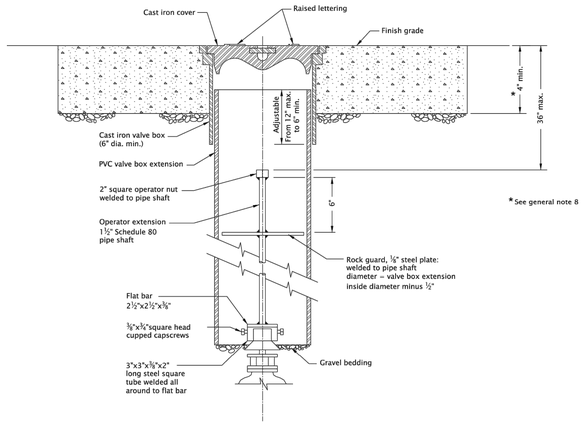
CALC BOOK NO. - - - N/A - - - | SDR DATE 25-JUL-2017 | **RD254**

Effective Date: June 1, 2023 - November 30, 2023

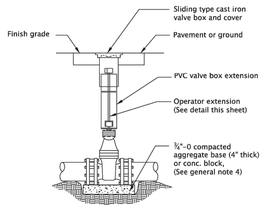
RD258.dgn 20-JUL-2020



COVER PLAN



VALVE BOX EXTENSION SECTION



VALVE BOX ASSEMBLY DETAIL

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Valve box not to rest on operating assembly.
2. Operator extension required when valve nut is deeper than 4' from finish grade.
3. Center valve box on axis of operator nut.
4. Valves 12" and smaller shall be provided with compacted aggr. base on undisturbed ground. Valves greater than 12" shall be installed on precast concrete block, (4" thick).
5. Welds shall be minimum ¼" all around.
6. Hot dip galvanize operator extension after fabrication.
7. Casting shall meet H20 load requirement.
8. Provide concrete or asphalt pad (24" square, 4" thick), when required.
9. See project plans for details not shown.

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

VALVE BOX AND OPERATOR EXTENSION

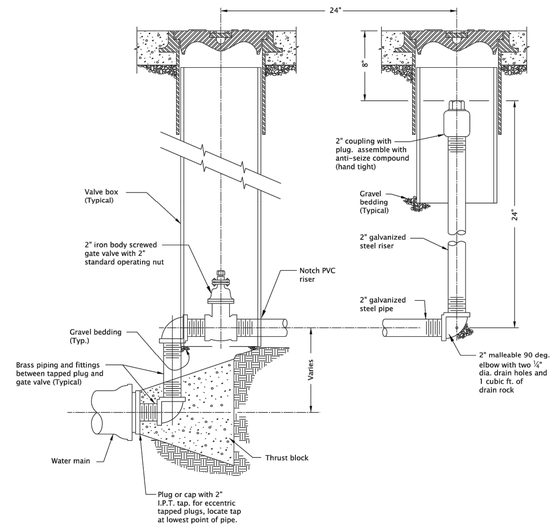
2021

DATE	REVISION DESCRIPTION

CALC BOOK NO. - - - N/A - - - | SDR DATE 25-JUL-2017 | **RD258**

Effective Date: June 1, 2023 - November 30, 2023

RD262.dgn 20-JUL-2020



GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Wrap main and fittings in thrust block zone with two layers of polyethylene film to facilitate future removal.
2. In lieu of concrete thrust block, restrain pipe or pour concrete straddle block.
3. See project plans for details not shown.

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

TYPICAL MAIN DEAD-END BLOWOFF ASSEMBLY

2021

DATE	REVISION DESCRIPTION

CALC BOOK NO. - - - N/A - - - | SDR DATE 25-JUL-2017 | **RD262**

Effective Date: June 1, 2023 - November 30, 2023

Revisions:

LINE IS 1" ON FULL SCALE DRAWING

WINDSOR ENGINEERS
Ridgefield, WA
Duluth + Minneapolis, MN
www.windsorengineers.com
Project No: 20198.3

WATER RESILIENCY PROJECT
PHASE 1 - SEISMIC IMPROVEMENTS
CITY OF CANNON BEACH, OR 97110

ENGINEERING PLAN
Issue Date: 7/14/2023

Project Manager TWT
Drawn by TJM
Checked by MRL

WATER DETAILS

C590

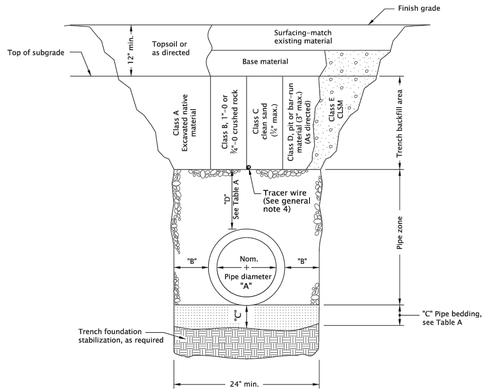
BID PLAN SET

RD300.dgn 20-JUL-2020

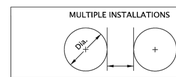
TABLE A

"A" (in)	"B" (in)	"C" (in)	"D" (in)
4	10	4	8
6	10	4	8
8	10	6	10
10	10	6	10
12	12	6	10
15	12	6	10
18	16	6	12
21	16	6	12
24	18	6	12
30	18	6	12
36	24	6	14
42	24	6	14
48	24	6	14
54	24	6	14
60	24	6	14
66	24	6	14
72	24	6	14

For pipes over 72" diameter, see general note 3.



MULTIPLE INSTALLATIONS



DIAMETER	MIN. SPACE BETWEEN PIPES
Up to 48"	24"
48" to 72"	One half (½) dia. of pipe

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. Surfacing of paved areas shall comply with street cut Std. Dwg. RD302.
2. For pipe installation in embankment areas where the trench method will not be used and the pipe is ≥ 36" diameter, increase dimension "B" to nominal pipe diameter.
3. Pipes over 72" diameter are structures, and are not applicable to this drawing.
4. See Std. Dwg. RD336 for tracer wire details TRACER WIRE REQUIRED

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

TRENCH BACKFILL, BEDDING, PIPE ZONE AND MULTIPLE INSTALLATIONS

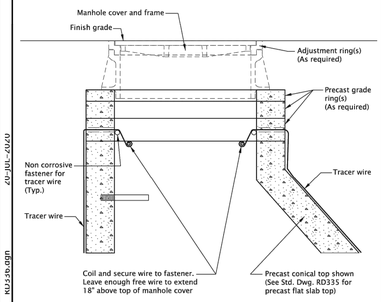
2021

DATE	REVISION DESCRIPTION

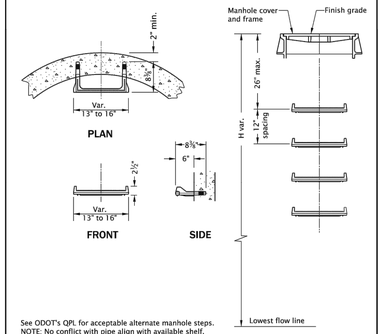
CALC BOOK NO. N/A | DR DATE 14-JUL-2014 | **RD300**

Effective Date: June 1, 2023 - November 30, 2023

RD336.dgn 20-JUL-2020

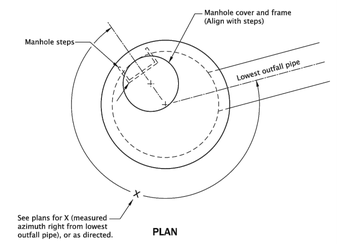


DETAIL "A"
TRACER WIRE
(See general note 6)



See ODOT's QPL for acceptable alternate manhole steps.
NOTE: No conflict with pipe align with available shelf.

DETAIL "B"
MANHOLE STEPS
(See general note 7)



DETAIL "C"
PRECAST CONICAL TOP
OR
PRECAST FLAT SLAB TOP
AND MANHOLE STEPS ORIENTATION
(See general note 7)

GENERAL NOTES FOR ALL DETAILS ON THIS SHEET:

1. All precast products shall conform to requirements of ASTM C478.
2. Standard precast manhole section diameter shall be 48". Use 42" if specified by the Engineer.
3. See Std. Dwg. RD345 for pipe to manhole connections.
4. See Std. Dwg. RD344 for manhole base section.
5. Adjust 24" maximum.
6. All connecting pipes shall have a tracer wire, or approved alternate. Place tracer wire directly over pipe centerline and on top of the pipe zone material.
7. Steps shall conform to requirements of ASTM C478. When H=42" or less omit steps. See Detail "C" for alignment of steps, and manhole cover and frame.
8. See Std. Dwg. RD335 for details not shown.
9. See Std. Dwg. RD356 for manhole covers and frames, manhole adjustment rings, etc.
10. Max. pipe diameter varies with pipe material.
11. See Std. Dwg. RD342 for shallow manholes.
12. See project plans for details not shown.

The selection and use of this Standard Drawing, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without first consulting a Registered Professional Engineer.

All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

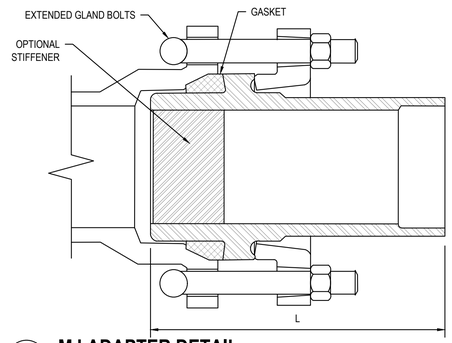
STANDARD MANHOLE DETAILS

2021

DATE	REVISION DESCRIPTION

CALC BOOK NO. N/A | DR DATE 16-JAN-2019 | **RD336**

Effective Date: June 1, 2023 - November 30, 2023



1 **MJ ADAPTER DETAIL**
NOT TO SCALE

Know what's **below.** **Call** before you dig.
CALL 2 BUSINESS DAYS BEFORE YOU DIG.
CAUTION UTILITY INFORMATION IS APPROXIMATE.
VERIFY ALL UTILITIES PRIOR TO CONSTRUCTION.

Revisions:

LINE IS 1" ON FULL SCALE DRAWING

WINDSOR ENGINEERS
Ridgefield, WA
Duluth + Minneapolis, MN
www.windsorengineers.com
Project No: 20198.3

REGISTERED PROFESSIONAL ENGINEER
60299PE
OREGON
Travis W. Tormanen
Month 9, 1999
TRAVIS W. TORMANEN
EXPIRES: 06-30-24

WATER RESILIENCY PROJECT
PHASE 1 - SEISMIC IMPROVEMENTS
CITY OF CANNON BEACH, OR 97110

ENGINEERING PLAN
Issue Date: 7/14/2023

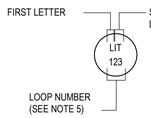
Project Manager TWT
Drawn by TJM
Checked by MRL

WATER DETAILS

C591

BID PLAN SET

INSTRUMENT CALLOUTS AND TAG SCHEMATIC



TYPICAL TAG FORMAT

LIT-123	INSTRUMENT TAG NUMBER
LIT	FUNCTIONAL IDENTIFICATION
L	FIRST LETTER
IT	SUCCEEDING LETTER(S)
123	LOOP NUMBER

EXPANDED TAG FORMAT

20LIT-123A	INSTRUMENT TAG NUMBER
20	AREA NUMBER
LIT	FUNCTIONAL IDENTIFICATION
L	FIRST LETTER
IT	SUCCEEDING LETTER(S)
123	LOOP NUMBER
A	OPTIONAL SUFFIX

	FIRST LETTER (1)		SUCCEEDING LETTERS (15)		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS (2)(3)(4)		ALARM		
B	BURNER, COMBUSTION (2)		USER'S CHOICE (5)	USER'S CHOICE (5)	USER'S CHOICE (5)
C	USER'S CHOICE (3a)(5)			CONTROL (23a)(23e)	CLOSED (27b)
D	DENSITY	DIFFERENTIAL	DAMPER		
E	VOLTAGE (2)		SENSOR (PRIMARY ELEMENT)		
F	FLOW, FLOW RATE (2)	RATIO (FRACTION) (2b)			
G	USER'S CHOICE		GLASS, VIEWING DEVICE (16)		
H	HAND (2)				HIGH (27A)(28A)(29)
I	CURRENT (ELECTRICAL)(2)		INDICATE (17)		
J	POWER (2)		SCAN (18)		
K	TIME, TIME SCHEDULE (2)	TIME RATE OF CHANGE (12c)(13)		CONTROL STATION (24)	
L	LEVEL (2)		LIGHT (19)		LOW (27b)(28)(29)
M	MOISTURE	MOMENTARY			MIDDLE, INTERMEDIATE
N	USER'S CHOICE (5)		USER'S CHOICE (5)	USER'S CHOICE (5)	USER'S CHOICE (5)
O	USER'S CHOICE (5)		ORIFICE, RESTRICTION		OPEN (27a)
P	PRESSURE, VACUUM (2)		POINT (TEST) CONNECTION		
Q	QUANTITY (2)	INTEGRATE, TOTALIZE	INTEGRATE, TOTALIZE		
R	RADIATION (2)		RECORD (20)		RUN
S	SPEED, FREQUENCY (2)	SAFETY (14)		SWITCH (23b)	STOP
T	TEMPERATURE (2)			TRANSMIT	
U	MULTI VARIABLE (2)(6)		MULTIFUNCTION (21)	MULTIFUNCTION (21)	MULTIFUNCTION (21)
V	VIBRATION, MECHANICAL ANALYSIS (2)(4)(7)			VALVE, DAMPER, OR LOUVER (23c)(23e)	
W	WEIGHT, FORCE (2)		WELL, PROBE		
X	UNCLASSIFIED (8)	X AXIS (11c)	ACCESSORY DEVICES (22) UNCLASSIFIED (8)	UNCLASSIFIED (8)	UNCLASSIFIED (8)
Y	EVENT, STATE, PRESENCE (2)(9)	Y AXIS (11c)		RELAY, COMPUTE, CONVERT	
Z	POSITION, DIMENSION (2)	Z AXIS (11c), SAFETY INSTRUMENT SYSTEM (30)		DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

NOTE: NUMBERS IN PARANTHESES REFER TO EXPLANATORY NOTES IN ANSI/ISA-5.1-2009, SECTION 4.2

FUNCTION DESIGNATIONS

SWITCHES

A/M	AUTO-MANUAL
ESTOP	EMERGENCY STOP
F-R	FORWARD-REVERSE
HOA	HAND-OFF-AUTO
H/OR	HAND-OFF-REMOTE
L/R	LOCAL-REMOTE
LOR	LOCAL-OFF-REMOTE
O/C	OPEN-CLOSE
OCA	OPEN-CLOSE-AUTO
O-O	ON-OFF
OSC	OPEN-STOP-CLOSE
POT	POTENTIOMETER
RST	RESET
S-S	START-STOP

ANALYTICAL INSTRUMENTS

ALK	ALKALINITY
CL2*	CHLORINE CONCENTRATION
COMB	COMBUSTIBLE GAS
COND	CONDUCTIVITY
DO	DISSOLVED OXYGEN
H2S	HYDROGEN SULFIDE
LEL	LOWER EXPLOSIVE LIMIT
NO3	NITRATE
O2	OXYGEN CONCENTRATION
O3	OZONE
ORP	OXIDATION REDUCTION POTENTIAL
PH	HYDROGEN ION CONCENTRATION
SO2	SULFUR DIOXIDE
TH	TOTAL HARDNESS
TURB	TURBIDITY
UV	ULTRAVIOLET TRANSMITTANCE
OR INTENSITY	
*	NOTED AS TOTAL OR FREE

LINE SYMBOLOGY

DATA LINK (SOFTWARE) CONNECTION

DISCRETE INPUT

DISCRETE OUTPUT

ANALOG INPUT

ANALOG OUTPUT

NOTES

1. SEE THE GENERAL AND ELECTRICAL DISCIPLINE DRAWINGS FOR ADDITIONAL SYMBOLS AND ABBREVIATIONS.
2. SEE THE GENERAL DISCIPLINE DRAWINGS FOR EQUIPMENT DESIGNATIONS AND PROCESS IDENTIFICATION CODES.
3. THIS IS A GENERALIZED LEGEND SHEET. SEE ALSO ISA S5.1, S5.3 AND S7.3.
4. FOR INSTRUMENT AIR QUALITY STANDARDS, REFER TO ISA RP7.7.
5. SEE SPECIFICATION 40 FOR COMPLETE DETAILS OF LOOP DRAWING AND INTERCONNECTION DRAWING SUBMITTAL REQUIREMENTS.
6. POWER SUPPLIES FOR INSTRUMENT LOOPS OR SYSTEMS SHALL BE PROVIDED BY THE INSTRUMENTATION SUPPLIER TO MEET THE VOLTAGE AND CURRENT REQUIREMENTS OF THE COMPONENTS IN EACH LOOP OR SYSTEM.
7. FIELD SWITCHES FOR ELECTRICAL MOTOR OPERATION SHALL BE SUPPLIED BY THE ELECTRICAL CONTRACTOR UNLESS THEY ARE PART OF A VENDOR PACKAGE.

RECEPTACLE SYMBOLS LEGEND

- SINGLE RECEPTACLE
- DUPLEX RECEPTACLE
- DOUBLE DUPLEX RECEPTACLE
- DUPLEX RECEPTACLE ABOVE COUNTER
- DOUBLE DUPLEX RECEPTACLE ABOVE COUNTER
- DUPLEX RECEPTACLE W/ GFCI
- DOUBLE DUPLEX RECEPTACLE W/ GFCI
- DUPLEX RECEPTACLE W/ GFCI ABOVE COUNTER
- DOUBLE DUPLEX RECEPTACLE W/ GFCI ABOVE COUNTER
- DUPLEX RECEPTACLE ON CEILING
- DOUBLE DUPLEX RECEPTACLE ON CEILING
- DUPLEX RECEPTACLE, HALF SWITCHED
- DUPLEX RECEPTACLE, FULL SWITCHED
- SPECIAL PURPOSE RECEPTACLE, VERIFY NEMA CONFIGURATION
- SPECIAL PURPOSE RECEPTACLE ON CEILING, VERIFY NEMA CONFIGURATION
- RECEPTACLE W/ CEILING CORD DROP
- FLOORBOX W/ DUPLEX RECEPTACLE
- FLOORBOX W/ DOUBLE DUPLEX RECEPTACLE
- COMBINATION FLOORBOX W/ POWER AND LOW VOLTAGE

CONNECTIONS/EQUIPMENT SYMBOLS LEGEND

- EQUIPMENT ELECTRICAL CONNECTION
- MOTOR CONNECTION
- S^M MOTOR RATED SWITCH W/ THERMAL OVERLOAD
- DISCONNECT SWITCH
- [F] FUSED DISCONNECT SWITCH
- JUNCTION BOX
- LINE VOLTAGE THERMOSTAT
- UTILITY METER
- EQUIPMENT CABINET AS NOTED
- ELECTRIC WALL HEATER
- BRANCH PANEL RECESSED
- BRANCH PANEL SURFACE
- T TRANSFORMER
- SWITCHBOARD

ONE-LINE SYMBOLS LEGEND

- CIRCUIT BREAKER
- BUS DUCT PLUG-IN CIRCUIT BREAKER
- FUSED SWITCH
- CURRENT TRANSFORMERS
- GROUND CONNECTION
- CONDUIT CONTINUATION
- CONDUIT CAP
- XXXX FEEDER CALLOUT
- SPD SURGE PROTECTIVE DEVICE
- AUTOMATIC TRANSFER SWITCH
- T TRANSFORMER
- (M) ELECTRICITY METER
- GENERATOR

LIGHTING SYMBOLS LEGEND

NOTE: SHADED LUMINAIRE INDICATES EMERGENCY POWER

- RECESSED DOWNLIGHT - ROUND/SQUARE
- SURFACE DOWNLIGHT - ROUND/SQUARE
- PENDANT OR FLUSH MOUNT LUMINAIRE
- LINEAR RECESSED LUMINAIRE
- LINEAR SURFACE LUMINAIRE
- LINEAR PENDANT LUMINAIRE
- LINEAR WALL LUMINAIRE
- LINEAR STRIP LUMINAIRE
- CONTINUOUS TAPE OR UNDERCABINET LUMINAIRE
- RECESSED HEAT LAMP
- RECESSED 2x2 LUMINAIRE
- RECESSED 2x4 LUMINAIRE
- SURFACE OR PENDANT 2x2 LUMINAIRE
- SURFACE OR PENDANT 2x4 LUMINAIRE
- WALL MOUNTED LUMINAIRE
- RECESSED STEP LIGHT
- GROUND MOUNT FLOOD
- POLE MOUNTED AREA LUMINAIRE
- BOLLARD OR POST TOP LUMINAIRE
- EMERGENCY BUGEYE
- EXIT SIGN, SHADING INDICATES FACES, ARROWS PER PLAN

TYPICAL LUMINAIRE LABELING

LIGHTING CONTROLS SYMBOLS LEGEND

NOTE: ANY COMBINATION OF LETTERS MAY APPLY TO A SWITCH FOR MULTIPLE FUNCTIONS

- $ STANDARD SWITCH
- ^{a} STANDARD SWITCH W/ SWITCHING SUBSCRIPT
- ^{3} 3-WAY SWITCH
- ^{4} 4-WAY SWITCH
- ^{L} LOW VOLTAGE SWITCH
- $^{L\#}$ LOW VOLTAGE SWITCH PER SCHEDULE
- ^{O} OCCUPANCY SENSOR SWITCH
- ^{K} KEYED SWITCH
- ^{D} DIMMER SWITCH
- ^{T} TIMER SWITCH
- OS OCCUPANCY SENSOR CEILING MOUNT
- PC PHOTOCELL CEILING MOUNT
- OS OCCUPANCY SENSOR WALL MOUNT
- PC PHOTOCELL WALL MOUNT

GENERAL SYMBOLS LEGEND

- XX-XX MECHANICAL EQUIPMENT TAG
- XX-XX KITCHEN EQUIPMENT TAG
- XXX DWELLING UNIT CIRCUIT TAG
- X KEYNOTE
- X REVISION TAG
- REVISION CLOUD
- X / XXX DETAIL/PLAN CALLOUT
- N NORTH ARROW
- MATCHLINE
- UNIT XX / DP12-XX DWELLING UNIT CALLOUT TAG W/ UNIT TYPE AND CIRCUIT NUMBER

ABBREVIATIONS

A	AMPERES
AFCI	ARC FAULT CIRCUIT INTERRUPTER
AFF	ABOVE FINISHED FLOOR
AIC	AMPERE INTERRUPTING CAPACITY
AL	ALUMINUM
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
A/V	AUDIO VISUAL
BKR	BREAKER
C	CONDUIT
CKT	CIRCUIT
CO	CONDUIT ONLY
CU	COPPER
CLG	CEILING
CT	CURRENT TRANSFORMER
DAS	DISTRIBUTED ANTENNA SYSTEM
DIA.	DIAMETER
(E)	EXISTING
EGC	EQUIPMENT GROUNDING CONDUCTOR
ERRCS	EMERGENCY RESPONDER RADIO COVERAGE
F	FUSE
FACP	FIRE ALARM CONTROL PANEL
FC	FOOT CANDLE
FLA	FULL LOAD AMPERES
FSD	FIRE SMOKE DAMPER
GEC	GROUNDING ELECTRODE CONDUCTOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFPE	GROUND FAULT PROTECTION OF EQUIPMENT
HP	HORSEPOWER
IDF	INTERMEDIATE DISTRIBUTION FRAME
IG	ISOLATED GROUND
KCMIL	THOUSAND CIRCULAR MIL
KVA	KILOVOLT-AMP
KW	KILOWATT
LTG	LIGHTING
MCA	MINIMUM CIRCUIT AMPERES
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MDF	MAIN DISTRIBUTION FRAME
MDP	MAIN DISTRIBUTION PANEL
MDU	MEDIA DISTRIBUTION UNIT
MIN	MINIMUM
MLO	MAIN LUG ONLY
MOCP	MAXIMUM OVERCURRENT PROTECTION
MTS	MANUAL TRANSFER SWITCH
(N)	NEW
NAC	NOTIFICATION APPLIANCE CIRCUIT
OC	ON CENTER
P	POLE
PH	PHASE
PNL	PANEL
PWR	POWER
(R)	RELOCATE
ROW	RIGHT-OF-WAY
S	SWITCH
SDP	SUB-DISTRIBUTION PANEL
SIM	SIMILAR
SPD	SURGE PROTECTIVE DEVICE
TR	TAMPER RESISTANT
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
UPS	UNINTERRUPTABLE POWER SUPPLY
V	VOLTS
VA	VOLT-AMPERES
VFD	VARIABLE FREQUENCY DRIVE
W	WIRE
WP	WEATHERPROOF
(X)	DEMOLISH
XFMR	TRANSFORMER

TYPICAL DEVICE MOUNTING HEIGHTS

RECEPTACLES	+18" AFF
RECEPTACLES, ABOVE COUNTER	+6" ABOVE COUNTER, +46" AFF MAX, COORDINATE WITH CASEWORK
PHONE/DATA/CATV OUTLET	+18" AFF
SWITCHES	+46" AFF
THERMOSTATS	+46" AFF
CARD READERS	+46" AFF
PANELBOARDS	+72" TO TOP OR PER NEC 404.8
RESIDENTIAL PANEL	+48" TO HIGHEST OPERABLE CONTROL
CONTROL PANELS	+72" TO TOP

NOTES:
1. MEASUREMENTS ARE TYPICAL UNO ON PLANS
2. MEASUREMENTS ARE TO CENTER OF BOX UNO
3. COMPLY WITH ALL ADA ACCESSIBILITY GUIDELINES

GENERAL PROJECT NOTES

1. COMPLETED INSTALLATION SHALL COMPLY WITH NEC AND ALL LOCAL LAWS, ORDINANCES, AND REGULATIONS.
2. ALL NEW ELECTRICAL SERVICE INSTALLATIONS SHALL COMPLY WITH PACIFICORP'S '2022 ELECTRICAL SERVICE REQUIREMENTS MANUAL'.
3. CODE BASIS OF DESIGN: 2020 NATIONAL ELECTRICAL CODE WITH OREGON STATE MODIFICATIONS (NFPA 70), 2018 INTERNATIONAL BUILDING CODE, 2018 OREGON STATE ENERGY CODE.
4. PLANS ARE DIAGRAMMATIC IN NATURE TO COMMUNICATE SCOPE OF WORK AND GENERAL INTENT. CONTRACTOR SHALL PROVIDE ALL FITTINGS, BOXES, AND APPURTENANCES NECESSARY FOR A COMPLETE AND OPERABLE ELECTRICAL SYSTEM.
5. DEVICE LOCATIONS ON PLANS MAY NOT BE EXACT. REFER TO ARCHITECTURAL PLANS FOR MORE DETAILED INFORMATION REGARDING DIMENSIONS AND LAYOUTS. COORDINATE ALL DEVICE AND EQUIPMENT LOCATIONS WITH ARCHITECTURAL AND OTHER TRADES.
6. EQUIPMENT FOR OTHER DISCIPLINES MAY BE SHOWN FOR REFERENCE ONLY. REFER TO OTHER DISCIPLINES' DRAWINGS FOR MORE DETAIL REGARDING EQUIPMENT SPECIFICATIONS AND INFORMATION.
7. PLANS SHALL GOVERN IN MATTERS OF QUANTITY. SPECIFICATIONS SHALL GOVERN IN MATTERS OF QUALITY. IN CASE OF DISCREPANCY BETWEEN DRAWINGS AND SPECIFICATIONS, THE SPECIFICATIONS SHALL GOVERN. PLANS ARE TO BE TIED TO SPECIFICATIONS FOR A COMPLETE DESIGN PACKAGE.
8. ANYTHING MENTIONED IN THE SPECIFICATIONS AND NOT SHOWN ON THE DRAWINGS, OR SHOWN ON THE DRAWINGS AND NOT MENTIONED IN THE SPECIFICATIONS, SHALL BE OF LIKE EFFECT AS IF SHOWN OR MENTIONED IN BOTH.
9. WIRE SIZE AND QUANTITIES ARE NOT GENERALLY INDICATED ON PLANS. FOR A TYPICAL 20A/1P CIRCUIT BREAKER, PROVIDE (3) #12 CU CONDUCTORS (PHASE, NEUTRAL, GROUND). FOR A TYPICAL 20A/2P CIRCUIT BREAKER, PROVIDE (3) #12 CU CONDUCTORS (PHASE, PHASE, GROUND). FOR A TYPICAL 20A/3P CIRCUIT BREAKER, PROVIDE (4) #12 CU CONDUCTORS (THREE PHASES PLUS GROUND).
10. TO COMPENSATE FOR VOLTAGE DROP, ON 20A, 120V CIRCUITS: OVER 100 FEET, PROVIDE #10 AWG, OVER 150 FEET, PROVIDE #8 AWG. ON 20A, 277V CIRCUITS: OVER 250 FEET, PROVIDE #10 AWG.
11. CIRCUIT NUMBERS ARE GENERALLY INDICATED AS XX-##. WHERE (XX) INDICATES PANEL NAME AND (##.) INDICATES THE CIRCUIT NUMBER. IN SOME CASES THE PANEL MAY BE COMMON TO A LARGE AREA, AND THE CIRCUIT NUMBER ONLY MAY BE CALLED OUT ON THE PLANS.
12. MAINTAIN AT LEAST 12" SEPARATION BETWEEN POWER AND COMMUNICATIONS WIRING ROUTED PARALLEL. SMALLER SEPARATION MAY BE ALLOWED WHEN CROSSING.
13. ELECTRICAL EQUIPMENT IS DESIGNED BASED ON A SPECIFIC MANUFACTURER. VERIFY FINAL CLEARANCES AND SPACE REQUIREMENTS WITH EQUIPMENT SUBMITTALS. THE CONTRACTOR IS RESPONSIBLE FOR ANY REDESIGN OR RELOCATION OF EQUIPMENT IF APPROVED EQUIPMENT DOES NOT MATCH BASIS OF DESIGN.
14. PROVIDE 4" HIGH CONCRETE "HOUSEKEEPING PADS" FOR FREE STANDING AND FLOOR MOUNTED ELECTRICAL EQUIPMENT.
15. ALL CONDUIT ROUTING SHALL FOLLOW BUILDING LINES WHERE POSSIBLE. COORDINATE ROUTING WITH ARCHITECTURAL ELEMENTS. ALL ROUTING OF EXPOSED CONDUITS SHALL BE APPROVED BY THE ARCHITECT.
16. COORDINATE UNDERGROUND CONDUIT ROUTING WITH CIVIL AND STRUCTURAL PLANS.
17. CONSULT STRUCTURAL ENGINEER OF RECORD FOR ALL STRUCTURAL PENETRATIONS.

ELECTRICAL SHEET INDEX

E001	COVER SHEET - ELECTRICAL
E101	SITE PLAN - MAIN RESERVOIR
E102	SITE PLAN - SOUTH/TOLOVANA RESERVOIR
E103	SITE PLAN - NORTH RESERVOIR
E204	SITE PLAN ISOLATION VALVE 4
E501	DETAILS - ELECTRICAL
E502	DETAILS - ELECTRICAL
E601	RESERVOIR ONE-LINE DIAGRAM
E602	ISOLATION VALVE ONE-LINE DIAGRAM
E701	TYPICAL CONTROL PANEL ELEVATIONS
E801	SCADA NETWORK DIAGRAM

* NOTE *
ALL OF GENERAL NOTES ON THIS SHEET ARE TO BE APPLIED TO ALL OTHER DRAWINGS IN THIS SET. THE SYMBOLS AND ABBREVIATIONS SHOWN ON THIS SHEET MAY OR MAY NOT BE USED IN THIS SET OF DRAWINGS.

811 Know what's **below.** **Call** before you dig.
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CAUTION UTILITY INFORMATION IS APPROXIMATE.
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Revisions: # — LINE IS 1" ON FULL SCALE DRAWING

WINDSOR ENGINEERS
Ridgefield, WA
Duluth + Minneapolis, MN
www.windsorengineers.com
Project No: 20198.3

REGISTERED PROFESSIONAL ENGINEER 94196PE OREGON JULY 13, 2021 SEAN WANTAJA
EXPIRES: 06/30/24

WATER RESILIENCY PROJECT
PHASE 1 - SEISMIC IMPROVEMENTS
CITY OF CANNON BEACH, OR 97110

ENGINEERING PLAN
Issue Date: 7/14/2023

Project Manager TWT
Drawn by JRB
Checked by SEW

COVER SHEET - ELECTRICAL

E001

100% PLAN FOR REVIEW

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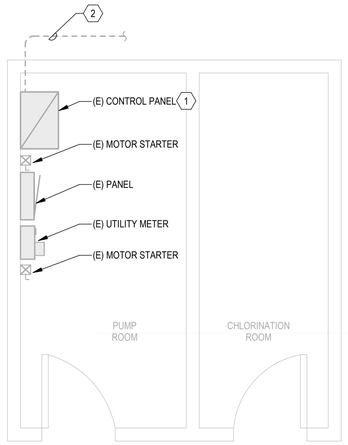
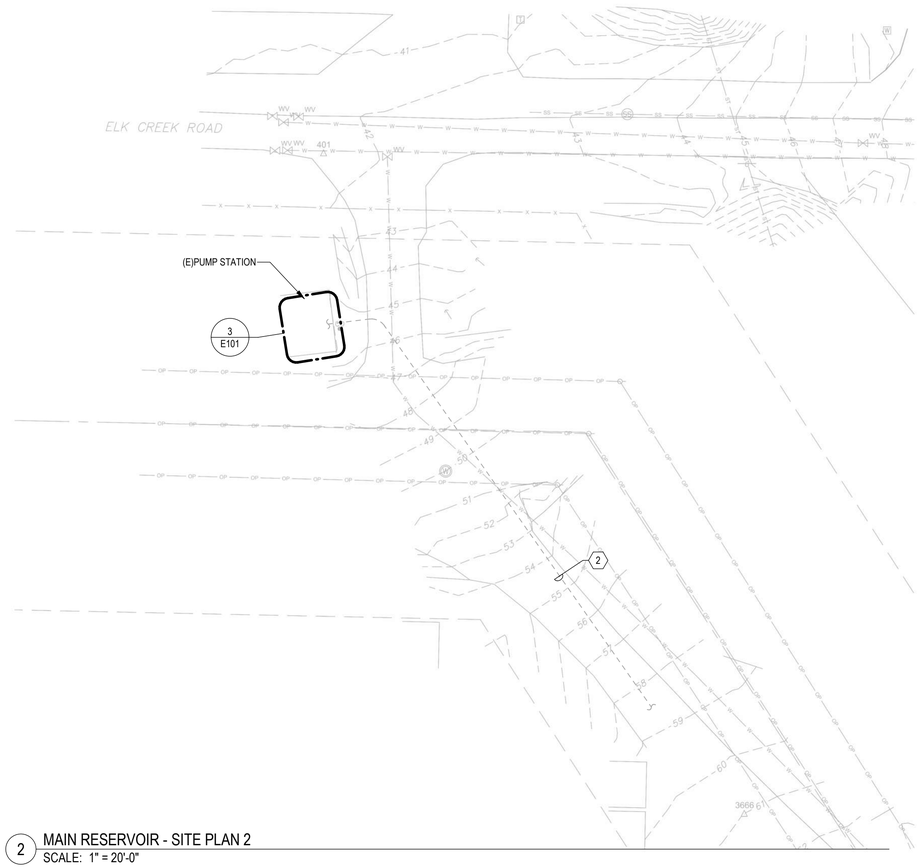
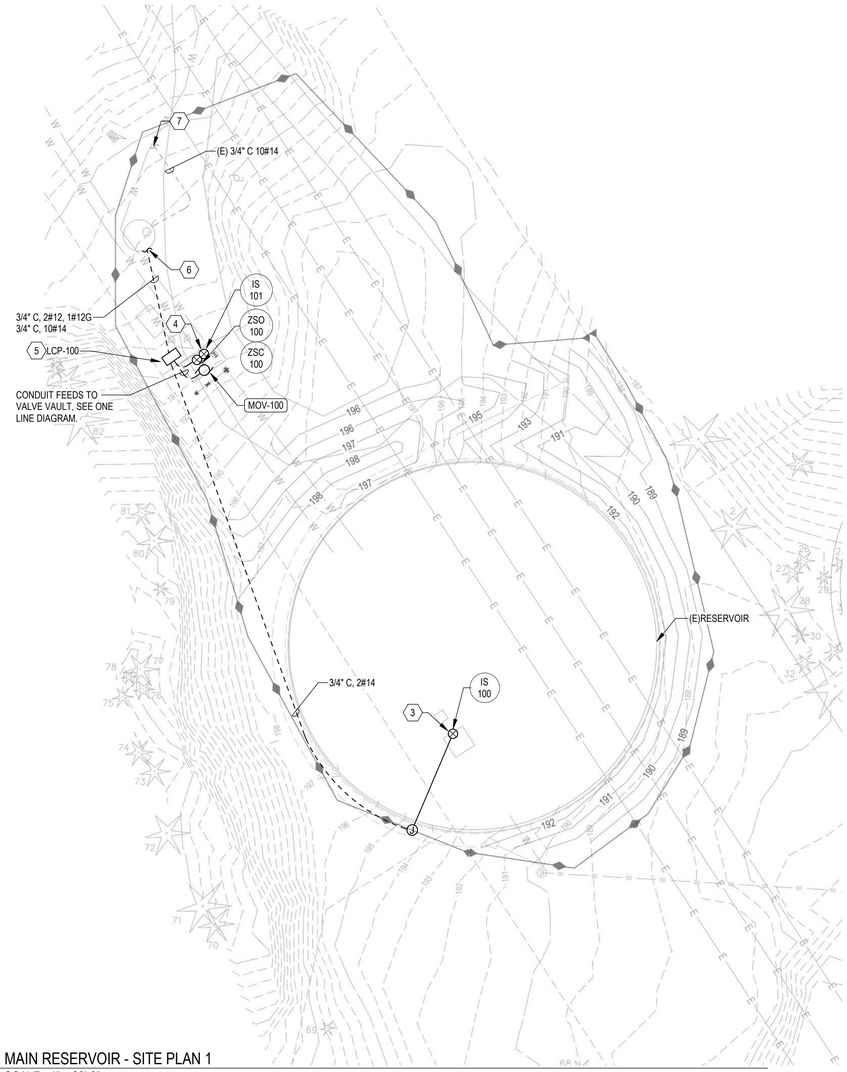


3 MAIN RESERVOIR - PUMP STATION
SCALE: 3/8" = 1'-0"



2 MAIN RESERVOIR - SITE PLAN 2
SCALE: 1" = 20'-0"



1 MAIN RESERVOIR - SITE PLAN 1
SCALE: 1" = 20'-0"

GENERAL SHEET NOTES

A. EXISTING ELECTRICAL AND INSTRUMENTATION EQUIPMENT IS APPROXIMATE. CONTRACTOR TO VERIFY EXACT LOCATIONS.
B. REFER TO GENERAL SHEET DRAWINGS G004, G005, AND G006 FOR SITE LOCATIONS AND KEY PLANS.
C. ALL UNDERGROUND CONDUITS SHALL BE A MINIMUM OF 24" BELOW GRADE.
D. ALL CONDUIT SHALL HAVE MINIMUM 12" OF SEPARATION FROM ANY OTHER COMMUNICATION OR GAS FACILITIES AND SHALL BE MINIMUM OF 36" FROM ANY WATER OR SEWER LINES.
E. GRAY LINES INDICATE EXISTING TO REMAIN. BOLD LINES INDICATE NEW SCOPE.
F. DASHED CONDUIT LINETYPE INDICATES UNDERGROUND ROUTING. COORDINATE NEW UNDERGROUND CONDUITS WITH EXISTING CONDITIONS.

KEYNOTES

1 EXISTING SCADA RTU IS MISSION MYDRO 850. REFER TO MANUFACTURER INSTALLATION INSTRUCTIONS TO ACCOMMODATE ADDITIONAL INPUTS AND OUTPUTS. SCADA AND VALVE PROGRAMMING BY CONTRACTOR.
2 EXISTING 3/4" CONDUIT TO ALTITUDE CONTROL VALVE VAULT LOCATED NEAR RESERVOIR.
3 PROVIDE RESERVOIR INTRUSION SWITCH. SEE INSTALLATION DETAIL ON SHEET E501. INTRUSION SWITCH SHALL BE WIRED TO EXISTING MISSION SCADA RTU LOCATED IN PUMP HOUSE TO MONITOR SWITCH STATUS.
4 PROVIDE VAULT INTRUSION SWITCH. SEE INSTALLATION DETAIL ON SHEET E501. INTRUSION SWITCH SHALL BE WIRED TO EXISTING MISSION SCADA RTU LOCATED IN PUMP HOUSE TO MONITOR SWITCH STATUS.
5 SEE DETAIL SHEET E501. FIELD COORDINATE EXACT LOCATION.
6 PROVIDE 20A/120V CIRCUIT FROM EXISTING PANEL IN VALVE VAULT TO LOCAL CONTROL PANEL .
7 PULL NEW CONTROL WIRE THROUGH EXISTING 3/4" SPARE CONDUIT BACK TO RTU IN PUMP HOUSE. SEE ONE-LINE DIAGRAM SHEET E601.

MAIN RESERVOIR QUANTITIES		
ITEM	UNITS	QUANTITY
SHAKE ALARM CONTROL	EA	1
MODIFY EXISTING SCADA IMISSION RTU	EA	1
MISSION RTU RADIO BACKUP	EA	1
CONNECT TO METER	EA	1
EQUIPMENT STAND	EA	1
3/4" CONDUIT	LF	200
1" CONDUIT	LF	1300
#14 WIRE	LF	16000
POWER SUPPLY WITH ELECTRICAL BOX	LF	0
INTRUSION SWITCHES	EA	2

N

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Revisions:

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94196PE
OREGON
JULY 13, 2021
SEAN WANTAJA
EXPIRES: 06/30/24

WATER RESILIENCY PROJECT
PHASE 1 - SEISMIC IMPROVEMENTS
CITY OF CANNON BEACH, OR 97110

ENGINEERING PLAN
Issue Date: 7/14/2023

Project Manager TWT
Drawn by JRB
Checked by SEW

SITE PLAN - MAIN RESERVOIR

E101

100% PLAN FOR REVIEW

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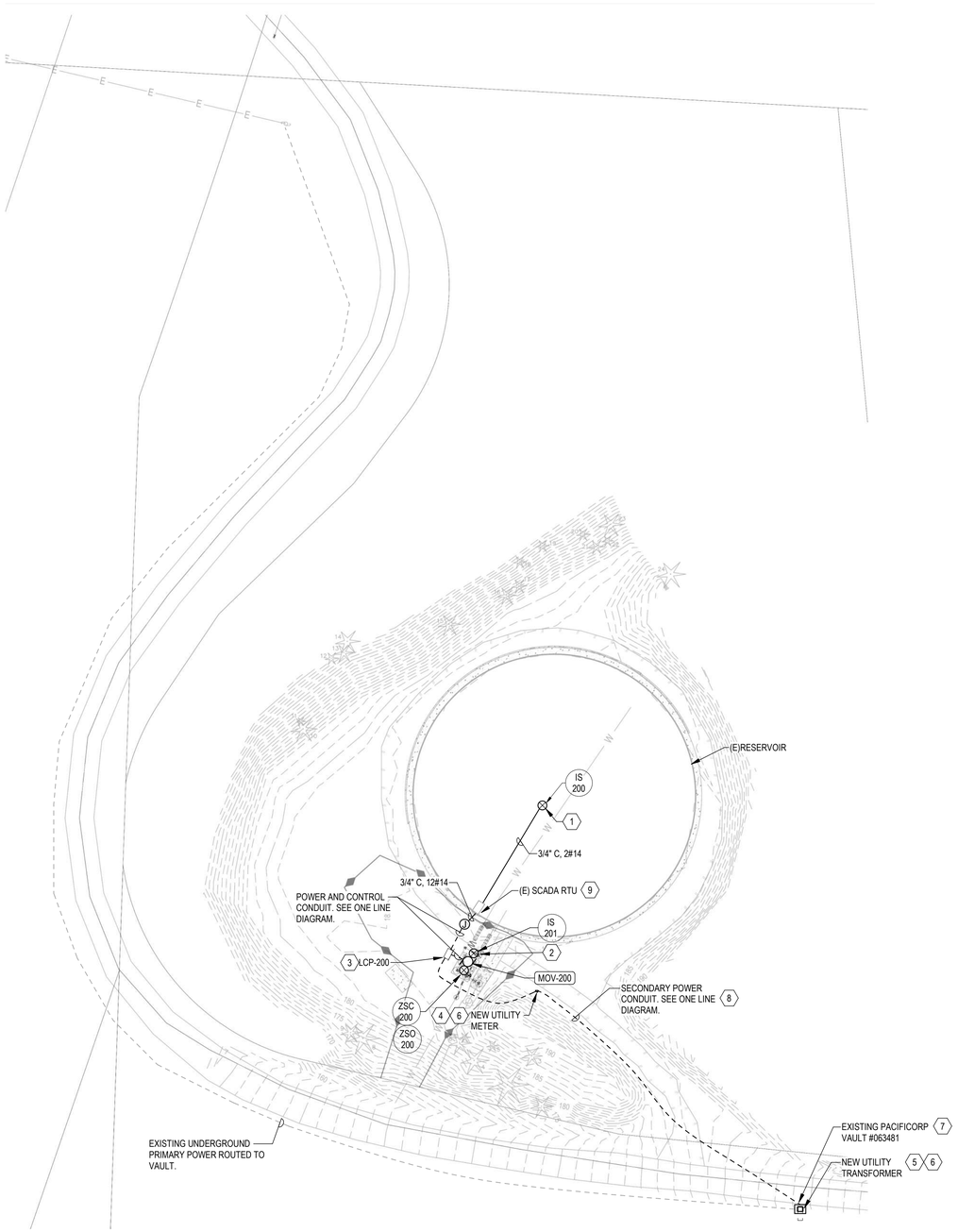

1 SOUTH/TOLOVANA RESERVOIR SITE PLAN
SCALE: 1/32" = 1'-0"

GENERAL SHEET NOTES

A. EXISTING ELECTRICAL AND INSTRUMENTATION EQUIPMENT IS APPROXIMATE. CONTRACTOR TO VERIFY EXACT LOCATIONS.
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E. GRAY LINES INDICATE EXISTING TO REMAIN. BOLD LINES INDICATE NEW SCOPE.
F. DASHED CONDUIT LINETYPE INDICATES UNDERGROUND ROUTING. COORDINATE NEW UNDERGROUND CONDUITS WITH EXISTING CONDITIONS.

KEYNOTES

1 PROVIDE RESERVOIR INTRUSION SWITCH. SEE INSTALLATION DETAIL ON SHEET E501. INTRUSION SWITCH SHALL BE WIRED TO EXISTING MISSION SCADA RTU TO MONITOR SWITCH STATUS.
2 PROVIDE VAULT INTRUSION SWITCH. SEE INSTALLATION DETAIL ON SHEET E501. INTRUSION SWITCH SHALL BE WIRED TO EXISTING MISSION SCADA RTU TO MONITOR SWITCH STATUS.
3 SEE DETAIL SHEET E501. FIELD COORDINATE EXACT LOCATION.
4 INSTALL UTILITY METER PER PACIFICORP REQUIREMENTS. SEE DETAIL ON SHEET E502.
5 SEE SHEET E601 FOR DIVISION OF RESPONSIBILITY MATRIX.
6 FIELD COORDINATE EXACT LOCATION WITH CITY AND PACIFICORP.
7 CONNECT TO EXISTING PULL BOX PER PACIFICORP REQUIREMENTS. FURNISH NEW TRANSFORMER VAULT LID PER REQUIREMENTS ON SHEET E502, STORE NEW LID ONSITE NEAR VAULT TO BE INSTALLED BY PACIFICORP.
8 COORDINATE FINAL CONDUIT AND TRENCHING ROUTING WITH CITY OF CANNON BEACH WATER DEPARTMENT PRIOR TO INSTALLATION.
9 EXISTING SCADA RTU IS MISSION MYDRO 850. REFER TO MANUFACTURER INSTALLATION INSTRUCTIONS TO ACCOMMODATE ADDITIONAL INPUTS AND OUTPUTS. SCADA AND VALVE PROGRAMMIG BY CONTRACTOR.

SOUTH RESERVOIR QUANTITIES		
ITEM	UNITS	QUANTITY
SHAKE ALARM CONTROL	EA	0
MODIFY EXISTING SCADA IMISSION RTU	EA	1
MISSION RTU RADIO BACKUP	EA	1
CONNECT TO METER	EA	1
EQUIPMENT STAND	EA	1
3/4" CONDUIT	LF	180
1" CONDUIT	LF	40
#14 WIRE	LF	500
POWER SUPPLY WITH ELECTRICAL BOX	LF	700
INTRUSION SWITCHES	EA	3

N

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Revisions:

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OREGON
JULY 13, 2021
SEAN WANTAJA
EXPIRES: 06/30/24

WATER RESILIENCY PROJECT
PHASE 1 - SEISMIC IMPROVEMENTS
CITY OF CANNON BEACH, OR 97110

ENGINEERING PLAN
Issue Date: 7/14/2023

Project Manager TWT
Drawn by JRB
Checked by SEW

SITE PLAN - SOUTH/TOLOVANA RESERVOIR

E102

100% PLAN FOR REVIEW

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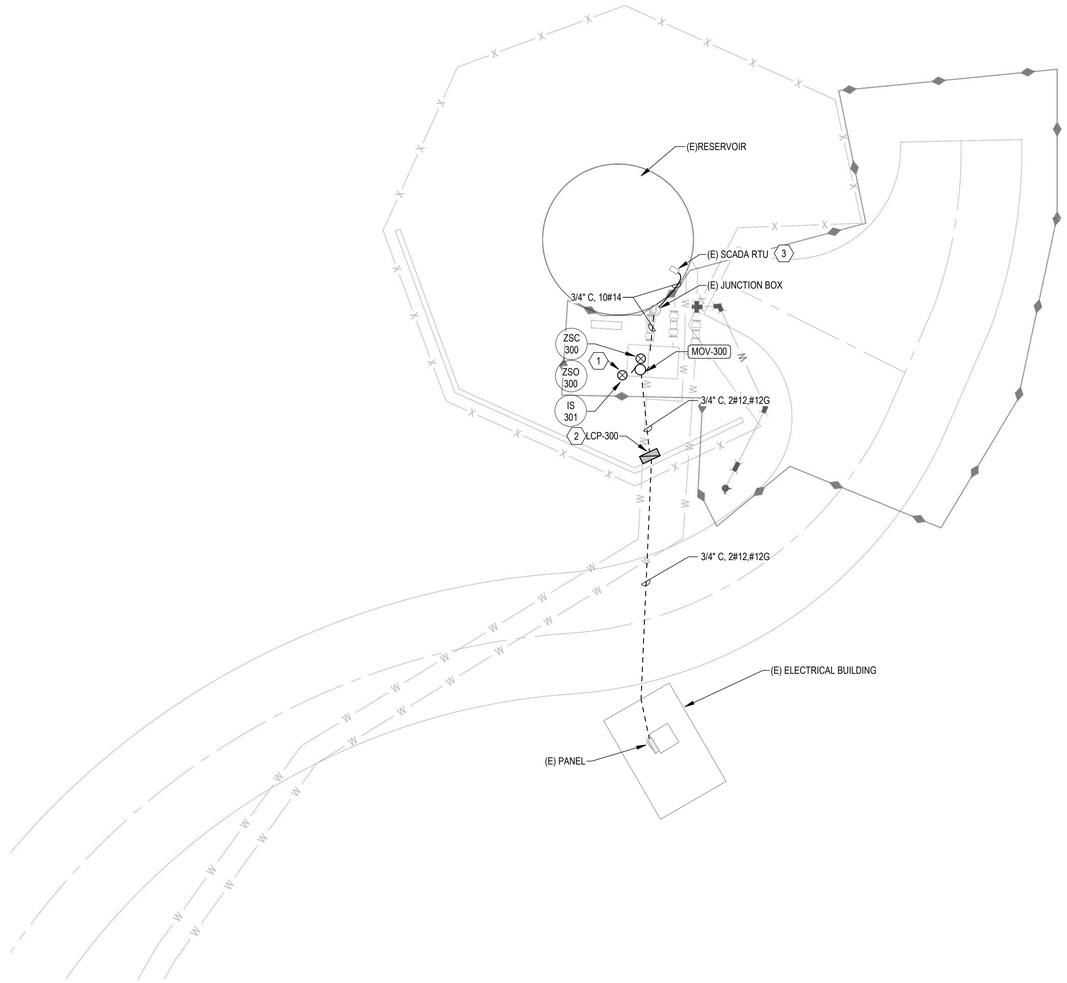

1 NORTH RESERVOIR SITE PLAN
SCALE: 1/8" = 1'-0"

GENERAL SHEET NOTES

A. EXISTING ELECTRICAL AND INSTRUMENTATION EQUIPMENT IS APPROXIMATE. CONTRACTOR TO VERIFY EXACT LOCATIONS.
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F. DASHED CONDUIT LINETYPE INDICATES UNDERGROUND ROUTING. COORDINATE NEW UNDERGROUND CONDUITS WITH EXISTING CONDITIONS.

KEYNOTES

1 PROVIDE VAULT INTRUSION SWITCH. SEE INSTALLATION DETAIL ON SHEET E501. INTRUSION SWITCH SHALL BE WIRED TO EXISTING MISSION SCADA RTU TO MONITOR SWITCH STATUS.
2 CONTROL PANEL MOUNTED TO EXISTING CONCRETE WALL. FINAL CONTROL PANEL LOCATION TO BE APPROVED BY OWNER/ENGINEER. PROVIDE 20A, 120V CIRCUIT TO LOCAL CONTROL PANEL FROM EXISTING PANEL.
3 EXISTING SCADA RTU IS MISSION MYDRO 850. REFER TO MANUFACTURER INSTALLATION INSTRUCTIONS TO ACCOMMODATE ADDITIONAL INPUTS AND OUTPUTS. SCADA AND VALVE PROGRAMMIG BY CONTRACTOR.

NORTH RESERVOIR QUANTITIES		
ITEM	UNITS	QUANTITY
SHAKE ALARM CONTROL	EA	0
MODIFY EXISTING SCADA IMISSION RTU	EA	1
MISSION RTU RADIO BACKUP	EA	1
CONNECT TO METER	EA	1
EQUIPMENT STAND	EA	1
3/4" CONDUIT	LF	120
1" CONDUIT	LF	80
#14 WIRE	LF	1000
POWER SUPPLY WITH ELECTRICAL BOX	LF	0
INTRUSION SWITCHES	EA	3

N

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Revisions: # LINE IS 1" ON FULL SCALE DRAWING

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Duluth + Minneapolis, MN
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Project No: 20198.3

REGISTERED PROFESSIONAL ENGINEER 94196PE OREGON JULY 13, 2021 SEAN WANTAJA
EXPIRES: 06/30/24

WATER RESILIENCY PROJECT
PHASE 1 - SEISMIC IMPROVEMENTS
CITY OF CANNON BEACH, OR 97110

ENGINEERING PLAN
Issue Date: 7/14/2023

Project Manager TWT
Drawn by JRB
Checked by SEW

SITE PLAN - NORTH RESERVOIR

E103

100% PLAN FOR REVIEW

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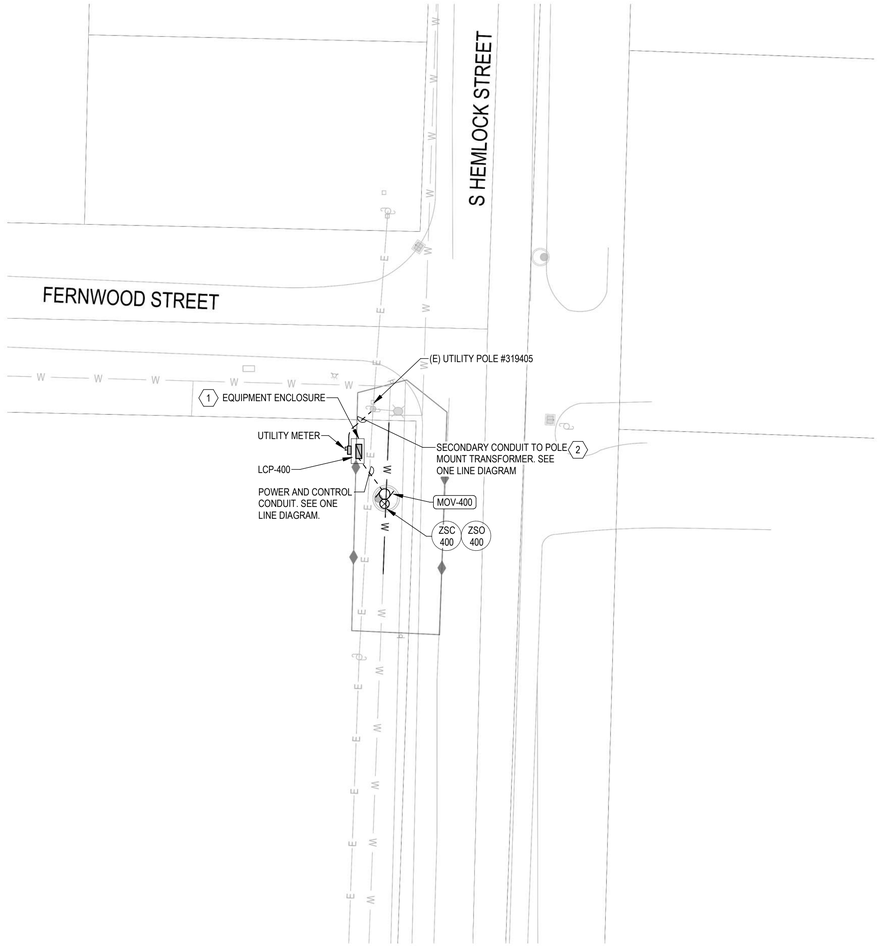
F. DASHED CONDUIT LINETYPE INDICATES UNDERGROUND ROUTING. COORDINATE NEW UNDERGROUND CONDUITS WITH EXISTING CONDITIONS.

KEYNOTES

1 SEE DETAIL SHEET E501. COORDINATE EXACT LOCATION WITH UTILITY AND CITY OF CANNON BEACH.
2 SEE SHEET E601 FOR DIVISION OF RESPONSIBILITY MATRIX AND SHEET E501 FOR INSTALLATION DETAIL. INSTALL SWEEP 7-1/2" FROM POLE. RED CAUTION TAPE SHALL BE INSTALLED 12 TO 18 INCHES ABOVE ALL ELECTRICAL CONDUITS. 3M SCOTCH #368 OR EQUIVELENT.

ISOLATION VALVE 4 QUANTITIES		
ITEM	UNITS	QUANTITY
CONNECT TO METER	EA	1
CONTROL PANEL	EA	1
CABINET	EA	1
1" CONDUIT	LF	40
3" - 20' POLE	EA	1
#14 WIRE	LF	320



1 ISOLATION VALVE 4
SCALE: 3/32" = 1'-0"

N

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CITY OF CANNON BEACH, OR 97110

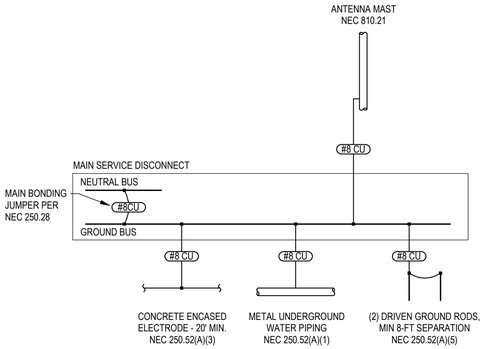
ENGINEERING PLAN
Issue Date: 7/14/2023

Project Manager TWT
Drawn by JRB
Checked by SEW

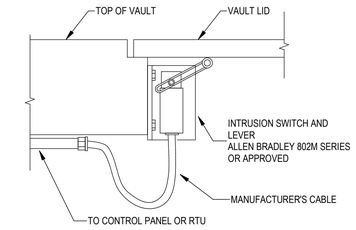
SITE PLAN ISOLATION VALVE 4

E204

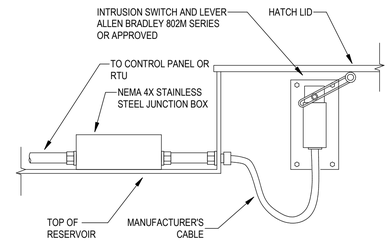
100% PLAN FOR REVIEW



6 GROUNDING DIAGRAM
NOT TO SCALE



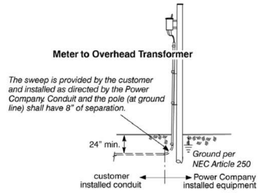
4 VAULT INTRUSION SWITCH INSTALLATION
NOT TO SCALE



* ALL MOUNTING HARDWARE SHALL BE316 STAINLESS STEEL

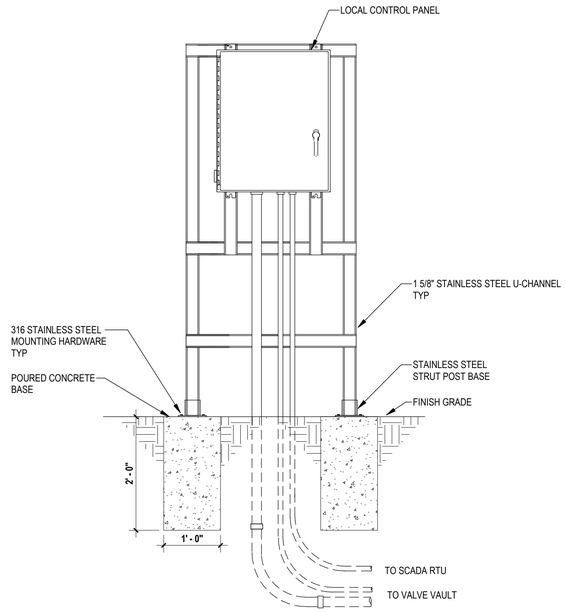
3 RESERVOIR INTRUSION SWITCH INSTALLATION
NOT TO SCALE

Figure 24—Underground Service to Dwellings with Permanent Foundations

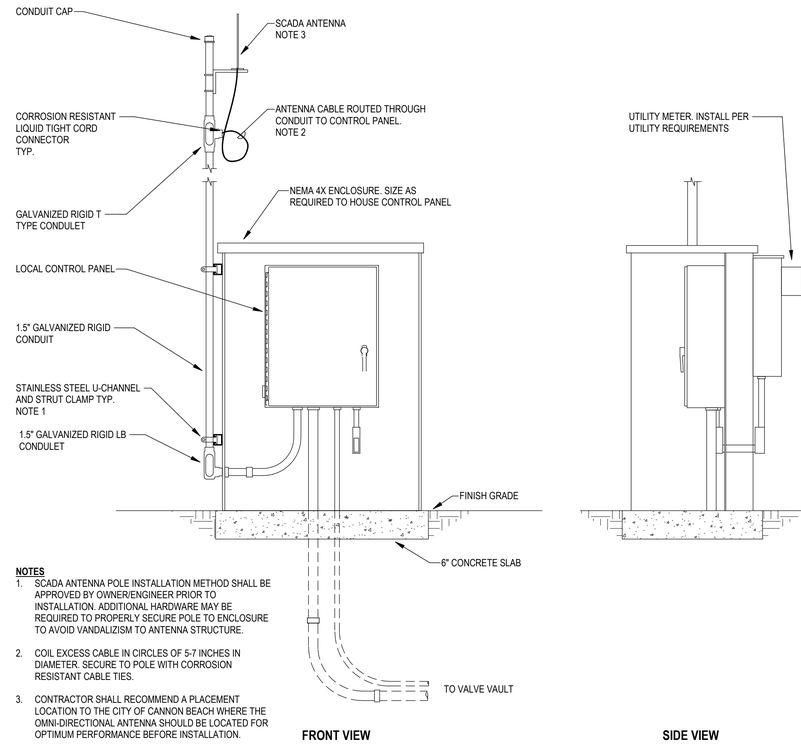


ROCKY MOUNTAIN POWER PACIFIC POWER

5 POLE CONDUIT INSTALLATION DETAIL
NOT TO SCALE



2 LOCAL CONTROL PANEL INSTALLATION
NOT TO SCALE



NOTES

1. SCADA ANTENNA POLE INSTALLATION METHOD SHALL BE APPROVED BY OWNER/ENGINEER PRIOR TO INSTALLATION. ADDITIONAL HARDWARE MAY BE REQUIRED TO PROPERLY SECURE POLE TO ENCLOSURE TO AVOID VANDALIZISM TO ANTENNA STRUCTURE.
2. COIL EXCESS CABLE IN CIRCLES OF 5-7 INCHES IN DIAMETER. SECURE TO POLE WITH CORROSION RESISTANT CABLE TIES.
3. CONTRACTOR SHALL RECOMMEND A PLACEMENT LOCATION TO THE CITY OF CANNON BEACH WHERE THE OMNI-DIRECTIONAL ANTENNA SHOULD BE LOCATED FOR OPTIMUM PERFORMANCE BEFORE INSTALLATION.

FRONT VIEW **SIDE VIEW**

1 ISOLATION VALVE EQUIPMENT ENCLOSURE
NOT TO SCALE

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ENGINEERING PLAN
Issue Date: 7/14/2023

Project Manager TWT
Drawn by JRB
Checked by SEW

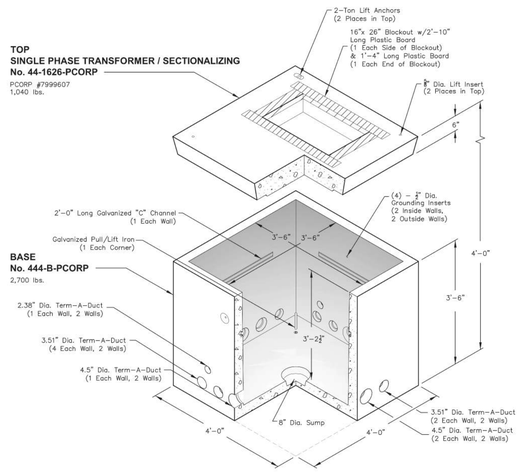
DETAILS - ELECTRICAL

E501

100% PLAN FOR REVIEW

444-TRANS-SECT-PCORP

4 x 4, Single Phase Transformer / Sectionalizing Padvault, Stock Item 7999607



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

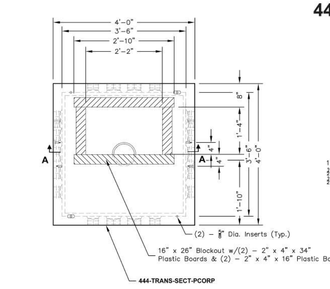
Non Skid Covers Available

FOR DETAILS, SEE REVERSE>>

Items Shown Are Subject To Change Without Notice
Issue Date: April 2016

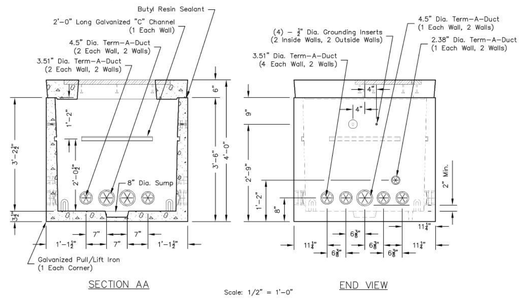
Mailing Address PO Box 588 Auburn, WA 98071
Phone: 800-892-1538
Fax: 253-735-4201
Email: opauburn@oldcastle.com
opauburn.com

444-TRANS-SECT-PCORP



PLAN VIEW

No. 44-1626-PCORP (SINGLE PHASE TRANSFORMER / SECTIONALIZING TOP)
PCORP #7999607



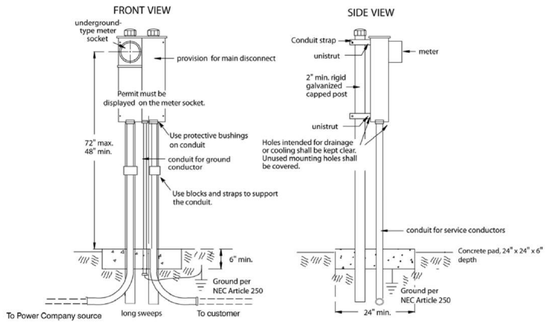
SECTION AA — END VIEW

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

opauburn.com

2 TRANSFORMER VAULT DETAIL
NOT TO SCALE

Figure 26—Underground Service to a Free-Standing Meter Socket, Steel Post



1 METER INSTALLATION DETAIL
NOT TO SCALE

811 Know what's **below.** **Call** before you dig.
CALL 2 BUSINESS DAYS BEFORE YOU DIG.
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VERIFY ALL UTILITIES PRIOR TO CONSTRUCTION.

Revisions: # — LINE IS 1" ON FULL SCALE DRAWING

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Ridgefield, WA
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www.windsorengineers.com
Project No: 20198.3

REGISTERED PROFESSIONAL ENGINEER 94196PE OREGON JULY 13, 2021 SEAN WANTAJA
EXPIRES: 06/30/24

WATER RESILIENCY PROJECT
PHASE 1 - SEISMIC IMPROVEMENTS
CITY OF CANNON BEACH, OR 97110

ENGINEERING PLAN
Issue Date: 7/14/2023

Project Manager TWT
Drawn by JRB
Checked by SEW

DETAILS - ELECTRICAL

E502

100% PLAN FOR REVIEW

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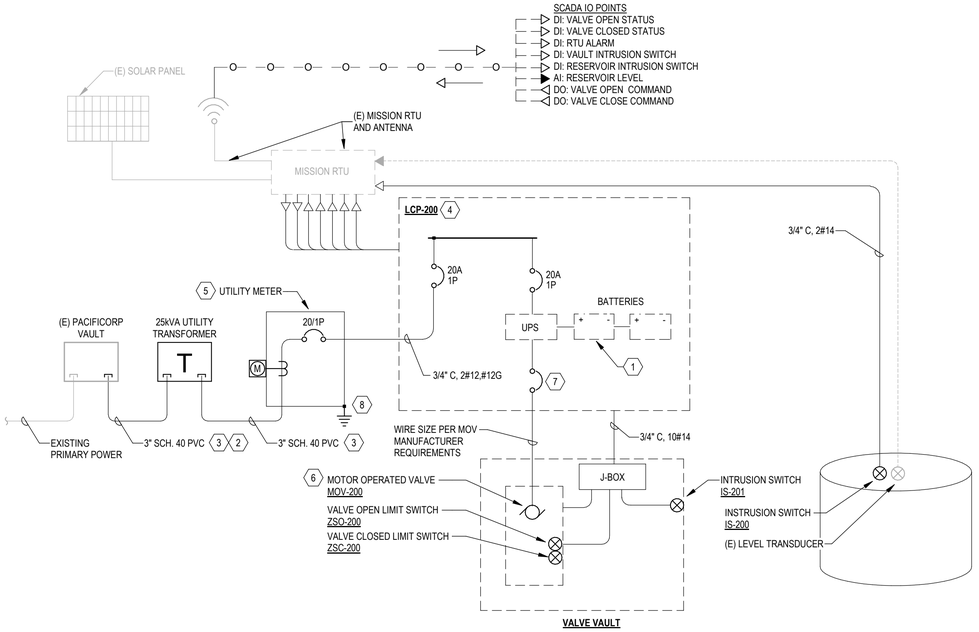
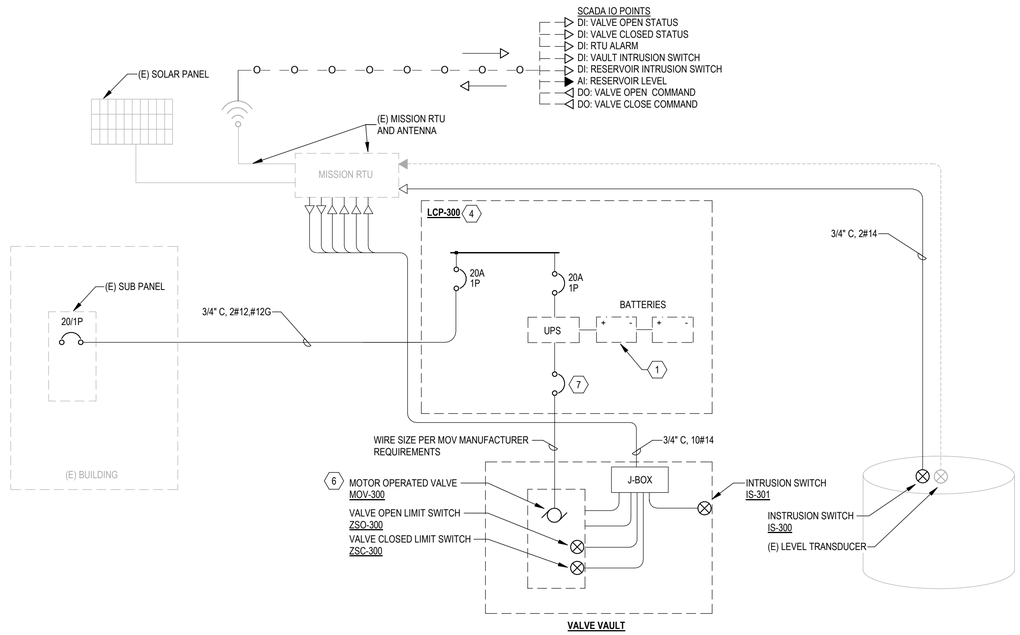
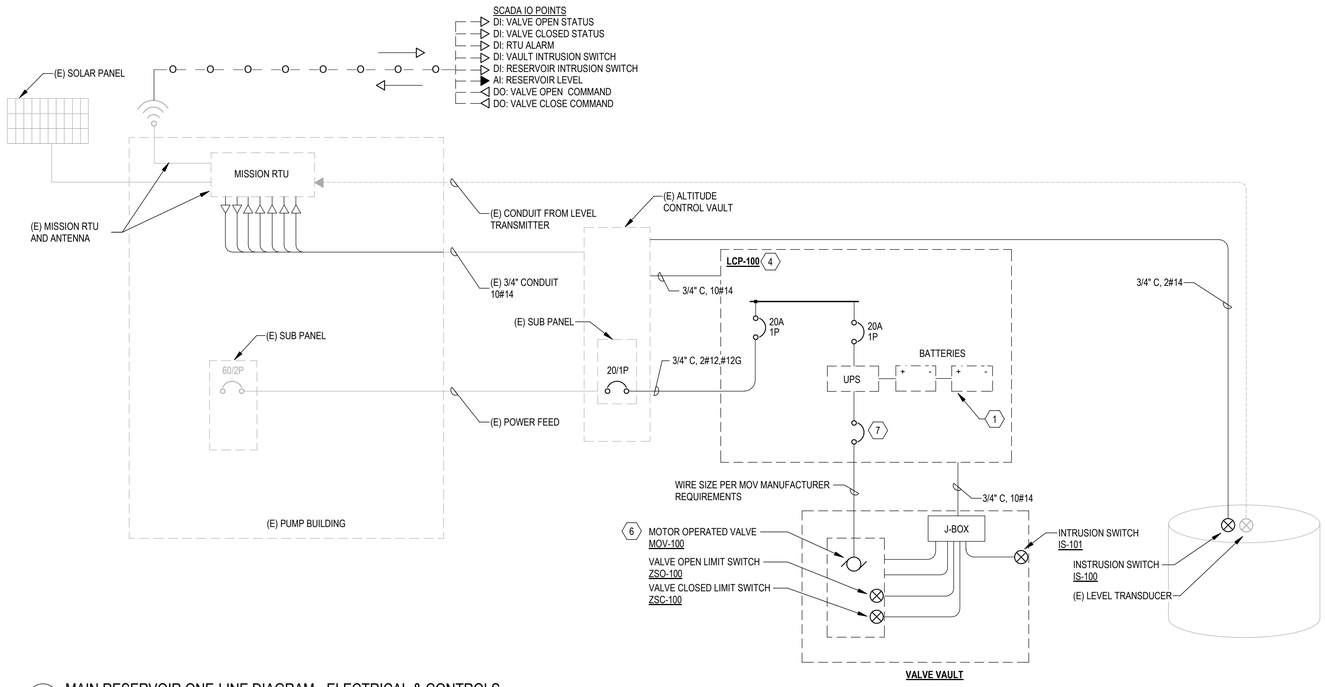


2 TOLOVANA RESERVOIR ONE-LINE DIAGRAM - ELECTRICAL & CONTROLS
NOT TO SCALE



3 NORTH RESERVOIR ONE-LINE DIAGRAM - ELECTRICAL & CONTROLS
NOT TO SCALE



1 MAIN RESERVOIR ONE-LINE DIAGRAM - ELECTRICAL & CONTROLS
NOT TO SCALE

UTILITY CONTACT
BRET DORSEY
Bret.Dorsey@Pacificorp.com
503-861-6010.

SCOPE ITEM	ELEC. CONTRACTOR	UTILITY CO.
TRENCHING - EXCAVATING, BACKFILL, PAVING/RESTORATION	X	
METER BASE	X	
UNDERGROUND VAULTS EXCAVATION	X	
UNDERGROUND VAULTS INSTALLATION	X	
CONDUIT AND INSTALLATION	X	
CONDUCTORS (WIRE) INSTALLATION		X
TRANSMISSION LINE INSTALLATION		X
RISER INSTALLATION		X
TRANSFORMER INSTALLATION		X

GENERAL SHEET NOTES

A. GRAY LINES INDICATE EXISTING TO REMAIN. BOLD LINES INDICATE NEW SCOPE.

B. DASHED CONDUIT LINETYPE INDICATES UNDERGROUND ROUTING. COORDINATE NEW UNDERGROUND CONDUITS WITH EXISTING CONDITIONS.

C. NEW SCADA AND VALVE PROGRAMMING BY CONTRACTOR.

KEYNOTES

1 PROVIDE BATTERY BACKUP. BATTERY SHALL HAVE CAPACITY TO COMPLETE A MINIMUM OF (2) CLOSE/OPEN CYCLES IN THE EVENT OF A POWER OUTAGE.SEE SPECIFICATION FOR MORE INFORMATION.

2 PRIMARY CONDUIT SHALL BE 36" BELOW GRADE.

3 PRIMARY AND SECONDARY CONDUITS PER PACIFICORP ELECTRIC SERVICE REQUIREMENTS. TRENCHING SHALL BE INSPECTED AND APPROVED BY PACIFICORP BEFORE BACKFILL.

4 PROVIDE NECESSARY RELAY'S, TERMINAL BLOCKS, CIRCUIT BREAKERS, ETC. REQUIRED TO ENSURE COMPLETE CONTROL AND SCADA INTEGRATION TO THE MOTOR OPERATED VALVE. SUBMIT CONTROL SYSTEM SCHEMATICS FOR APPROVAL PRIOR TO INSTALLATION. SEE TYPICAL PANEL LAYOUT DRAWING

5 PROVIDE STAINLESS STEEL METER/MAIN COMBO, 120V/240V, 1PH, 3W, MIN. 100A RATED, 22KAIC, NEMA 3R. PROVIDE 100A/2P MAIN BREAKER AND (1) 20A/1P OUTPUT BREAKER. SEE INSTALLATION DETAIL ON SHEET E501. ACCEPTABLE METER SOCKETS SHALL BE PER PACIFIC POWER REQUIREMENTS AND APPROVE

6 ROTORK AUTOMATIC ELECTRIC ACTUATOR, FULL CLOSE, NON-THROTTLING, N.O. PILOT. VALVE CLOSES ON EARTHQUAKE ALERT, (24 VDC APPLIED TO CONTROL ASSEMBLY) AND OPENS AFTER RESET (0 VDC APPLIED TO CONTROL ASSEMBLY) SEE SPECIFICATIONS FOR FURTHER INFORMATION.

7 PROVIDE CIRCUIT PROTECTION AND WIRE SIZE PER MOTOR ACTUATED VALVE MANUFACTURER REQUIREMENTS.

8 REFER TO GROUNDING DIAGRAM ON SHEET E501.

811 Know what's **below.** **Call** before you dig.
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Revisions:

#	

LINE IS 1" ON FULL SCALE DRAWING

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PHASE 1 - SEISMIC IMPROVEMENTS
CITY OF CANNON BEACH, OR 97110

ENGINEERING PLAN
Issue Date: 7/14/2023

Project Manager TWT
Drawn by JRB
Checked by SEW

RESERVOIR ONE-LINE DIAGRAM

E601

100% PLAN FOR REVIEW

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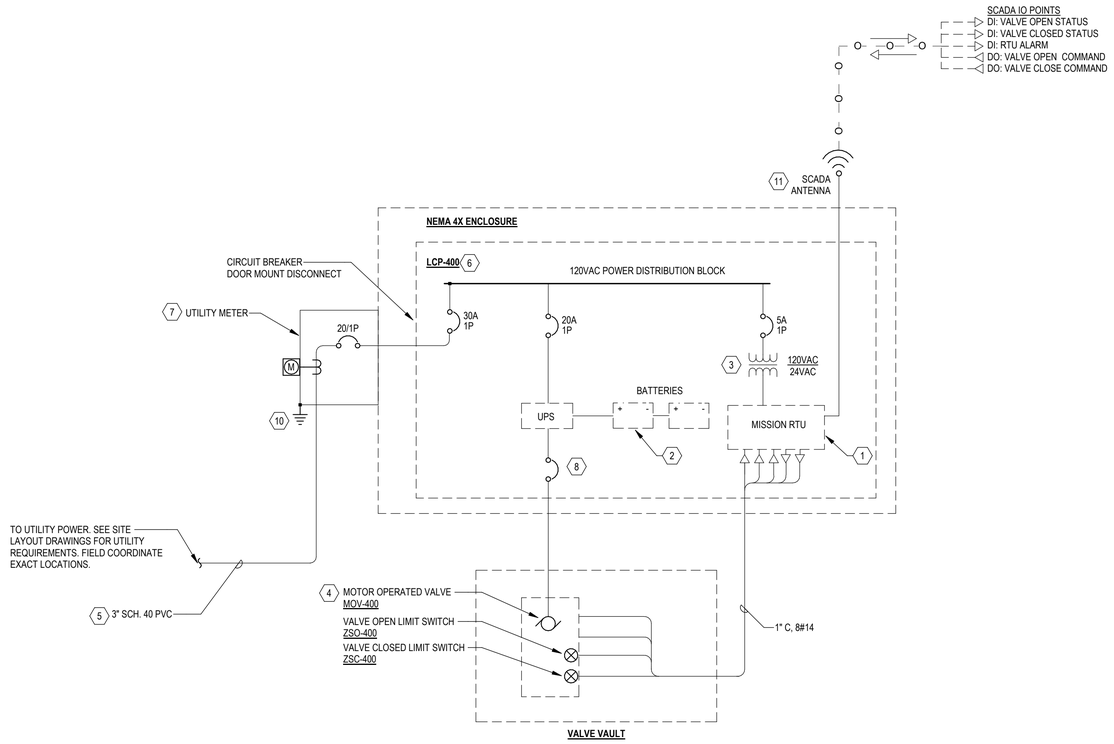

1 ISOLATION VALVE 4 SITE ONE-LINE DIAGRAM - ELECTRICAL & CONTROLS
NOT TO SCALE

GENERAL SHEET NOTES

A. ALL UNDERGROUND CONDUITS SHALL BE A MINIMUM OF 24" BELOW GRADE.

B. ALL CONDUIT SHALL HAVE MINIMUM 12" OF SEPARATION FROM ANY OTHER COMMUNICATION OR GAS FACILITIES AND SHALL BE MINIMUM OF 36" FROM ANY WATER OR SEWER LINES.

C. NEW SCADA AND VALVE PROGRAMMING BY CONTRACTOR.

KEYNOTES

1 FURNISH AND INSTALL MISSION MYDRO 850.

2 PROVIDE BATTERY BACKUP. BATTERY SHALL HAVE CAPACITY TO COMPLETE A MINIMUM OF (2) CLOSE/OPEN CYCLES IN THE EVENT OF A POWER OUTAGE.SEE SPECIFICATION FOR MORE INFORMATION.

3 PROVIDE 120VAC TO 12 VAC, 1.2A POWER SUPPLY TO POWER RTU PER MISSION RTU REQUIREMENTS.

4 ROTORK AUTOMATIC ELECTRIC ACTUATOR, FULL CLOSE, NON-THROTTLING, N.O. PILOT. VALVE CLOSES ON EARTHQUAKE ALERT, (24 VDC APPLIED TO CONTROL ASSEMBLY) AND OPENS AFTER RESET (0 VDC APPLIED TO CONTROL ASSEMBLY) SEE SPECIFICATIONS FOR FURTHER INFORMATION.

5 SEE SHEET E601 FOR DIVISION OF RESPONSIBILITY MATRIX..

6 PROVIDE NECESSARY RELAY'S, TERMINAL BLOCKS, CIRCUIT BREAKERS, ETC. REQUIRED TO ENSURE COMPLETE CONTROL AND SCADA INTEGRATION TO THE MOTOR OPERATED VALVE. SUBMIT CONTROL SYSTEM SCHEMATICS FOR APPROVAL PRIOR TO INSTALLATION. SEE TYPICAL PANEL LAYOUT DRAWING SHEET E701.

7 PROVIDE STAINLESS STEEL METER/MAIN COMBO, 120V/240V, 1PH, 3W, MIN. 100A RATED, 22KAIC, NEMA 3R. PROVIDE 100A/2P MAIN BREAKER AND (1) 20A/1P OUTPUT BREAKER. SEE INSTALLATION DETAIL ON SHEET E501. ACCEPTABLE METER SOCKETS SHALL BE PER PACIFIC POWER REQUIREMENTS AND APPROVED MANUFACTURER LIST.

8 PROVIDE CIRCUIT PROTECTION AND WIRE SIZE PER MOTOR ACTUATED VALVE MANUFACTURER REQUIREMENTS.

9 SHAKEALARM UNIT EQUIPMENT PROVIDED BY VARIUS INC, INSTALLATION, WIRING AND CONDUIT BY ELECTRICAL CONTRACTOR. MOUNT NEW SHAKEALARM UNIT ADJACENT TO EXISTING MISSION CONTROLS SCADA MASTER. SEE SPECIFICATIONS FOR INFORMATION AND REQUIREMENTS.

10 REFER TO GROUNDING DIAGRAM ON SHEET E501.

11 CONTRACTOR SHALL RECOMMEND A PLACEMENT LOCATION TO THE CITY OF CANNON BEACH WHERE THE OMNI-DIRECTIONAL ANTENNA SHOULD BE LOCATED FOR OPTIMUM PERFORMANCE BEFORE INSTALLATION.

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Revisions:

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WATER RESILIENCY PROJECT
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Drawn by JRB
Checked by SEW

ISOLATION VALVE
ONE-LINE DIAGRAM

E602

100% PLAN FOR REVIEW

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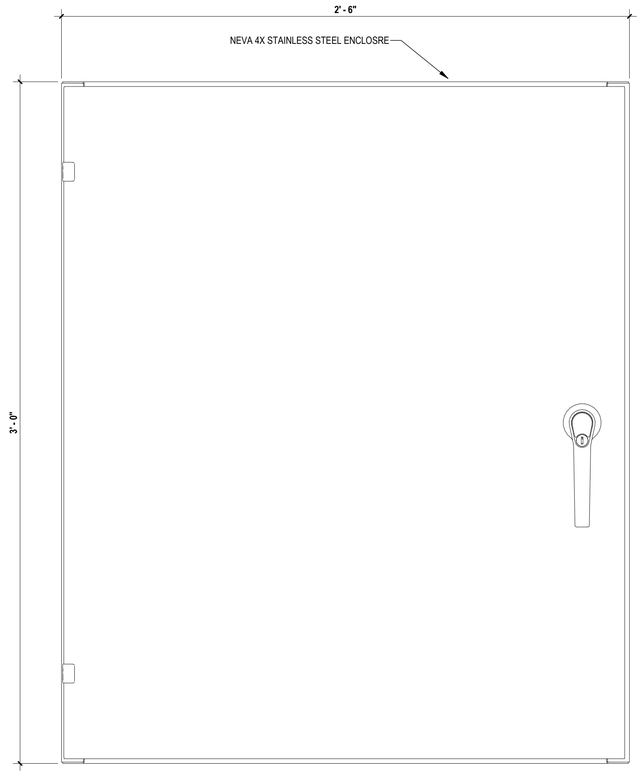
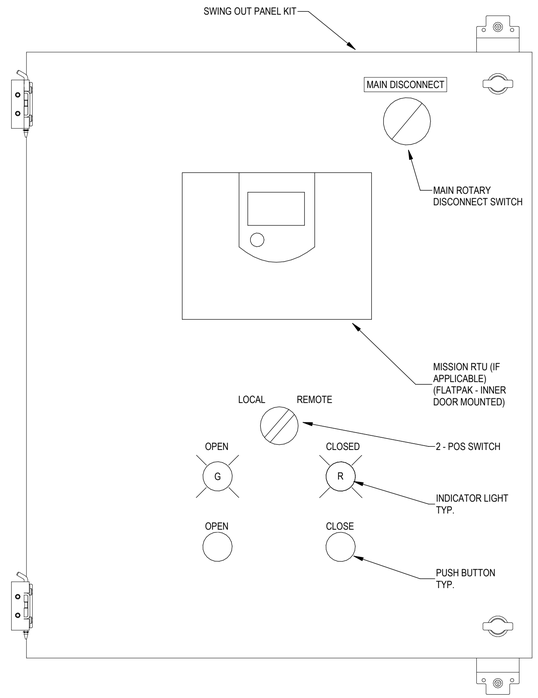
GENERAL SHEET NOTES

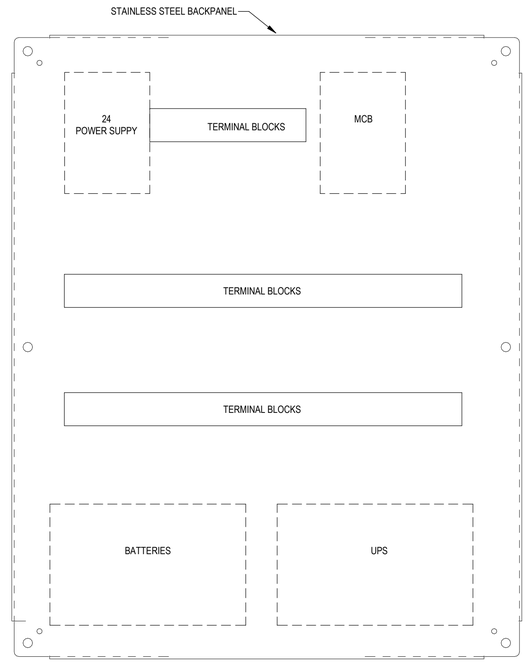
A. THIS PANEL ELEVATION IS A GENERAL ARRANGEMENT DRAWING AND SHOWS MAJOR COMPONENTS ONLY, NOT ALL MATERIALS NECESSARY FOR FABRICATION. SEE WIRING DIAGRAMS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION TO PROVIDE A COMPLETE AND OPERABLE SYSTEM.



ENCLOSURE EXTERIOR



SWING OUT PANEL



BACK PANEL

811 Know what's **below.** **Call** before you dig.
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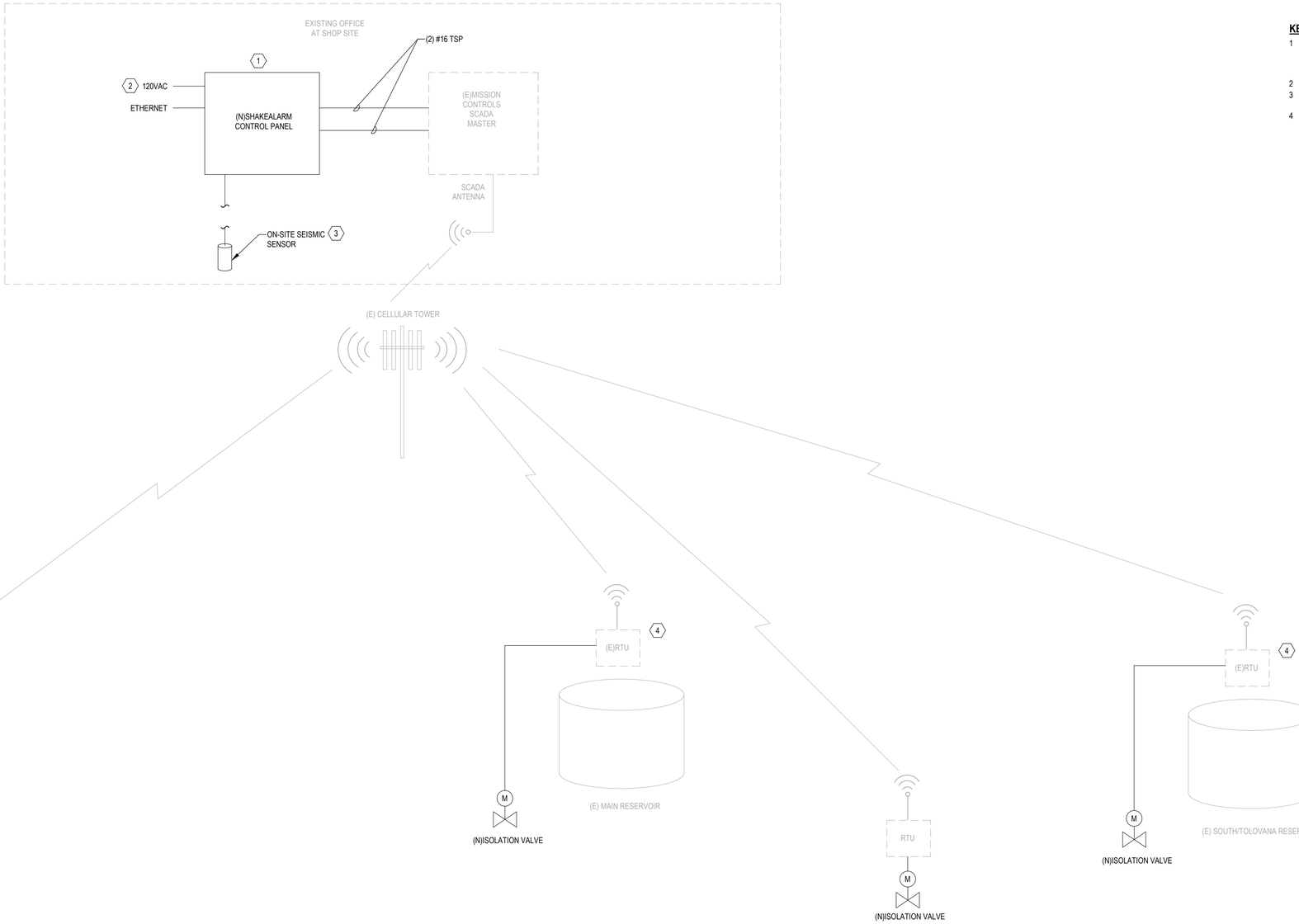
Checked by SEW

TYPICAL CONTROL PANEL ELEVATIONS

E701

100% PLAN FOR REVIEW



2 OVERALL NETWORK DIAGRAM
NOT TO SCALE

KEYNOTES

1 SHAKEALARM UNIT EQUIPMENT PROVIDED BY VARIUS INC. INSTALLATION, WIRING AND CONDUIT BY ELECTRICAL CONTRACTOR. MOUNT NEW SHAKEALARM UNIT ADJACENT TO EXISTING MISSION CONTROLS SCADA MASTER. SEE SPECIFICATIONS FOR FURTHER INFORMATION AND REQUIREMENTS.
2 120VAC POWER FROM NEAREST AVAILABLE CIRCUIT.
3 MOUNTING OF ON-SITE SEISMIC SENSOR SHALL BE INSTALLED ON AN ELEMENT OF THE BUILDING APPROVED BY ENGINEER.
4 ADD IO EXTENTION CARDS IF EXISTING RTUS DO NOT HAVE SUFFICIENT SPARES.

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SCADA NETWORK DIAGRAM

E801

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