

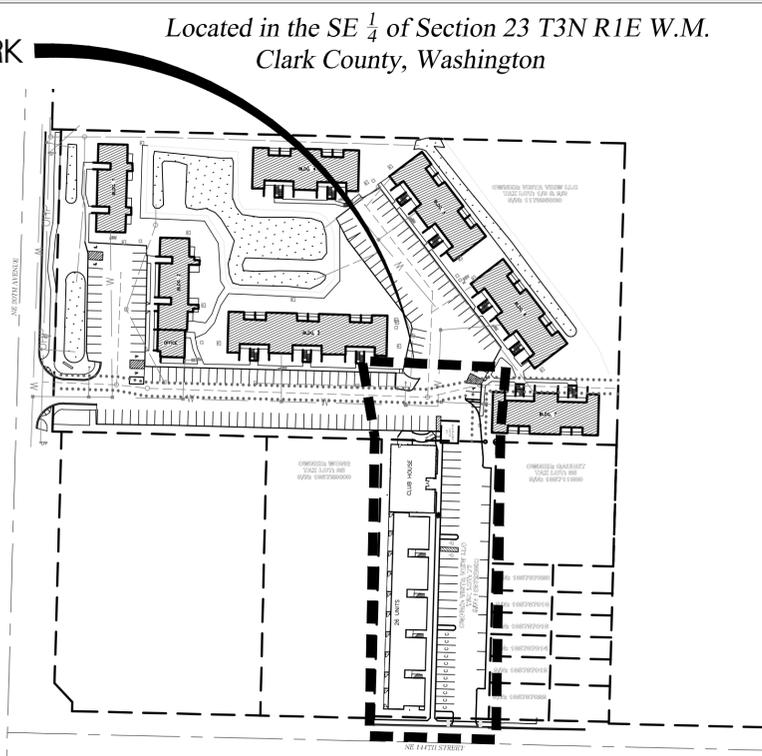
LEGEND

EXISTING	PROPOSED	DESCRIPTION
		SANITARY/STORM MANHOLE
		CATCH BASIN
		CLEANOUT
		CULVERT
		WATER METER
		WATER VALVE BOX
		IRRIGATION VALVE
		FIRE HYDRANT
		ELECTRICAL BOX
		UTILITY POLE
		SIGN
		BIOBAG
		SILT FENCE
		PROPERTY BOUNDARY LINE
		CENTERLINE
		RIGHT-OF-WAY LINE
		EASEMENT BOUNDARY LINE
		CONTOUR LINE
		BUILDING FOOTPRINT LINE
		CURB
		FENCE
		OVERHEAD POWER
		SANITARY SEWER
		STORM SEWER
		UNDERGROUND TELECOM
		WATER MAIN
		GAS MAIN

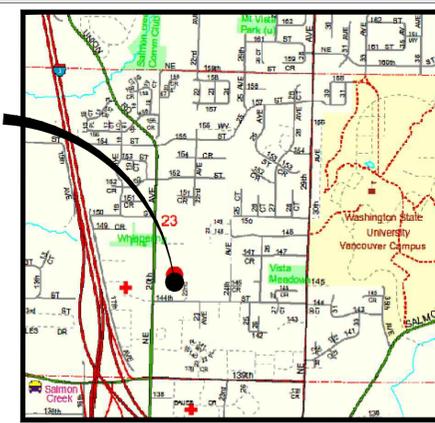
ABBREVIATIONS

AC	ASPHALT CONCRETE	MH	MANHOLE
ACP	ASPHALT CONCRETE PAVEMENT	MIN	MINIMUM
AD	AREA DRIAN	MISC	MISCELLANEOUS
ADA	AMERICANS WITH DISABILITY ACT	MON	MONUMENT
APPROX	APPRXIMATELY	MUCTD	MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES
AVE	AVERAGE	N	NORTH
B	BACKFLOW	NO	NUMBER
BO	BLOWOFF	NST	NOT STEEPER THAN
BL	BASELINE	NTS	NOT TO SCALE
BLDG	BUILDING	O-XING	OVERHEAD CROSSING
BLVD	BOULEVARD	O.C.	ON CENTER
BM	BENCH MARK	OD	OUTSIDE DIAMETER
BMP	BEST MANAGEMENT PRACTICE	OP	OVERHEAD POWER
BO	BLOWOFF	OT	OVERHEAD TELEPHONE
BRG	BEARING	P	POWER POLE
BVCE	BEGINNING OF VERTICAL CURVE ELEVATION	PAVT	PAVEMENT
BVCS	BEGINNING OF VERTICAL CURVE STATION	PC	POINT OF CURVATURE
CB	CATCH BASIN	PCC	POINT OF COMPOUND CURVE
CL	CLASS	PED	PEDESTRIAN
CL	CENTERLINE	PI	POINT OF INTERSECTION
CLR	CLEAR	PL	PROPERTY LINE
CJ	CONSTRUCTION JOINT	PP	POWER POLE
CO	CLEAN OUT	PRC	POINT OF REVERSE CURVE
CMP	CORRUGATED METAL PIPE	PSI	POUNDS PER SQUARE INCH
COMPT	COMPACTED	PT	POINT OF TANGENT
CONC	CONCRETE	PVC	POLYETHYL CHLORIDE
CONST	CONSTRUCTION	PVCC	POINT OF VERTICAL COMPOUND CURVE
CSTC	CRUSHED SURFACING TOP COURSE	PVI	POINT OF VERTICAL INTERSECTION
CU	CUBIC	PVRC	POINT OF VERTICAL REVERSE CURVE
D	DRAINPIPE	QTY	QUANTITY
DIAM	DIAMETER	R	RADIUS
DIST	DISTANCE	ROW	RIGHT OF WAY
DWG	DRAWING	R/W	RIGHT OF WAY
DWY	DRIVEWAY	S	SOUTH/SLOPE
EA	EACH	SAN	SANITARY
EJ	EXPANSION JOINT	SCHED	SCHEDULE
EL	ELEVATION	SD	STORM DRAIN
ELEC	ELECTRICAL	SF	SQUARE FOOT
EMB	EMBANKMENT	SHLD	SHOULDER
EP	EDGE OF PAVEMENT	SHT	SHEET
EST	ESTIMATE	SS	SANITARY SEWER
EVCE	END OF VERTICAL CURVE ELEVATION	ST	STREET
EVCS	END OF VERTICAL CURVE STATION	STA	STATION
EXIST	EXISTING	STD	STANDARD
FH	FIRE HYDRANT	S/W	IDEWALK
G	GAS LINE, GREEN	TC	TOP OF CURB
GB	GRADE BREAK	TEL	TELEPHONE
GRD	GROUND	TEMP	TEMPORARY
HDPE	HIGH DENSITY POLYETHYLENE	TP	TOP OF PAYMENT
HMAC	HOT MIX ASPHALT CONCRETE	TYP	TYPICAL
IE	INVERT ELEVATION	W	WATER
INV	INVERT	WM	WATER METER
IRR	IRRIGATION	WM	WATER MAIN
JB	JUNCTION BOX	WV	WATER VALVE
JTS, JT	JOINTS, JOINT	WSE	WATER SURFACE ELEVATION
L	LENGTH OF ARC	WDOT	WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
LF	LINEAR FOOT		

LIMITS OF WORK



SITE LOCATION
 2114 NE 144TH ST.
 VANCOUVER, WA 98686
 PROPERTY ID NUMBER 185722-000



VICINITY MAP
 NOT TO SCALE

SHEET INDEX

- C1.0 COVER SHEET
- C1.1 STANDARD CONSTRUCTION NOTES
- C2.0 EXISTING CONDITIONS SURVEY
- C3.0 STORM SEWER PLAN
- C3.1 SPOT ELEVATION PLAN
- C4.0 SANITARY SEWER & WATER PLAN
- C5.0 SITE PLAN
- C6.0 CLARK COUNTY EROSION CONTROL DETAILS
- C7.0 STORM SEWER DETAILS
- C7.1 STORM SEWER DETAILS
- C7.2 CRWWD SANITARY SEWER DETAILS
- C7.3 CPU WATER DETAILS
- C7.4 CPU WATER DETAILS
- C8.0 SITE DETAILS
- C8.1 SITE DETAILS
- LP1.0 LANDSCAPE PLAN
- LP1.1 LANDSCAPE NOTES
- LP1.2 LANDSCAPE DETAILS
- SP1.0 FINAL SITE PLAN
- LT1.0 SITE LIGHTING PLAN

APPLICANT

JERRY MARGER
 14501 NE 20TH AVE
 VANCOUVER WA, 98686
 PHONE: 360-567-0990
 CONTACTS:
 JERRY MARGER jmarger@comcast.net

BUILDER

VISTA VIEW LLC
 811 NE 112TH AVE STE 104
 VANCOUVER WA, 98684
 PHONE: 360-567-0990
 CONTACTS:
 JERRY MARGER jmarger@comcast.net
 DON KITTERMAN don@ceasefire.com

CONTACT/ENGINEER

ENGINEERING NORTHWEST PLLC
 7504 NW 10TH AVENUE
 VANCOUVER, WA 98685
 PHONE: (360) 931-3122
 CONTACT PAUL WILLIAMS P.E.
 EMAIL: paulwilliamspe@gmail.com

VICINITY MAP
 SCALE 1 : 100

**APPROVED CLARK P.U.D
 WATER UTILITIES**

RIO # _____ DATE _____

FIRE DISTRICT APPROVAL

APPROVED _____ DATE _____

SANITARY SEWER SYSTEM

APPROVED FOR CONSTRUCTION: _____ DATE _____

UTILITIES JURISDICTION

COMCAST (TELEVISION) PH: 888-632-2253
 CLARK PUBLIC UTILITY (WATER) PH:360-992-8552
 CLARK REGIONAL WASTEWATER:PH:360-750-5876
 CENTURY LINK (TELEPHONE) 360-699-3992
 NORTHWEST NATURAL GAS (GAS) 360-571-5465

UTILITY STATEMENT:

THE UNDERGROUND UTILITIES SHOWN ARE PER FIELD MARKINGS AND RECORD DRAWINGS PROVIDED BY THE RESPECTIVE UTILITY AGENCIES. LOCATION OF NON-OBSERVABLE AND/OR UNDERGROUND UTILITIES ARE SHOWN FOR INFORMATION ONLY AND ARE NOT GUARANTEED TO BE COMPLETE OR ACCURATE

UTILITY VERIFICATION

CONTRACTOR SHALL POTHOLE TO VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO COMMENCING CONSTRUCTION AND SHALL PROVIDE COLUMBIA NORTHWEST ENGINEERING 72-HOURS NOTICE OF ANY POTENTIAL CONFLICTS.

**DESIGN PROFESSIONAL SHALL COMPLETE ALL LINES:
 PROJECT QUANTITIES**

N/A = NOT APPLICABLE √ = APPLICABLE

GRADING:	
Onsite Excavation (Cut) Volume (Cubic Yards)	740CY
Onsite Fill Volume (Cubic Yards)	555 CY
Exported Volume (Cubic Yards)	125 CY
Imported Volume (Cubic Yards)	555 CY
DISTURBED AREA:	
Disturbed Area (Square Feet)	38,182.83
FLOW RESTORATION LAND COVER OBLIGATION (TO 0.1 ACRE):	
(FOR ONSITE AREAS ONLY AND WHEN MR #7 IS TRIGGERED)	
Total Project Area (Acres)	0.88
Pre-Development Effective Impervious Area Obligation (Acres)	0.13
Pre-Development Lawn/Landscape Obligation (Acres)	0.75
Pre-Development Pasture Obligation (Acres)	0
PUBLIC IMPROVEMENTS	
<input type="checkbox"/> Transportation (Arterial & Collector)	
Sidewalk Lineal Feet	N/A
Curb Lineal Feet	N/A
Street Lineal Feet	N/A
<input type="checkbox"/> Transportation (Other)	
Sidewalk Lineal Feet	125.5
Curb Lineal Feet	125.5
Street Lineal Feet	125.5
<input type="checkbox"/> Stormwater	
Facility Type	RAIN GARDEN
PRIVATE IMPROVEMENTS	
<input type="checkbox"/> Transportation	
Sidewalk Lineal Feet	304
Curb Lineal Feet	608
Street Lineal Feet	304
<input type="checkbox"/> Stormwater	
Facility Type	RAIN GARDEN

CONTRACTOR USE ONLY

CLARK COUNTY WASHINGTON
 proud past, promising future

ENG 2016-00

ENGINEERING CASE _____
 HABITAT CASE _____
 PLANNING LAND USE CASE _____
 WETLAND CASE _____

Signature	Clark County Fire Marshal	Date
Signature	Clark County Environmental Services Resource and Enhancement Permitting	Date
Signature	Clark County Transportation-Concurrence	Date
Signature	Clark County Transportation-Signal	Date
Signature	Clark County Transportation-Signing and Striping	Date
Signature	Clark County Development Engineering Final Site Plan	Date
Signature	Clark County Development Engineering	Date

A N/A

- Stormwater & Erosion Control CCC 40.380
- Stormwater & Erosion Control CCC 40.385
- Transportation & Circulation CCC 40.350
- Within Right-of-Way Landscaping Review
- Utility Permits CCC 13.12A & 12.20A
- Clark County Signing & Striping
- Clark County Traffic Signals
- Road Modifications CCC 40.550.010
- Critical Aquifer Recharge Areas CCC 40.410
- Geologic Hazard Areas CCC 40.430
- Flood Hazard Areas CCC 40.420
- Sewer and Water Plans
- Clark County M & D Pavement Deflection Testing
- Private Stormwater Covenant
- Grading, Excavation, Fill and Stockpile CCC 14.07

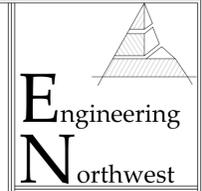
RECOMMENDED for APPROVAL

Engineering Team Leader _____ Date _____

APPROVED for CONSTRUCTION

Clark County Engineer _____ Date _____

Plans Approved for Construction by the County does not in any way relieve the applicant of responsibility to meet all requirements of the County or obligations to protect life, health and property. Plans have been reviewed and approved for compliance with Clark County Code and adopted regulations. Plans shall be revised or supplemented at any time it is determined that the full requirements of the County have not been met. Rev. 05/14/12



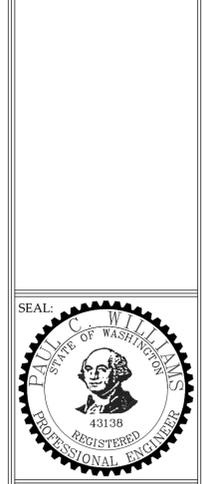
COVER SHEET FOR:

VISTA VIEW APARTMENTS

A Site in Clark County, Washington
 Consulting Engineers & Planners 7504 NW 10th Avenue Vancouver, WA 98665 PH (360) 931-3122



REVISIONS:



PROJECT NO: 15017
 DESIGNED BY: PCW
 DRAWN BY: JMB
 DATE: 5/26/2016

SHEET NO.

C1.0

SHEET 1 OF 20

CLARK COUNTY STANDARD PLAN NOTES

- All construction shall be in accordance with the Clark County Code (CCC), Clark County Street and Road Standards (CCSRS), Clark County Standard Details Manual (CCSDM) and the Land Use Conditions of Approval. It shall be the sole responsibility of the applicant and the professional civil engineer to correct any error, omission, or variation from the above requirements found in these plans.
- Approval of roadways, grading, erosion control and drainage plan by Clark County does not constitute an approval of any other construction (e.g., domestic water conveyance, sewer conveyance, gas, electrical, etc.).
- Before any construction or development activity, a preconstruction meeting must be held between the Department of Community Development, Engineering Services (DCDES) Construction Inspection Section of the Engineering Services Division, the Applicant, and the Applicant's Consulting Engineer and Construction Representatives.
- A copy of these approved plans must be on the job site whenever construction is in progress.
- Construction noise shall be limited in accordance with the Nuisance Ordinance CCC 9.14.010(3); normally, this is 7a.m. to 10 p.m. seven days a week.
- It shall be the Applicant's/Contractor's responsibility to obtain all construction easements and/or right of entries prior to construction work.
- All franchised utilities (i.e. gas, electric, phone) or other installations that are not shown on these approved plans shall not be constructed unless an approved set of plans that meets all requirements of CCSRS (CCC 40.350.030) is submitted to the DCDES Construction Inspection Section three days prior to construction.
- Datum shall be Clark County Datum NGVD 1929(47) unless otherwise approved by DCDES.
- All utility trenches shall be backfilled and compacted to 95 percent maximum density as determined by AASHTO T-99, within the roadway prism (CCC40.350.030(C)(4)(e)).
- All roadway subgrade within the roadway prism shall be backfilled and compacted to 95 percent maximum density as determined by AASHTO T-99 (WSDOT 2-06.3).
- Open cutting of existing roadways is not allowed unless specifically approved by DCDES and noted on these approved plans. Any open cut shall be restored in accordance with Clark County Code (see Standard Trench Restoration Notes of Standard Details Manual).
- 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. Any work within the traveled right-of-way that may interrupt normal traffic flow shall require at least one flagger for each lane of traffic affected. Section 1-07.23, "Traffic Control," of the WSDOT Standard Specifications shall apply in its entirety.
- Storm Drain, Erosion Control, Trench Restoration, Grading, and Signing & Striping General Notes per Standard Plans D1.0, ECN1 and UGN respectively are made part of these notes, and are to be included in the construction plan set. If any cultural resources and/or human remains are discovered in the course of undertaking the development activity, the Department of Archaeology and Historic Preservation in Olympia and Clark County Department of Community Development shall be notified. Failure to comply with these State requirements may constitute a Class C Felony, subject to imprisonment and/or fines.

GENERAL NOTES

- THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY ALL EXISTING CONDITIONS AND ELEVATIONS TO HIS/HER SATISFACTION
- THE CONTRACTOR SHALL REVIEW THE SITE SOIL AND MAKE HIS/HER DETERMINATION OF EXISTING CONDITIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONDITIONS ENCOUNTERED.
- CONTRACTOR SHALL LOCATE AND MARK ALL EXISTING PROPERTY MONUMENTS PRIOR TO CONSTRUCTION. ANY MONUMENTS DISTURBED DURING CONSTRUCTION OF THIS PROJECT SHALL BE REPLACED BY A REGISTERED LAND SURVEYOR AT THE CONTRACTORS EXPENSE. A SURVEYOR SHALL BE RECORDED WITH CLARK COUNTY FOR ANY RESET MONUMENTS.
- THE CONTRACTOR SHALL PROTECT AND MAINTAIN ALL EXISTING UTILITIES ON THIS SITE. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN OR NOT SHOWN ON THESE PLANS, SHALL BE REPAIRED/REPLACED AT THE CONTRACTOR'S EXPENSE. EXISTING SURFACE FEATURES AND FENCING SHALL BE REPLACED AND KIND.
- FINAL CLEANUP - PRIOR TO FINAL ACCEPTANCE AND PAYMENT, THE CONTRACTOR SHALL CLEAN THE WORK SITE AND ADJACENT AREAS OF ANY DEBRIS, DISCARDED ASPHALT CONCRETE MATERIAL OR OTHER ITEMS DEPOSITED BY THE CONTRACTOR'S PERSONNEL DURING THE PERFORMANCE OF THIS CONTRACT.
- THE CONTRACTOR SHALL TAKE NO ADVANTAGE OF ANY ERRORS, OMISSIONS, OR DISCREPANCIES IN THE PLANS. WHEN ERRORS, OMISSIONS OR DISCREPANCIES ARE FOUND, THE ENGINEER SHALL BE NOTIFIED. WORK PERFORMED BY THE CONTRACTOR AS A RESULT OF AN ERROR, OMISSION OR DISCREPANCY IN THE PLAN SHALL BE AT THE CONTRACTOR'S RISK AND EXPENSE WHEN SUCH ERRORS, OMISSIONS, OR DISCOURAGED DISCREPANCIES HAVE NOT BEEN BROUGHT TO THE ATTENTION OF THE ENGINEER.
- ALL EXCAVATORS MUST COMPLY WITH ALL PROVISIONS OF RCW 19.722, INCLUDING CONTRACTING NW UTILITY NOTIFICATION CENTER AT 1-800-563-4344 AT LEAST 48 BUSINESS DAYS HOURS, BUT NOT MORE THAN 10 BUSINESS DAYS, BEFORE COMMENCEMENT AN EXCAVATION
- ENGINEERING NORTHWEST ASSUMES NO RESPONSIBILITY FOR ANY DISCREPANCIES ENCOUNTER BETWEEN THE CURRENT FIELD CONDITIONS AND THE INFORMATION SHOWN ON THE CONSTRUCTION PLANS. CONTRACTOR IS RESPONSIBLE FOR REPORTING ANY DISCREPANCIES TO THE OWNERS REPRESENTATIVE.

INFILTRATION FACILITY INSTALLATION NOTES

- THE INSTALLATION OF INFILTRATION SYSTEM SHALL BE OBSERVED AND DOCUMENTED BY A LICENSED ENGINEER. DURING CONSTRUCTION, THE LICENSED ENGINEER SHALL VERIFY THAT THE INFILTRATION RATES USED IN THE FINAL STORM WATER ANALYSIS ARE ATTAINED AT THE EXACT LOCATION AND DEPTH OF THE PROPOSED STORMWATER INFILTRATION FACILITIES.
- INFILTRATION AREAS ARE DEFINED AS ANY AREA THAT WILL BE INFILTRATING RUNOFF INTO THE SUBGRADE, INCLUDING, BUT NOT LIMITED TO, POROUS PAPER, INFILTRATION BASINS, ROCK TRENCHES, ETC.
- ALL INFILTRATION AREAS SHALL BE PROTECTED FROM COMPACTING BY DELINEATING THE INFILTRATION, WITH ORANGE PROTECTION FENCE. THE EXISTING SUBGRADE SHALL NOT BE COMPACTED OR SUBJECT TO VEHICLE TRAFFIC PRIOR TO AGGREGATE PLACEMENT. THEREFORE, CONSTRUCTION EQUIPMENT MUST ALWAYS WORK FROM THE SIDES OF THE INFILTRATION AREAS DURING EXCAVATION OR USE TRACK EQUIPMENT.
- ALL INFILTRATION AREA SHALL BE PROTECTED FROM SEDIMENTATION WITH APPROPRIATE EROSION CONTROL MEASURES. WHEN EROSION OF SUBGRADE HAS CAUSED ACCUMULATIONS OF FINE MATERIAL AND/OR SURFACE PONDING, THIS MATERIAL SHALL BE REMOVED WITH LIGHT EQUIPMENT AND THEY UNDERLYING SOILS SCARIFIED TO A MINIMUM DEPTH OF 6 INCHES WITH A YORK RAKE (OR EQUIVALENT) AND LIGHT TRACTOR.
- CLEANED (WASHED) UNIFORMLY-CREATED AGGREGATE IS PLACED IN MAXIMUM 8 INCH LIST EACH LAYER SHALL BE LIGHTLY COMPACTED BY A TRACTOR EQUIPMENT THAT SHALL BE KEPT OFF THE BED BOTTOM AS MUCH AS POSSIBLE.
- IF WATER SEEPAGE INTO FACILITY OCCURS DURING CONSTRUCTION, COORDINATE WITH CIVIL ENGINEER.

CRWWD STANDARD CONSTRUCTION NOTES

- ALL SANITARY SEWER CONSTRUCTION WILL CONFORM TO THE CURRENT ADOPTED CONSTRUCTION SPECIFICATIONS OF THE DISTRICT.
- ALL WORK IN CLARK COUNTY RIGHT AWAY WILL CONFORM TO THE REQUIREMENTS FOR THE CLARK COUNTY UTILITY PERMIT, CITY OF VANCOUVER CITY OF BATTLEGROUND, WSDOT FRANCHISE, OR DISTRICT REQUIREMENTS, WHICHEVER ARE MORE RESTRICTIVE.
- A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD PRIOR TO THE START OF CONSTRUCTION OF THE PROJECT.
- GRAVITY SANITARY SEWER PIPE MATERIAL FOR LINES 6 (6) INCHES INSIDE DIAMETER AND LARGER SHALL BE:
 - AWWA C-900 OR C-905 SDR 18 PVC PIPE AT DEPTHS OF COVER FROM THREE (3) FEET TO LESS THAN FIVE (5) FEET IN A VEHICLE-TRAVELED AREA; OR
 - PVC PIPE AT DEPTHS OF COVER OF FIVE (5) FEET TO DEPTHS OFCOVER OF TWENTY (20) FEET; OR
 - AWWA C-900 OR C-905 OR CLASS 50 DUCTILE IRON PIPE AT DEPTHS OF COVER GREATER THAN TWENTY (20) FEET.
- GRAVITY SANITARY SEWER PIPE MATERIALS FOR LINES FOUR (4) INCHES INSIDE DIAMETER AND SMALLER SHALL BE:
 - AWWA C-900 OR C-905 PVC PIPE AT DEPTHS OF COVER FROM THREE (3) FEET TO LESS THAN FIVE (5) FEET IN VEHICLE-TRAVELED AREAS; OR
 - SCHEDULE 40 ABS OR SCHEDULE 40 SOLVENT WELD JOINT PVC AT DEPTHS OF COVER FROM THREE (3) FEET TO LESS THAN FIVE (5) FEET IN NON-VEHICLE TRACELED AREAS; OR
 - SCHEDULE 40 ABS OR SCHEDULE 40 SOLVENT JOINT PVC AT DEPTHS OF COVER OF FIVE (5) FEET OR MORE.
- THE INNS OF SIDE SEWER (LATERALS) SHALL BE:
 - BACKFILLED ONLY AFTER DISTRICT INSPECTION AND APPROVAL AND THE DESIGN ENGINEER OR SURVEYOR HAS OBTAIN RECORD DRAWING INFORMATION.
 - MARKED WITH A 2"x4"x10" WRAPPED WITH A 14GAUGE WIRE NOT CONNECTED AND AT A 90° ANGLE FROM THE END OF THE LATERAL. THE MARKER WILL BE EXTENDED AT LEAST 3 FEET ABOVE THE FINISH CROWN SURFACE. 2 FEET OF EACH END OF THE 2"x4" SHALL BE PAINTED GREEN. IF THE 2"x4" IS NOT 10 FEET LONG THE CONTRACTOR SHALL MARK THE ACTUAL LENGTH ON THE 2" X 4" WITHIN 6 INCHES OF THE TOP AND ON BOTH SIDES.
- ALL MANHOLE JOINTS SHALL BE EXTERNALLY SEALED WITH NPC EXTERNAL-SEAL (EIGHT (8) INCH NOMINAL WIDTH), OR APPROVED EQUAL.
- MANHOLES SHALL NOT HAVE EDGES OF MANHOLE CASTING AND COVERED WITHIN 3 FEET OF THE CURB AND GUTTER.
- ALL TESTING SHALL BE IN ACCORDANCE WITH THE DISTRICT'S CONSTRUCTION SPECIFICATIONS.
- AT THE PRE-CONSTRUCTION CONFERENCE, THE CONTRACTOR MUST DATE IF THEY INTEND TO USE AND APPROVED PRIVATE TELEVISION INSPECTION SUBCONTRACTOR OR THE DISTRICT.
- THE DESIGN ENGINEER OF SURVEYOR WILL SUBMIT PRE-PAVING RECORD DRAWINGS PRIOR TO TESTING RECORD DRAWINGS SHALL BE SUBMITTED TO THE DISTRICT PRIOR TO FINAL ACCEPTANCE.
- ALL LATERAL LINE SHALL BE INSTALLED WITH TONING WIRE.IONING WIRE SHALL BE INSTALLED ON MAIN LINES WHERE SHOWN ON THE PLANS.
- OWNERS ENGINEER SHALL VERIFY CLEANOUT INVERT ELEVATION PRIOR TO BACKFILLING.

UTILITY NOTES

- ALL WATER FACILITIES AND THE INSTALLATION THEREOF SHALL FOLLOW THE CLARK PUBLIC UTILITY DISTRICT STANDARDS AND THE 1998 EDITION OF APWA WITH CPUD INSPECTION DURING CONSTRUCTION.
- ALL TRENCH BACKFILL SHALL BE AS SHOWN ON THE PIPE BEDDING AND BACKFILL DETAIL. FLOODING OR JETTING THE BACKFILLED TRENCHES WITH WATER IS NOT PERMITTED.
- CONNECTIONS TO EXISTING UTILITIES SHALL CONFORM WITH CLARK COUNTY ENGINEERING DESIGN MANUAL AND STANDARD DRAWINGS.
- ALL WATER AND FIRE PROTECTION PIPE SHALL HAVE MINIMUM 36-INCH COVER TO FINISHED GRADE.
- ALL WATER LINES SHALL BE THOROUGHLY FLUSHED, CHLORINATED AND TESTED IN ACCORDANCE WITH THE WASHINGTON STATE DEPARTMENT OF ECOLOGY PRIOR TO ANY METER HOOK-UP SERVICE.
- BEGIN LAYING STORM AND SANITARY SEWER PIPE AT THE LOW POINT OF THE SYSTEM TRUE TO GRADE AND ALIGNMENT INDICATED WITH UNBROKEN CONTINUITY OF INVERT. ESTABLISH LINE AND GRADE FOR THE STORM AND SANITARY SEWER PIPE BY THE USE OF A LASER.
- CONTRACTOR SHALL PREVENT SEDIMENTS FROM ENTERING THE STORM DRAINAGE SYSTEM.
- CONTRACTOR TO MAINTAIN A MINIMUM 10' HORIZONTAL AND 18" VERTICAL SEPARATION BETWEEN ALL EXISTING AND PROPOSED WATER AND SEWER LINES.
- FOR CROSSINGS OF SANITARY SEWER LINES, THE WASHINGTON STATE DEPARTMENT OF ECOLOGY CRITERIA SHALL APPLY.

PAVING NOTES

- STREET SIGNS AND STRIPING TO BE INSTALLED BY THE CONTRACTOR PER MUTCD.
- ALL PAVEMENT SHALL BE CUT STRAIGHT PRIOR TO PAVING. EXISTING PAVEMENT SHALL BE REMOVED AS NECESSARY TO PROVIDE A SMOOTH TRANSITION FOR BOTH RIDE AND DRAINAGE.
- PAVING WILL NOT BE ALLOWED DURING WET OR COLD WEATHER, PER WDOT SPECIFICATIONS.
- PRE-PAVING AS-BUILT SHALL BE SUBMITTED TO THE CLARK COUNTY INSPECTOR FOR PUBLIC UTILITIES PRIOR TO PAVING. CONTRACTOR TO SUBMIT CONSTRUCTION REDLINES TO ENGINEER.
- CONTRACTOR TO INSTALL ADA WHEELCHAIR RAMPS AND SIDEWALKS AS SHOWN ON PLANS AND ON THE DETAIL SHEETS.
- ALL CONSTRUCTION WITHIN CLARK COUNTY RIGHT-OF-WAY SHALL HAVE AN APPROVED TRAFFIC CONTROL PLAN AND RIGHT-OF-WAY PERMIT PRIOR TO ANY ON-SITE CONSTRUCTION ACTIVITY.

MATERIAL NOTES

- MATERIALS SHALL BE NEW. THE USE OF MANUFACTURER'S NAMES, MODELS, AND NUMBERS IS INTENDED TO ESTABLISH STYLE, QUALITY, APPEARANCE, AND USEFULNESS. PROPOSED SUBSTITUTIONS WILL REQUIRE WRITTEN APPROVAL FROM ENGINEER PRIOR TO INSTALLATION.
- ALL ON-SITE WATER, STORM AND SANITARY SEWER PIPE MATERIALS, FITTINGS SHALL CONFORM TO THE WASHINGTON STATE PLUMBING SPECIALTY CODE, LA TEST EDITION.
- ON-SITE STORM SEWER PIPE SHALL BE PVC PIPE CONFORMING TO ASTM 03034 SOR 35, OR HOPE PIPE (ADS 'N-12' OR APPROVED EQUAL) CONFORMING TO AASHTO M252 W/WA TERTIGHT JOINTS.
- ON-SITE STORM SEWER PIPE WITH LESS THAN 2' OF COVER SHALL BE HOPE PIPE.
- ON-SITE CATCH BASINS AND AREA DRAINS SHALL BE MANUFACTURED BY LYNCH CO., INC. OR APPROVED EQUAL.
- ON-SITE SANITARY SEWER PIPE SHALL BE PVC PIPE CONFORMING TO ASTM 03034, SOR 35.

GRADING NOTES

- ALL SURFACES SHALL HAVE MINIMUM 2.0% SLOPE AND SHALL MEET EXISTING GRADES SMOOTHLY AND EVENLY. MAINTAIN CONSTANT SLOPES UNLESS OTHERWISE NOTES ON PLANS.
- CONTRACTOR RESPONSIBLE FOR MAINTAINING EXISTING SITE AND DRAINAGE PATTERNS AND PROTECTION OF EXISTING ENGINEERED DRAINAGE FACILITIES.
- CONTRACTOR SHALL EXERCISE CARE IN ALL OPERATIONS TO PROTECT EXISTING UNDERGROUND UTILITIES. ANY DAMAGE RESULTING FROM THIS WORK MUST BE RESTORED AT THE CONTRACTOR'S EXPENSE TO THE APPROVAL OF THE OWNER'S REPRESENTATIVE.
- CONTRACTOR SHALL REPLACE AND RESTORE AREAS NOT SCHEDULED FOR CONSTRUCTION TO THEIR ORIGINAL CONDITION AND TO THE APPROVAL OF THE OWNER'S REPRESENTATIVE.
- CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN WORKING IN AREAS ADJACENT TO EXISTING TREES IN ORDER TO MINIMIZE DISTURBANCES TO TREE ROOTS. CONTRACTOR SHALL INSTALL TREE PROTECTION FENCING AS INDICATED ON PLANS OR AT DRIP-LINE OF EXISTING TREES. SEE TREE PROTECTION SPECIFICATIONS AND NOTES. NO PARKING VEHICLES UNDER TREES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR DEMOLITION AND DISPOSAL OF EXISTING AC, CURBS, SIDEWALKS AND OTHER SITE ELEMENTS WITHIN THE PROJECT AREA. DISPOSE OF DEMOLISHED ITEMS OFF-SITE IN A LEGAL MANNER.
- ACTUAL LINES AND GRADES OF EXCAVATION SHALL BE STAKED BY QUALIFIED SURVEYOR, BASED ON DIMENSIONS AND BEARINGS AS SHOWN ON THE PLANS. CONTRACTOR SHALL RETAIN A SURVEYOR LICENSED IN WASHINGTON.
- ADJUST ALL INCIDENTAL STRUCTURES, MANHOLE LIDS, VALVE BOXES, ETC. TO FINISH GRADE.
- DEMOLITION WORK SHALL INCLUDE REMOVAL OF ALL STUMPS AND VEGETATION DEBRIS ENCOUNTERED.
- CLEAR AND GRUB WITHIN WORK LIMITS ALL SURFACE VEGETATION, TREES, STUMPS, BRUSH, ROOTS, ETC. DO NOT DAMAGE OR REMOVE TREES EXCEPT AS APPROVED BY THE ENGINEER OR AS SHOWN ON THE DRAWINGS. PROTECT ALL ROOTS TWO INCHES IN DIAMETER OR LARGER.
- STRIP WORK LIMITS, REMOVING ALL ORGANIC MATTER WHICH CANNOT BE COMPACTED INTO A STABLE MASS. ALL TREES, BRUSH AND DEBRIS ASSOCIATED WITH CLEARING, STRIPPING OR GRADING SHALL BE REMOVED AND DISPOSED OF OFF-SITE.
- CONTRACTOR SHALL REMOVE ALL UNSUITABLE MATERIAL, DEBRIS, AND ORGANIC MATERIALS WITHIN GRADING AND FILL LIMITS PRIOR TO FILL PLACEMENT. BENCH NEW FILL MATERIAL INTO EXISTING GROUND AS DIRECTED BY THE ENGINEER.
- ALL SPOILS FROM DRIVEWAY AND FOUNDATION CONSTRUCTION SHALL BE DISPOSED OF, HANDLED, OR STORED OUTSIDE THE DRIP LINES OF THE REMAINING TREES.
- THE CONTRACTOR SHALL UTILIZE SUITABLE SUBGRADE MATERIAL FOR ALL FILLS. ALL FILLS IN FINISH PAVED AREAS ARE TO BE PLACED IN 8" LIFTS. THE CONTRACTOR SHALL COMPACT EACH LIFT TO A DENSITY OF 95% OF AASHTO T209 OR AS DIRECTED IN THE GEOTECHNICAL REPORT. COMPACT SUBGRADE TO A LINE ONE FOOT BEYOND EDGE OF BASE ROCK. SUITABLE MATERIAL SHALL BE AS DEFINED BY THE CIVIL ENGINEER.
- IN ADDITION TO ANY REQUIRED COMPACTION TESTING, CONTRACTOR SHALL PERFORM A "PROOF ROLL" WITH A FULLY LOADED 10-YARD DUMP TRUCK TO CHECK SUBGRADE COMPACTION PRIOR TO PLACEMENT OF BASE ROCK AND AGAIN AT THE COMPLETION OF THE PLACEMENT OF THE BASE ROCK PRIOR TO PLACEMENT OF CHIP SEAL.
- SUBSEQUENT SETTLEMENT OR CRACKING OF FINISHED SURFACE WITHIN THE WARRANTY PERIOD SHALL BE CONSIDERED TO BE A FAILURE OF THE SUBGRADE AND REPAIRED AT NO COST TO THE OWNER AND IN A MANNER ACCEPTABLE TO THE OWNER
- ALL SUBGRADE UNDER PAVED SURFACES, CURBS, BUILDINGS, FOOTINGS, SLABS AND CONCRETE WALKS SHALL BE COMPACTED TO 95% OF MAXIMUM RELATIVE DENSITY OR AS SPECIFIED BY THE PROJECT CIVIL ENGINEER. WHERE FILLING IS REQUIRED, THE FILL MATERIAL SHALL BE PLACED IN 8" LIFTS WITH EACH LIFT BEING COMPACTED TO 95% OF MAXIMUM RELATIVE DENSITY OF THE FILL MATERIAL BEFORE THE NEXT LIFT OR FINISHED SURFACE IS PLACED. WHERE FILLING IS REQUIRED OUTSIDE THE ABOVE-MENTIONED STRUCTURAL AREAS, COMPACTION REQUIREMENTS SHALL BE 90% OF MAXIMUM RELATIVE DENSITY. PROJECT CIVIL ENGINEER SHALL SUBMIT COMPACTION TEST RESULTS TO COUNTY INSPECTOR FOR PROPER CERTIFICATION OF FILL PLACEMENT.

CONSTRUCTION NOTES FOR:

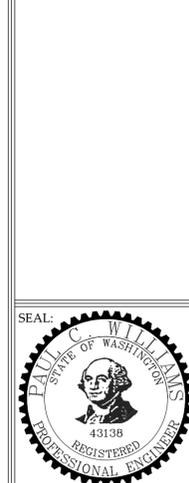
VISTA VIEW APARTMENTS

A Site in Clark County, Washington

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REVISIONS:



PROJECT NO: 15017
DESIGNED BY: PCW
DRAWN BY: JMB
DATE: 5/24/2016

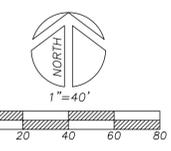
SHEET NO.
C1.1
SHEET 2 OF 20

VISTA VIEW APARTMENTS BOUNDARY & EXISTING CONDITIONS SURVEY

A PORTION OF THE NW 1/4 OF THE SE 1/4 OF SECTION 23,
TOWNSHIP 3 NORTH, RANGE 1 EAST, W.M.,
CLARK COUNTY, WASHINGTON

PARCEL NUMBER 185722000

PREPARED FOR
VISTA VIEW LLC
JANUARY 4, 2016



BASIS OF BEARINGS
VISTA RIDGE TOWNHOMES AS
RECORDED IN BOOK 311,
PAGE 347, CLARK COUNTY
PLAT RECORDS.

VERTICAL DATUM
CLARK COUNTY
NGVD 29(47)

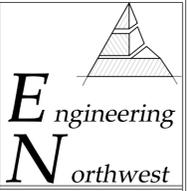
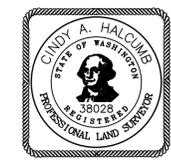
SITE DATA

PARCEL ID	117895-030
PARCEL ADDRESS	14505 NE 20TH AVE VANCOUVER WA 98686
PARCEL SIZE	4.4 ACRES = 191,664 sq.ft.
PRESENT USE:	90 UNITS FAMILY UNITS
TRANSIT ROUTES & STOPS	C-TRAN ROUTE #19
EXISTING WATER	CLACK PUD
EXISTING SEWER	CLARK REGIONAL WASTEWATER DISTRICT
EXISTING ELECTRICAL	CLACK PUD
EXISTING SETBACKS	
STREET	= 20 FT.
SIDE	= 10 FT.
REAR	= 20 FT.
PARCEL ID 185722-000	0.87 ACRES = 37,897 sq.ft.

LEGEND

- FOUND LOT CORNER
- ⊙ SANITARY SEWER MANHOLE
- ⊙ SEWER CLEANOUT
- STORM DRAINAGE CATCH BASIN
- ⊙ STORM DRAINAGE MANHOLE
- ⊙ FIRE HYDRANT
- ⊙ WATER METER
- ⊙ WATER VALVE
- ⊙ TELEPHONE PEDESTAL
- ⊙ POWER POLE
- ⊙ CONIFEROUS TREE
- ⊙ DECIDUOUS TREE
- SD — SD — UNDERGROUND STORM DRAINAGE LINE
- SS — SS — UNDERGROUND SANITARY SEWER LINE
- W — W — UNDERGROUND WATER LINE
- XP — XP — UNDERGROUND POWER LINE
- OHP — OHP — OVERHEAD UTILITY LINE

NOTE: UNDERGROUND UTILITIES ARE APPROXIMATE,
SHOWN ON THE BASIS OF SURFACE STRUCTURES,
AS-BUILT MAPPING, AND UTILITY LOCATES BY OTHERS.



EXISTING CONDITIONS SURVEY FOR:
VISTA VIEW APARTMENTS



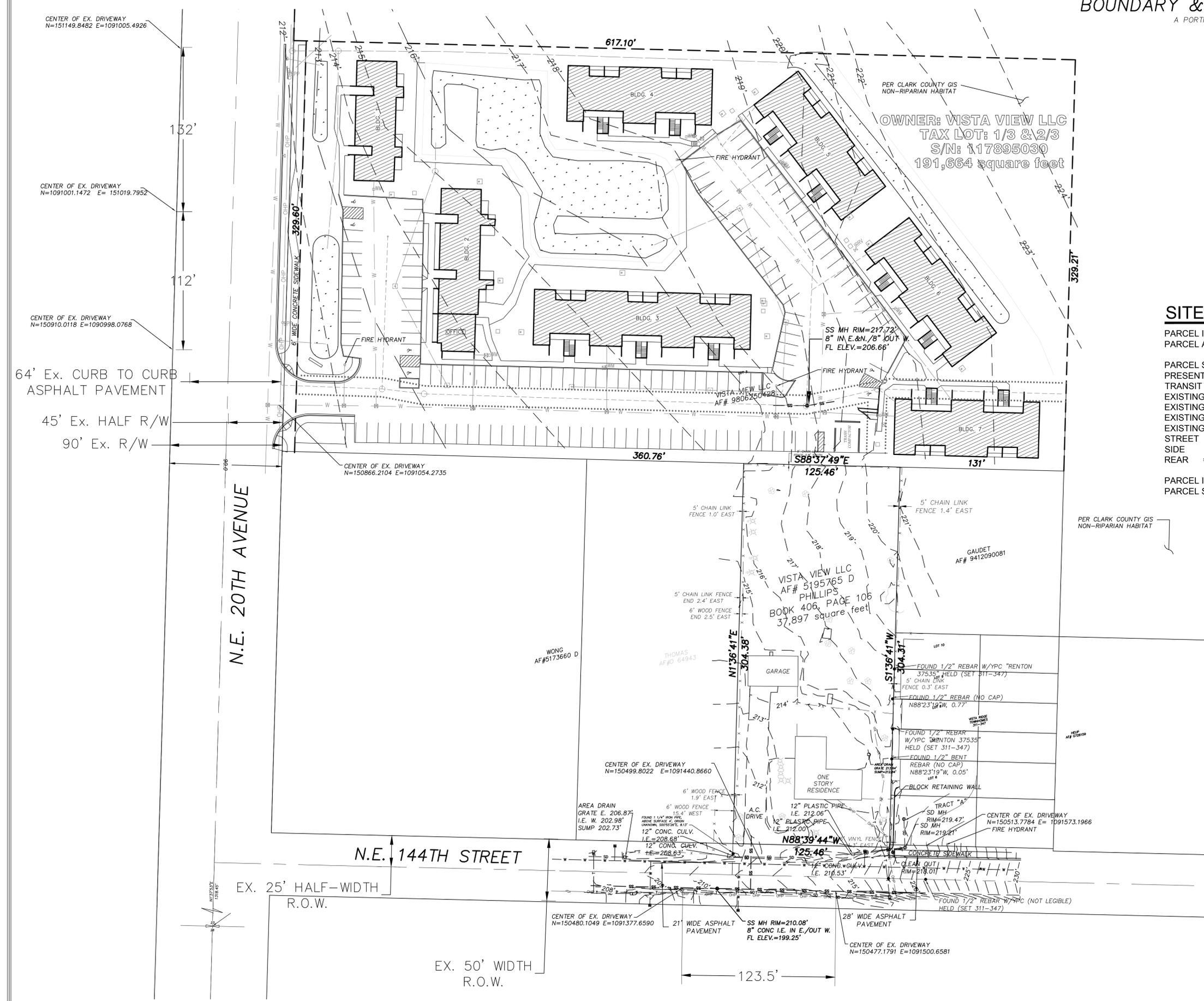
REVISIONS:



PROJECT NO: 15017
DESIGNED BY: PCW
DRAWN BY: JMB
DATE: 7/18/2016

SHEET NO. C2.0

SHEET 3 OF 15



CENTER OF EX. DRIVEWAY
N=151149.8482 E=1091005.4926

CENTER OF EX. DRIVEWAY
N=1091001.1472 E= 151019.7952

CENTER OF EX. DRIVEWAY
N=150910.0118 E=1090998.0768

64' Ex. CURB TO CURB
ASPHALT PAVEMENT

45' Ex. HALF R/W

90' Ex. R/W

N.E. 20TH AVENUE

N.E. 144TH STREET

EX. 25' HALF-WIDTH
R.O.W.

EX. 50' WIDTH
R.O.W.

CENTER OF EX. DRIVEWAY
N=150480.1049 E=1091377.6590

CENTER OF EX. DRIVEWAY
N=150477.1791 E=1091500.6581

CENTER OF EX. DRIVEWAY
N=150499.8022 E=1091440.8660

CENTER OF EX. DRIVEWAY
N=150513.7784 E= 1091513.1966

WONG
AF#5173660 D

THOMAS
AF# 64943

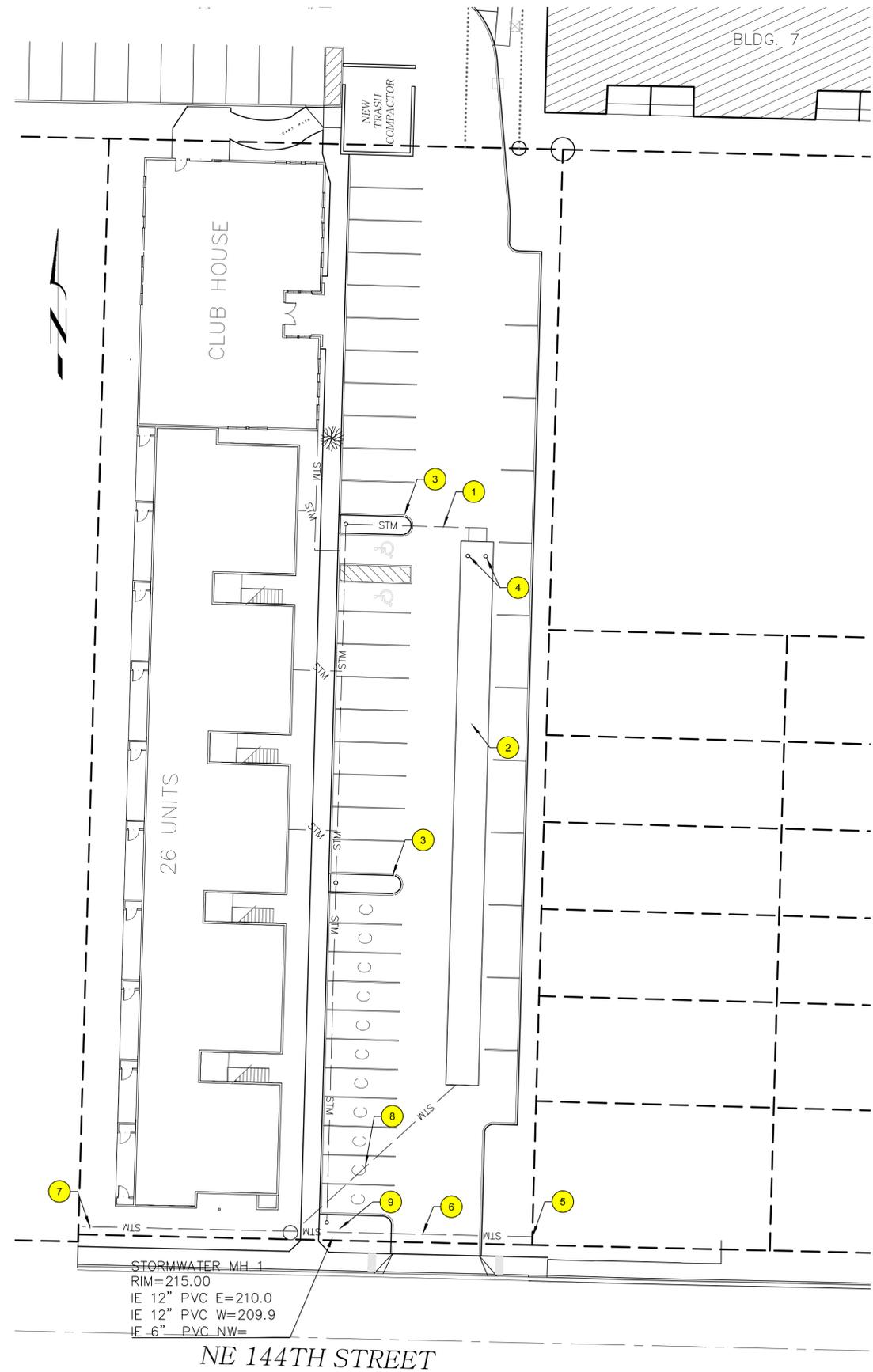
GAUDET
AF# 9412090081

VISTA VIEW LLC
AF# 5195765 D
PHILLIPS
BOOK 406, PAGE 106
37,897 square feet

OWNER: VISTA VIEW LLC
TAX LOT: 1/3 & 2/3
S/N: 117895030
191,664 square feet

PER CLARK COUNTY GIS
NON-RIPARIAN HABITAT

PER CLARK COUNTY GIS
NON-RIPARIAN HABITAT



KEYNOTES

1. 8" PVC (DWV)
2. STORMTECH SC-740 SYSTEM TWO ROWS 150' X 4.28'. BOTTOM EL 214'
INSTALL PER MANUFACTURE RECOMMENDATION (SEE SHEET C7.1)
3. RAINGARDEN (SEE SHEET C7.0)
4. INSPECTION PORT
5. TIE INTO EXISTING 12" CULVERT AND 12" ROOF DRAIN FROM VISTA RIDGE TOWNHOMES.
EXISTING 12" I.E. 212.0'
6. 12" DUCTILE IRON CULVERT
7. MATCH EXISTING DRAINAGE DITCH (I.E. 208.63)
8. 6" EMERGENCY PIPE
9. MANHOLE

1 STORM SEWER PLAN
1" = 20'

STORM SEWER PLAN FOR:
VISTA VIEW APARTMENTS

A Site in Clark County, Washington
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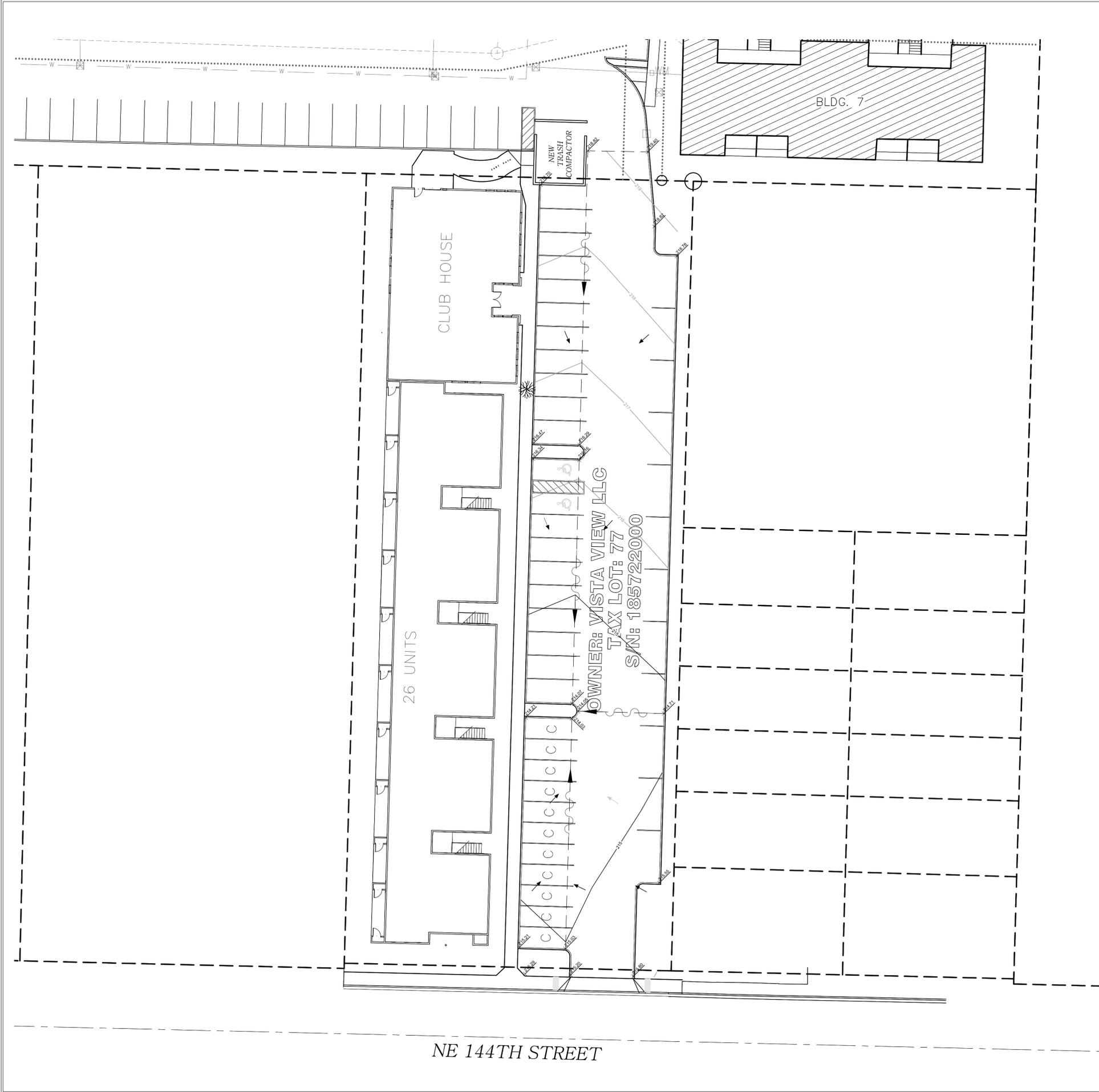


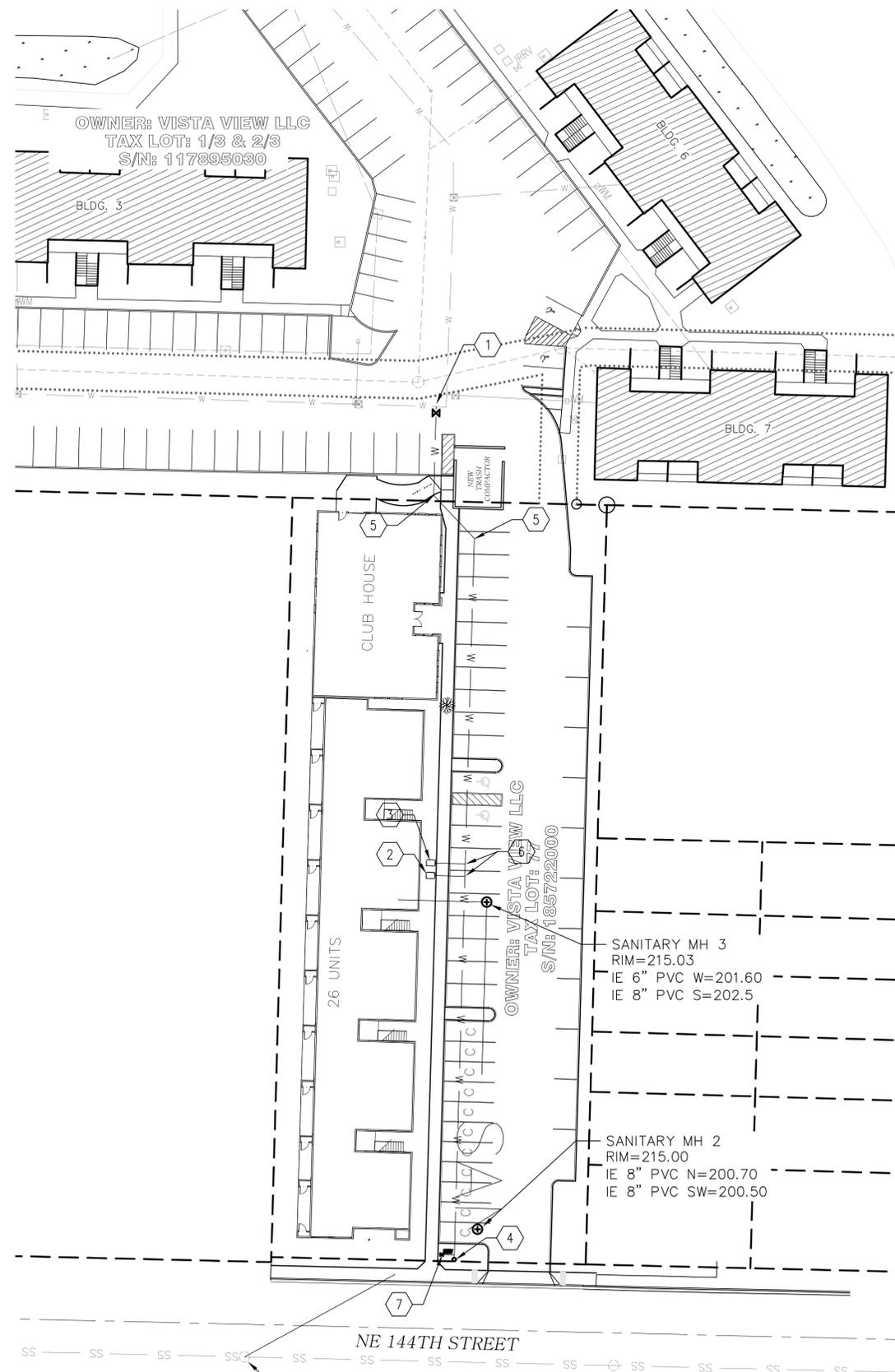
REVISIONS:



PROJECT NO: 15017
DESIGNED BY: PCW
DRAWN BY: JMB
DATE: 5/26/2016

SHEET NO.
C3.0





UTILITY NOTES

- ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF PUD AND CLARK REGIONAL, AND THE CURRENT EDITION OF THE UNIFORM PLUMBING CODE AND THE INTERNATIONAL BUILDING CODE. ALL WORK WITHIN THE PUBLIC R.O.W REQUIRES A PUBLIC WORKS PERMIT.
- THE WORKING DRAWINGS ARE GENERALLY DIAGRAMMATIC. THEY DO NOT SHOW EVERY OFFSET, BEND OR ELBOW REQUIRED FOR INSTALLATION IN THE SPACE PROVIDED. THEY DO NOT SHOW EVERY DIMENSION, COMPONENT PIECE, SECTION, JOINT OR FITTING REQUIRED TO COMPLETE THE PROJECT. ALL LOCATIONS FOR WORK SHALL BE CHECKED AND COORDINATED WITH EXISTING CONDITIONS IN THE FIELD BEFORE BEGINNING CONSTRUCTION. EXISTING UNDERGROUND UTILITIES LAYING WITHIN THE LIMITS OF EXCAVATION SHALL BE VERIFIED AS TO CONDITION, SIZE AND LOCATION BY UNCOVERING, PROVIDING SUCH IS PERMITTED BY LOCAL PUBLIC AUTHORITIES WITH JURISDICTION. BEFORE BEGINNING CONSTRUCTION. CONTRACTOR TO NOTIFY ENGINEER IF THERE ARE ANY DISCREPANCIES.
- PROVIDE CLEANOUTS AS REQUIRED IN THE CURRENT UNIFORM PLUMBING CODE CHAPTER 7, SECTIONS 707 AND 719, AND CHAPTER 11, SECTION 1101.12. NOTE: NOT ALL REQUIRED CLEANOUTS ARE SHOWN ON THE PLANS.
- SEE MECHANICAL DRAWINGS FOR UTILITIES LOCATED WITHIN THE BUILDING AND TO 5' OUTSIDE THE BUILDING.
- ALL DOWNSPOUT LEADERS TO BE 6" AT 2.0% MIN. UNLESS NOTED OTHERWISE.
- VERIFY LOCATION, SIZE AND DEPTH OF EXISTING UTILITIES BY POT HOLE PRIOR TO CONSTRUCTION. NOTIFY ENGINEER OF DISCREPANCIES.
- PROVIDE 2" PVC DRAIN LINE FROM DOMESTIC WATER METER VAULT AND BACKFLOW PREVENTER VAULT TO THE DOUBLE DETECTOR CHECK VALVE (FIRE) VAULT. PROVIDE 1/3 HP SUMP PUMP AT BASE OF FIRE VAULT AND INSTALL 2" PVC DRAIN LINE WITH BACKFLOW VALVE FROM SUMP PUMP TO DAYLIGHT AT NEAREST CURB. FURNISH 3/4 INCH DIAMETER CONDUIT FROM BUILDING ELECTRICAL ROOM TO FIRE VAULT FOR SUMP PUMP ELECTRICAL SERVICE. NOTE: COORDINATE WITH FIRE PROTECTION CONTRACTOR FOR FLOW SENSOR INSTALLATION AND CONDUIT REQUIREMENTS.
- CONTRACTOR TO PROVIDE POWER TO IRRIGATION CONTROLLER. SEE SPECIFICATIONS AND LANDSCAPE PLANS
- SEE BUILDING PLUMBING DRAWINGS FOR PIPING WITHIN THE BUILDING AND UP TO 5' OUTSIDE THE BUILDING, INCLUDING ANY FOUNDATION DRAINAGE PIPING.
- CONTRACTOR TO MAINTAIN MINIMUM 3 FT OF COVER OVER ALL WATER LINE.

RESTRAINED JOINT NOTES

TEST PRESSURE 45 PSI
 DEPTH TO BURY 3 FT
 PIPE MATERIAL PVC
 SAFETY FACTOR: 1.5 TO 2.0
 LENGTH OF RESTRAINT
 ALONG MAIN ON TEES, Lr: 20 FT

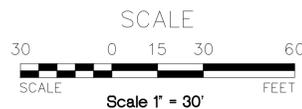
NOTIFY ENGINEER IF DEVIATING FROM ABOVE SPECIFICATIONS.

LENGTH OF PIPE REQUIRING RESTRAINED JOINTS

	8"
11 1/4 BEND	3'
22 1/2 BEND	6'
45 BEND	13'
90 BEND	31'
TEE	1'
DEAD ENDS	70'

PUD RETAINS AUTHORITY TO MODIFY AND/OR ADD JOINT RESTRAINTS AT THE DISCRETION OF THE PUD ENGINEER

- INSTALL
 HOT TAP EXISTING 8" W
 PVC (C-900) WATERMAIN
 (1) 8"x6" SS TAPPING
 SLEEVE AND THRUST BLOCK
 (1) 6" TAPPING GATE VALVE
 MECHANICALLY RESTRAIN ALL JOINTS
- INSTALL
 (1) STANDARD 1-1/2" DOMESTIC WATER SERVICES (TYP)
 (1) 1-1/2" WATER METER
 (1) DOUBLE CHECK VALVE ASSEMBLY (TYP)
- INSTALL
 (1) STANDARD 4" DOMESTIC FIRE WATER SERVICE
 (1) 4" WATER METER
 (1) STATE APPROVED BACKFLOW DEVICE
 FOR FIRE SPRINKLER SYSTEM
- INSTALL
 (1) STANDARD BLOWOFF ASSEMBLY
 (1) PRE-CAST THRUST BLOCK
- INSTALL
 (1) 6" - 45° MJ BEND W/MJ RESTRAINT
 (1) THRUST BLOCK
- INSTALL
 (1) 6" FLG TEE W/ MJ RESTRAINT
 (1) THRUST BLOCK
- INSTALL
 2" IRRIGATION SERVICE
 W/ STATE APPROVED BACKFLOW PREVENTOR



SANITARY MH 1
 RIM=210.08
 IE 8" PVC NE=202.47
 IE 8" PVC E=202.47
 IE 8" PVC W=202.27

SANITARY MH 3
 RIM=215.03
 IE 6" PVC W=201.60
 IE 8" PVC S=202.5

SANITARY MH 2
 RIM=215.00
 IE 8" PVC N=200.70
 IE 8" PVC SW=200.50

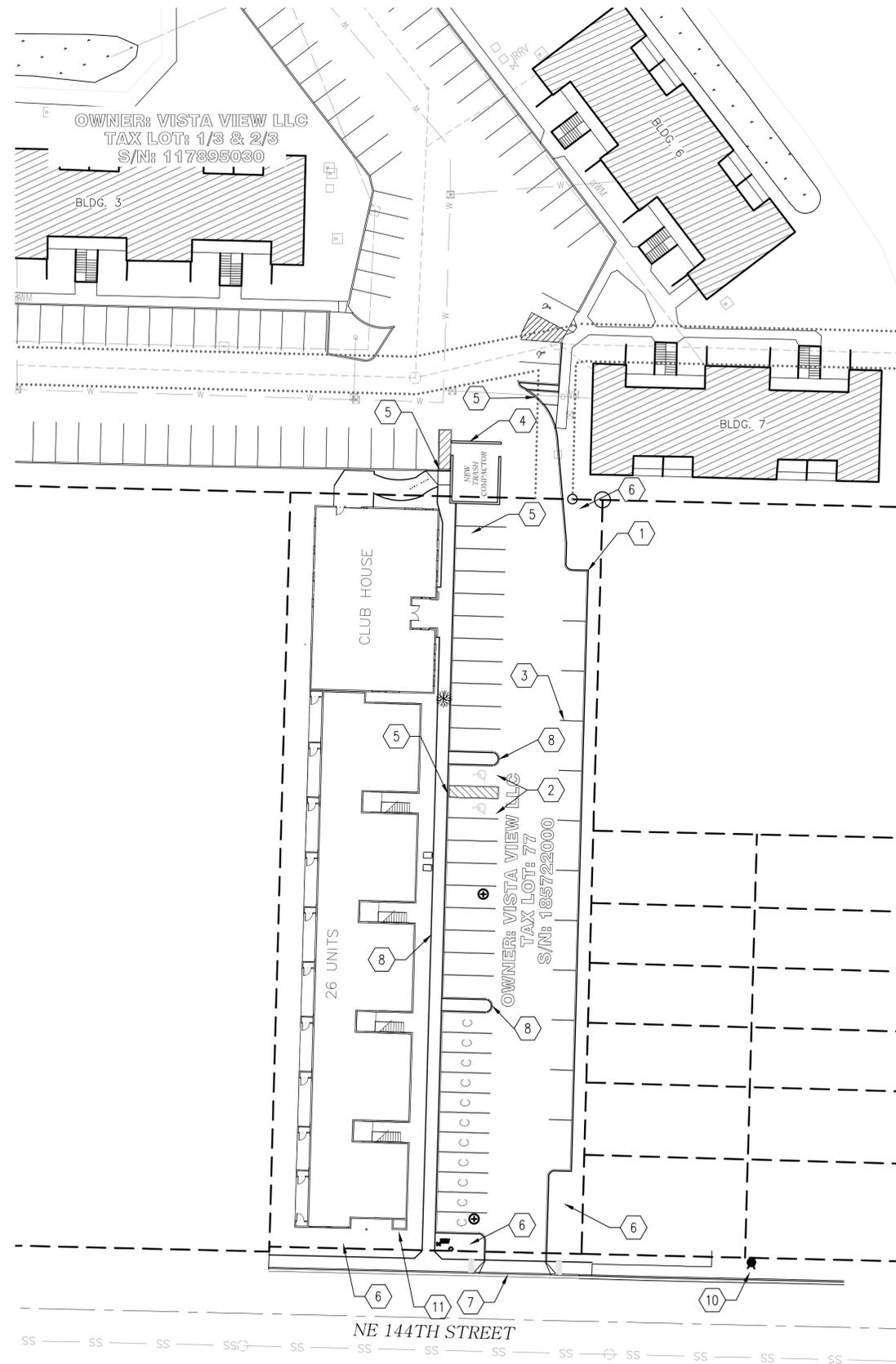


REVISIONS:



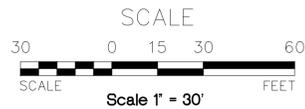
PROJECT NO: 15017
 DESIGNED BY: PCW
 DRAWN BY: JMB
 DATE: 5/1/2016

SHEET NO. C4.0

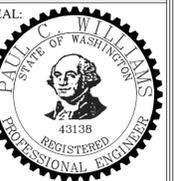


KEYNOTES

1. VERTICAL CURB TYPE E-1 (DETAIL F18 SHEET C8.1)
2. (2) ADA COMPLIANT PARKING STALLS
3. 4" WHITE PARKING STALL STRIPE (TYP.)
4. TRASH ENCLOSURE
5. ADA COMPLAINT CURB RAMP (SHEET C8.1)
6. LANDSCAPE AREA
7. CEMENT CONCRETE APPROACH DETAIL
8. 5' WIDE SIDEWALK (TYP.) (SHEET C8.0)
9. RAIN GARDEN (SHEET C7.0)
10. EXISTING FIRE HYDRANT
11. FIRE SPRINKLER RISER



REVISIONS:



PROJECT NO: 15017
DESIGNED BY: PCW
DRAWN BY: JMB
DATE: 4/25/2016

SHEET NO.
C5.0

STANDARD NOTES FOR EROSION CONTROL PLAN

1. THE CONTRACTOR SHALL INSTALL AND MAINTAIN BMP'S AS SHOWN AND PERFORM ALL ACTIONS NECESSARY TO PREVENT EROSION, AND CONTROL SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. CONTRACTOR SHALL COMPLY WITH CLARK COUNTY CODE CHAPTER 40.385.
2. ALL EROSION CONTROL MEASURES SHALL BE IN-PLACE AND IN WORKING CONDITION PRIOR TO DISTURBING AND EXPOSING ANY SOIL SURFACES (I.E. SILT FENCE, CONSTRUCTION ENTRANCE, SEDIMENTATION BARRIERS, SEDIMENTATION TRAPS).
3. ALL EROSION PREVENTION AND CONTROL BMP'S SHALL BE MAINTAINED AND REPAIRED AS NEEDED TO INSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION. NEEDED REPAIRS SHALL BE MADE AS SOON AS PRACTICABLE. THEY ARE TO REMAIN IN PLACE AND OPERATIONAL DURING ALL PHASES OF CONSTRUCTION. CONSTRUCTION ACTIVITIES SHALL NOT CONTINUE OR RESUME UNTIL REPAIRS TO EROSION CONTROL FACILITIES ARE MADE AND THE FACILITIES ARE FUNCTIONAL. ANY SEDIMENT LEAVING THE SITE OR DISCHARGING TO A SENSITIVE AREA SHALL BE STOPPED AND CONTROLLED IMMEDIATELY. CONTAMINATED AREAS SHALL BE CLEANED AND RESTORED.
4. CLEARING LIMITS AND WORK AREA LIMITS SHALL BE DELINEATED AND MARKED. DO NOT DISTURB MORE AREA THAN NEEDED FOR CONSTRUCTION REQUIREMENTS.
5. ALL SENSITIVE OR CRITICAL AREAS (WETLANDS, STEEP SLOPES, NATURAL WATERWAYS), AND BUFFERS SHALL BE CLEARLY DELINEATED AND CLEARLY MARKED, AND PROTECTED FROM SEDIMENT DEPOSITION.
6. SEDIMENT LADEN RUNOFF SHALL BE PREVENTED FROM ENTERING ALL EXISTING STORM WATER CATCH BASINS AND INLETS AFFECTED BY CONSTRUCTION.
7. NO EXPOSED, BARE SOILS SHALL REMAIN UNSTABILIZED FOR MORE THAN TWO DAYS DURING THE PERIOD OCTOBER 1 THRU APRIL 30 OR FOR MORE THAN SEVEN DAYS DURING THE PERIOD OF MAY 1 THROUGH SEPTEMBER 30. ALL DISTURBED SOIL SURFACES SHALL BE STABILIZED BY A SUITABLE APPLICATION OF "BEST MANAGEMENT PRACTICES".
8. WHERE FEASIBLE, NO MORE THAN 500 FEET OF TRENCH SHALL BE OPEN AT ONE TIME. EXCAVATED MATERIAL SHALL BE PLACED ON THE UP-HILL SIDE OF TRENCHES PROVIDED IT DOES NOT CONFLICT WITH SAFETY REQUIREMENTS.
9. DEWATERING DEVICES SHALL DISCHARGE INTO A SEDIMENT TRAP OR SEDIMENT POND. NO DISCHARGE SHALL BE MADE TO A PAVED STREET OR STORMWATER COLLECTION SYSTEM WITHOUT FIRST REMOVING SEDIMENT.
10. CUT AND FILL SLOPES SHALL BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. EROSION SHALL BE CONTROLLED AND PREVENTED BY SUCH MEASURES AS MATTING, MULCHING, WATER, TACKIFIER, OR CHEMICAL SOIL STABILIZERS. THE CONTRACTOR SHALL MAINTAIN THE DUST CONTROL MEASURES THROUGH DRY WEATHER PERIODS UNTIL ALL DISTURBED AREAS HAVE BEEN STABILIZED. IMMEDIATELY RE-STABILIZE AREAS DISTURBED BY CONTRACTOR'S OPERATIONS OR OTHER ACTIVITIES (WIND, WATER, VALDANISM, ETC.).
11. ANY SOIL OR DEBRIS TRANSPORTED ONTO ROADWAYS AND SIDEWALKS SHALL BE REMOVED. DEPOSITS SHALL BE COMPLETELY REMOVED BY SHOVELING AND/OR SWEEPING. WASHING SHALL NOT BE UTILIZED UNLESS SPECIFICALLY APPROVED IN WRITING BY THE COUNTY.
12. ALL PERMANENT INFILTRATION SYSTEMS SHALL BE ISOLATED AND PROTECTED FROM SEDIMENT LADEN RUNOFF ENTERING TO AVOID RISK OF REDUCING THE ABILITY OF THE SYSTEMS TO INFILTRATE. ISOLATION AND PROTECTION SHALL NOT BE REMOVED UNTIL THE DRAINAGE AREA TRIBUTARY TO THE SYSTEM IS COMPLETELY STABILIZED.
13. ALL CONVEYANCE CHANNELS, BOTH TEMPORARY AND PERMANENT SHALL BE STABILIZED TO PREVENT EROSION OF THE CHANNEL. STABILIZATION SHALL EXTEND TO AREAS AT OUTLETS AND DOWNSTREAM REACHES VULNERABLE TO EROSION RESULTING FROM FLOW DISCHARGING FROM THE CHANNEL.
14. IF BMP'S SHOWN ARE UTILIZED BUT ARE INSUFFICIENT TO PREVENT SEDIMENT FROM REACHING WATER BODIES, ADJACENT PROPERTIES, OR PUBLIC RIGHTS-OF-WAY; ADDITIONAL BMP'S SHALL BE IMPLEMENTED IMMEDIATELY TO PREVENT FURTHER ENCROACHMENT OF SEDIMENT.

NO. _____ REVISIONS _____ DATE _____ BY _____
 CODE REFERENCE CHANGE 02/28/09 PC

SHEET 1 OF 2

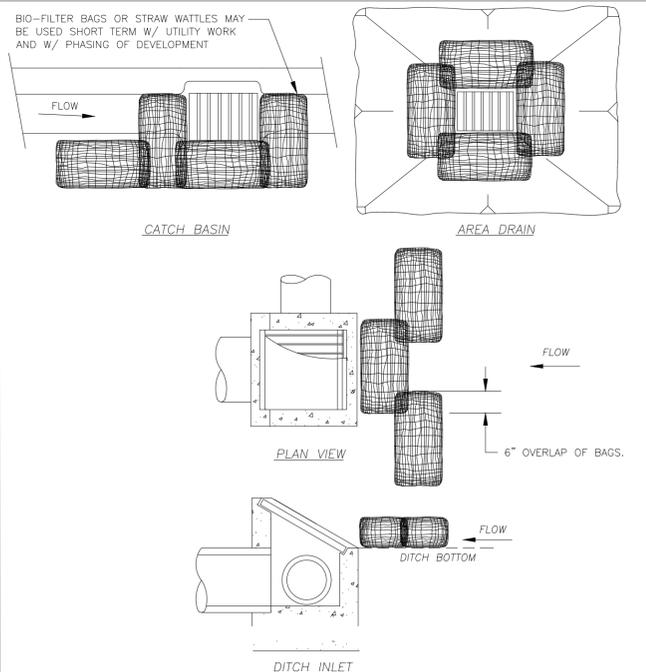
Department of Public Works
CLARK COUNTY WASHINGTON
 proud past, promising future

STANDARD NOTES FOR EROSION CONTROL PLAN

APPROVED
 Peter Capen
 COUNTY ENGINEER

5/23/08

STANDARD
ECN1
 DETAIL
 DESIGNED BY
 DRAWN BY
 DATE 05/23/08



- NOTES:
1. ADDITIONAL MEASURES MUST BE CONSIDERED DEPENDING ON SOIL TYPE.
 2. BIO-FILTER BAGS SHOULD BE STAKED WHERE APPLICABLE USING (2) 1"x2" WOODEN STAKES OR APPROVED EQUAL PER BAG.
 3. STRAW WATTLES MUST BE STABILIZED BY ATTACHING WIRE CLIPS TO THE CATCH BASIN PER MANUFACTURERS SPECIFICATIONS.
 4. INLET PROTECTION MUST BE REGULARLY INSPECTED BY THE EROSION CONTROL INDIVIDUAL TO INSURE PROPER PLACEMENT/FUNCTION AND MAINTENANCE.
 5. SEE INLET PROTECTION NOTES STD. DETAIL E3.

NO. _____ REVISIONS _____ DATE _____ BY _____

Department of Public Works
CLARK COUNTY WASHINGTON
 proud past, promising future

INLET PROTECTION TYPE 4 BIO-FILTER BAGS

APPROVED
 Peter Capen
 COUNTY ENGINEER

5/23/08

STANDARD
E3c
 DETAIL
 DESIGNED BY
 DRAWN BY
 DATE 05/23/08

STANDARD NOTES FOR EROSION CONTROL PLAN (CONTINUED)

15. STABILIZED AREAS SHALL BE PROVIDED FOR EMPLOYEE PARKING AND STORAGE OF CONSTRUCTION MATERIALS. ERODIBLE STOCKPILES OF EARTHEN MATERIALS, SUCH AS TOPSOIL, SILTY AND CLAYEY SOILS; AND LANDSCAPE MATERIALS, SHALL BE COVERED WHEN NOT BEING INCORPORATED IN THE WORK. EROSION CONTROL BMP'S SHALL BE UTILIZED AS NECESSARY TO PREVENT SEDIMENT LADEN RUNOFF FROM LEAVING OR SEDIMENT BEING TRANSPORTED FROM THESE AREAS FROM VEHICLE ACTIVITY.
16. ALL POLLUTANTS OTHER THAN SEDIMENT THAT OCCUR DURING CONSTRUCTION SHALL BE HANDLED AND DISPOSED OF IN A MANNER THAT DOES NOT CAUSE CONTAMINATION OF STORM WATER.
17. THE CONTRACTOR SHALL KEEP AN INSPECTION LOG OF THE CONDITION OF THE EROSION CONTROL FACILITIES. EROSION CONTROL FACILITIES SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RAINFALL. THE INSPECTION LOG SHALL BE KEPT AT THE PROJECT SITE AT A DESIGNATED LOCATION AND SHALL BE AVAILABLE FOR REVIEW BY THE COUNTY. AN INDIVIDUAL THAT HAS SUCCESSFULLY COMPLETED THE COUNTY'S EROSION CONTROL CERTIFICATION COURSE SHALL PERFORM INSPECTIONS AND MAINTAIN THE LOG.
18. ALL TEMPORARY BMP'S SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED. TRAPPED SEDIMENT SHALL BE DEPOSITED AND STABILIZED ON SITE. AREAS DISTURBED RESULTING FROM REMOVAL SHALL BE PERMANENTLY STABILIZED.
19. CONSTRUCTION SHALL NOT BE CONSIDERED COMPLETE AND ACCEPTABLE UNTIL ALL DISTURBED SOIL SURFACES HAVE BEEN PROTECTED FROM EROSION WITH PERMANENT LANDSCAPING, COVERING WITH IMPERVIOUS SURFACES, RESTORED TO ORIGINAL UNDISTURBED CONDITION OR PERMANENTLY STABILIZED.
20. VEGETATED STABILIZATION AND LANDSCAPING SHALL BE FERTILIZED, WATERED AND MAINTAINED TO INSURE THAT GROWTH OF VEGETATION IS ESTABLISHED AND SUSTAINED.
21. DURING DRY WEATHER CONSTRUCTION PERIODS THE CONTRACTOR SHALL PROVIDE PROJECT-SPECIFIC DUST CONTROL MEASURES THAT MAY INCLUDE: SEEDING, MULCHING, MATTING, WATER, TACKIFIER, OR CHEMICAL SOIL STABILIZERS. THE CONTRACTOR SHALL MAINTAIN THE DUST CONTROL MEASURES THROUGH DRY WEATHER PERIODS UNTIL ALL DISTURBED AREAS HAVE BEEN STABILIZED. IMMEDIATELY RE-STABILIZE AREAS DISTURBED BY CONTRACTOR'S OPERATIONS OR OTHER ACTIVITIES (WIND, WATER, VALDANISM, ETC.).
22. ENTRY INTO THE CONSTRUCTION SITE SHALL BE RESTRICTED TO A SINGLE APPROVED ENTRANCE AS SHOWN ON THE PLAN.
23. MAINTENANCE AND REPAIR OF HEAVY EQUIPMENT AND VEHICLES WHICH INVOLVE POTENTIAL CONTAMINANTS (OIL, SOLVENTS, HYDRAULIC FLUID, ETC.) MUST BE CONDUCTED IN A MANNER WHICH PREVENTS CONTAMINATION OF SOILS, SURFACE WATER AND GROUND WATER. TARPS, DRIP PANS, OR OTHER APPROPRIATE MEASURES SHALL BE USED AS NECESSARY.
24. STRIPPING, TOPSOIL, AND UNSUITABLE MATERIAL STOCKPILES SHALL BE HYDROSEEDED WITH "REGREEN WHEAT X WHEAT GRASS HYBRID" BY HOBBS AND HOBKINS (OR APPROVED EQUAL). MAINTENANCE OF STOCKPILE AREAS AND REAPPLICATION OF HYDROSEED COVERING SHALL BE REQUIRED IF BARE SOIL IS PRESENT. DURING WINTER AND WET WEATHER CONDITIONS, STOCKPILES SHALL BE COVERED WITH PLASTIC SHEETING PER DETAIL E-16.
25. SIGNIFICANT VARIATION AND DEGREE OF EROSION CONTROL EFFORT WILL BE DICTATED BY WEATHER CONDITIONS. THE DEVELOPER AND CONTRACTOR SHOULD BE PREPARED TO PROVIDE EXTRA EROSION CONTROL PROVISIONS AND EFFORT DURING WINTER AND WET WEATHER CONDITIONS BEYOND THAT NORMALLY REQUIRED DURING SUMMER AND DRY WEATHER CONDITIONS. FINE GRAINED AND UNCONSOLIDATED SOILS ON SLOPING SITES MAY BECOME UNSTABLE WHEN SUBJECT TO EXCESSIVE MOISTURE.

NO. _____ REVISIONS _____ DATE _____ BY _____
 CODE REFERENCE CHANGE 02/28/09 PC

SHEET 2 OF 2

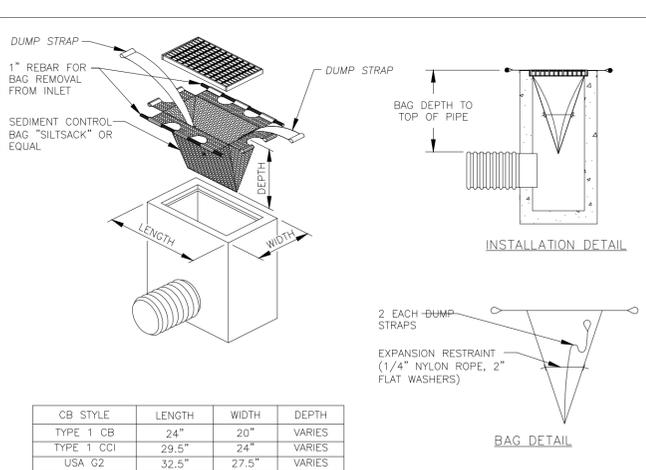
Department of Public Works
CLARK COUNTY WASHINGTON
 proud past, promising future

STANDARD NOTES FOR EROSION CONTROL PLAN

APPROVED
 Peter Capen
 COUNTY ENGINEER

5/23/08

STANDARD
ECN2
 DETAIL
 DESIGNED BY
 DRAWN BY
 DATE 05/23/08



INLET SEDIMENT CONTROL DEVICE - SILT SACK

- NOTES:
1. THE DIMENSION CHART ABOVE IS FOR STANDARD CATCH BASINS AND INLETS ONLY. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE CORRECT SIZE DEVICE FOR EACH INLET.
 2. FOR NON-STANDARD CATCH BASINS AND INLETS, THE CONTRACTOR SHALL MEASURE DIMENSIONS IN THE FIELD AND ORDER THE APPROPRIATE SIZE(S).
 3. THE INLET SEDIMENT CONTROL DEVICE SHALL BE OF HIGH FLOW DESIGN (200 GAL/MIN/FT), AS PER THE MANUFACTURER'S SPECS.
 4. THE SEDIMENT CONTROL DEVICE SHALL BE INSPECTED DAILY BY THE CONTRACTOR AND MAINTAINED A MINIMUM ONCE PER MONTH OR WITHIN THE 48 HOURS FOLLOWING A STORM EVENT. FILTER SHALL BE CLEANED IN A MANNER WHICH ENSURES THAT ALL SEDIMENT REMAINS ON SITE.
 5. SUBSTITUTION OF A SHEET OF FILTER FABRIC PLACED OVER THE OPENING OF THE INLET IS NOT APPROVED.
 6. RECESSED CURB INLET CATCH BASINS MUST BE BLOCKED WHEN USING FILTER FABRIC INLET SACKS, SIZE OF FILTER INLET SACK TO BE DETERMINED BY MANUFACTURER.
 7. THE FILTER SHALL BE REPLACED OR CLEANED WHEN THE BAG BECOMES HALF FULL.
 8. SEE INLET PROTECTION NOTES STD. DETAIL E3.

NO. _____ REVISIONS _____ DATE _____ BY _____

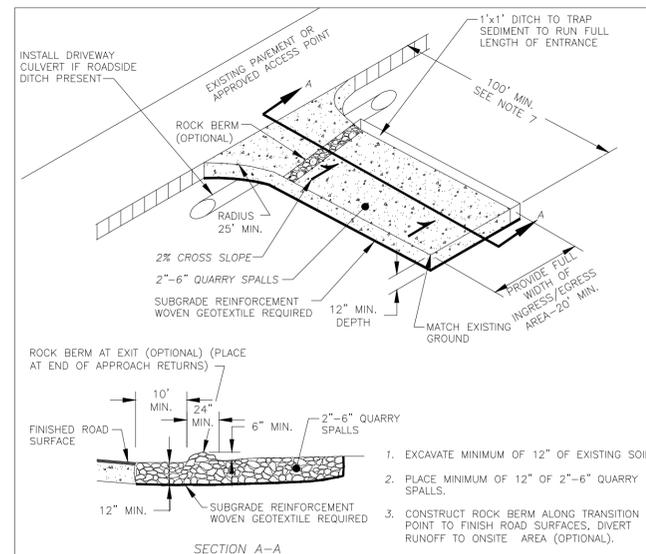
Department of Public Works
CLARK COUNTY WASHINGTON
 proud past, promising future

INLET PROTECTION TYPE 5 SILT SACK

APPROVED
 Peter Capen
 COUNTY ENGINEER

5/23/08

STANDARD
E3d
 DETAIL
 DESIGNED BY
 DRAWN BY
 DATE 05/23/08



- NOTES:
1. FOR DEVELOPMENT PROJECTS REVIEWED BY ENGINEERING SERVICES, NOT FOR USE WITH SINGLE FAMILY OR DUPLEX RESIDENTIAL BUILDING PERMITS. SEE BUILDING DEPT. FOR GRAVEL CONSTRUCTION ENTRANCE PLAN.
 2. INSTALL WOVEN GEOTEXTILE FABRIC TO PREVENT SUB-SOIL PUMPING.
 3. VEHICLE WASH-DOWN AREA, IF REQUIRED, IS TO BE INSTALLED AND USED TO REMOVE SEDIMENT FROM VEHICLES THAT ARE ABOUT TO ENTER AN ESTABLISHED ROAD.
 4. WASH-DOWN AREA TO BE MADE UP OF CLEAN 2"-6" QUARRY SPALLS, 12" DEEP (MIN) OVER WOVEN GEOTEXTILE FABRIC. WASH-DOWN AREA TO BE FULL WIDTH OF ENTRANCE AND 50' LENGTH (MIN.), AND 100' IF EXPOSED SOIL IS OVER 5 ACRES.
 5. AT TIME OF PRECONSTRUCTION MEETING, THE COUNTY INSPECTOR MAY REQUIRE THE ENTRANCE TO BE PAVED TO THE EDGE OF THE RIGHT-OF-WAY PRIOR TO THE INSTALLATION OF A WASH-DOWN ENTRANCE TO AVOID DAMAGE TO THE EXISTING ROADWAY.
 6. THE RESPONSIBLE EROSION CONTROL INDIVIDUAL IS TO ENSURE THAT ALL VEHICLES USE THIS ENTRANCE AND ARE TO BE INSPECTED AND CLEANED OF SOILS BEFORE LEAVING PROJECT, AND THAT THE ENTRANCE IS TO BE KEPT CLEAN AT ALL TIMES.
 7. THE 100' MINIMUM LENGTH OF ENTRANCE SHALL BE REDUCED TO THE MAXIMUM PRACTICABLE SIZE WHEN THE SIZE OR CONFIGURATION OF THE SITE DOES NOT ALLOW THE FULL LENGTH (100').

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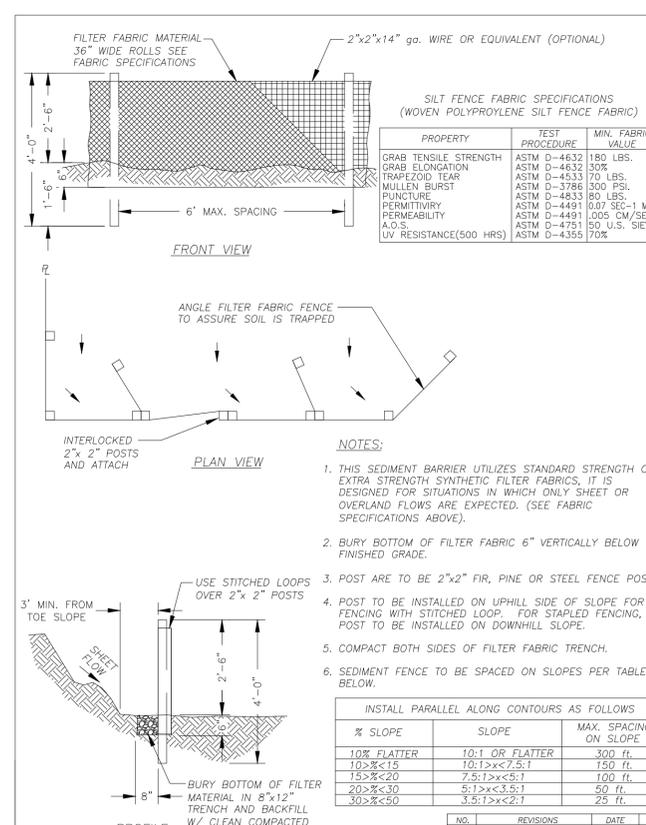
STANDARD CONSTRUCTION ENTRANCE

Department of Public Works
CLARK COUNTY WASHINGTON
 proud past, promising future

APPROVED
 Peter Capen
 COUNTY ENGINEER

5/23/08

STANDARD
E1
 DETAIL
 DESIGNED BY
 DRAWN BY
 DATE 05/23/08



NO. _____ REVISIONS _____ DATE _____ BY _____

Department of Public Works
CLARK COUNTY WASHINGTON
 proud past, promising future

SILT FENCE

APPROVED
 Peter Capen
 COUNTY ENGINEER

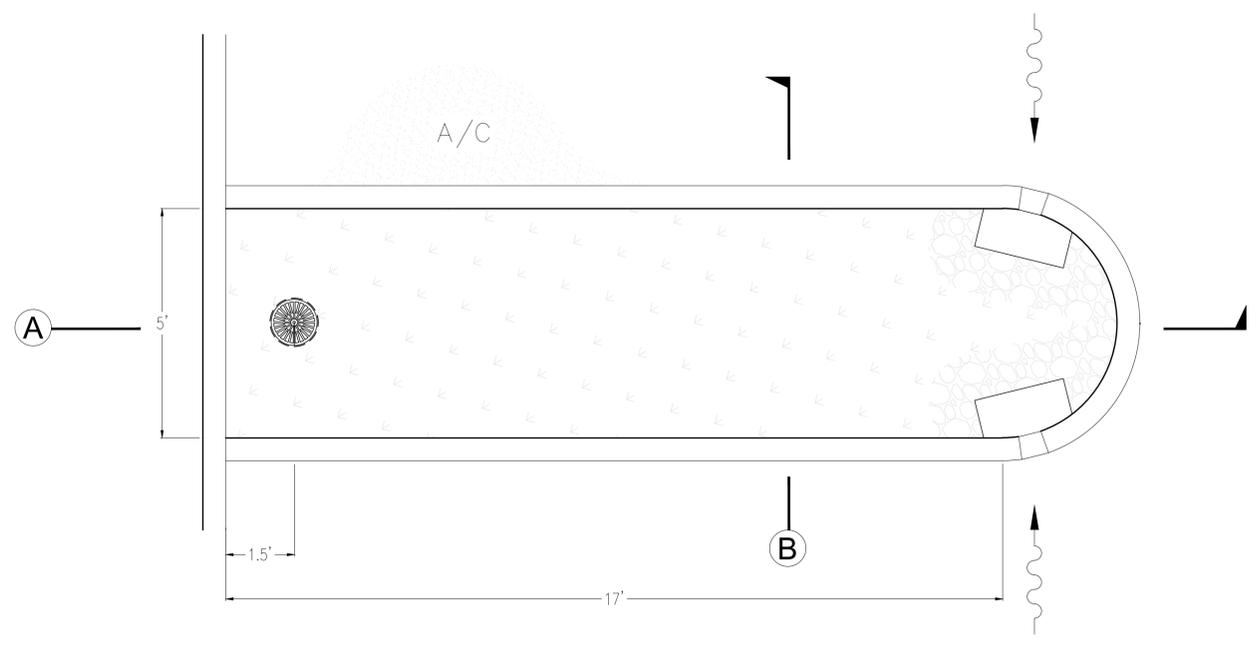
5/23/08

STANDARD
E4
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 DESIGNED BY
 DRAWN BY
 DATE 05/23/08

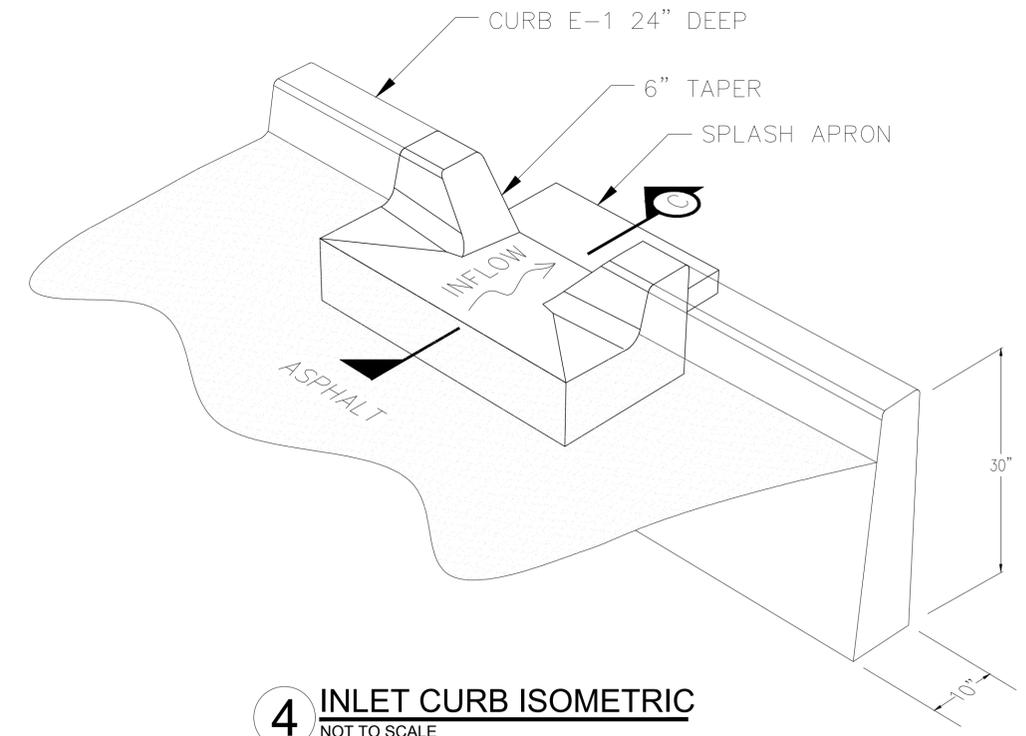
REVISIONS:

SEAL: PAUL C. WILLIAMS REGISTERED PROFESSIONAL ENGINEER 43138

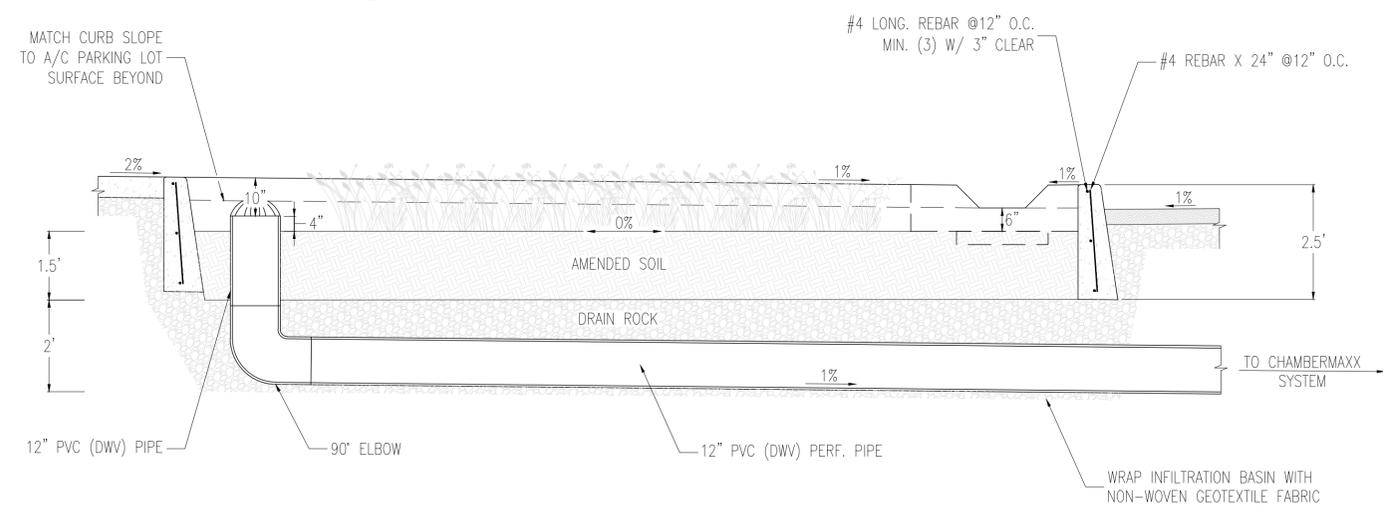
PROJECT NO: 15017
 DESIGNED BY: JMW
 DRAWN BY: JMB
 DATE: 4/25/2016



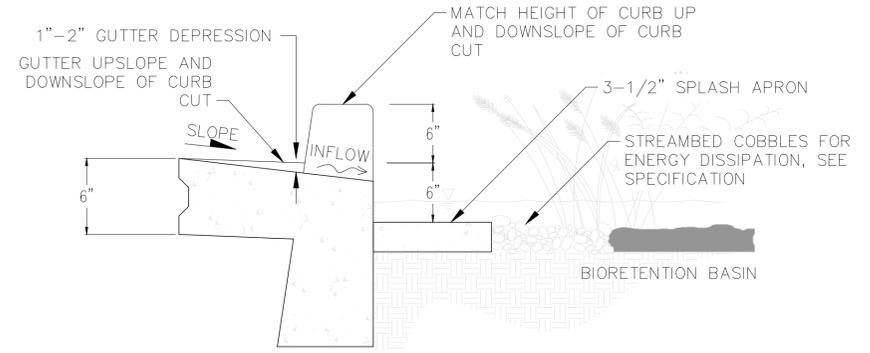
1 RAIN GARDENS - PLAN
SCALE 1" = 2"



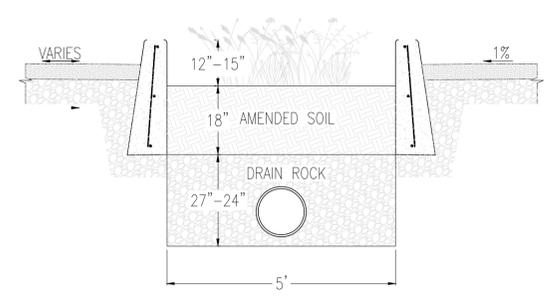
4 INLET CURB ISOMETRIC
NOT TO SCALE



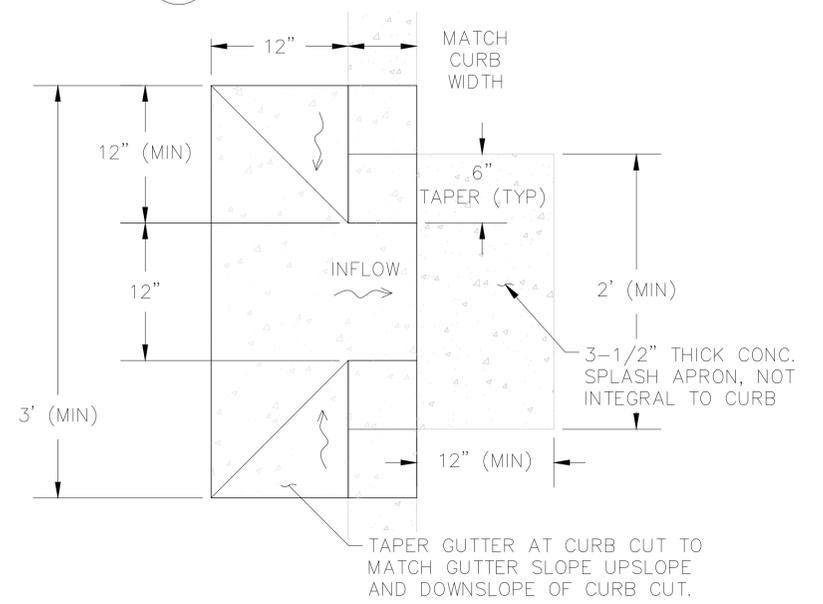
2 RAIN GARDENS - SECTION A-A
NOT TO SCALE



5 INLET CURB SECTION C-C
NOT TO SCALE



3 RAIN GARDENS - SECTION B-B
NOT TO SCALE



6 INLET CURB - PLAN
NOT TO SCALE

STANDARD CONSTRUCTION NOTES

- All sanitary sewer construction will conform to the current adopted Construction Specifications of the District.
- All work in Clark County right-of-way will conform to the requirements of the Clark County utility permit, City of Vancouver, City of Battle Ground, applicable railroad permits, WSDOT Franchise, or District requirements, whichever are more restrictive.
- Contractor shall contact the NW Utility Notification Center at 1-800-424-5555 at least two (2) working days before but not more than (10) ten working days before the start of construction of the work and shall comply with State requirements for utility locating.
- All survey monumentation shall be protected from damage unless otherwise permitted by Department of Natural Resources.
- A preconstruction conference shall be held prior to the start of construction of the project.
- Gravity sanitary sewer pipe materials for lines six (6) inches inside diameter and larger shall be:
 - AWWA C-900 or C-905 SDR 18 PVC pipe at depths of cover from three (3) feet to less than five (5) feet in a vehicle-traveled area; or
 - PVC pipe at depths of cover of five (5.0) feet to depths of cover of twenty (20.0) feet; or
 - AWWA C-900 or C-905 or Class 50 ductile iron pipe at depths of cover greater than 20.0'.
- Gravity sanitary sewer pipe materials for lines four (4) inches inside diameter and smaller shall be:
 - AWWA C-900 or C-905 PVC pipe at depths of cover from three (3) feet to less than five (5) feet in vehicle traveled areas; or
 - Schedule 40 ABS or Schedule 40 Solvent Weld Joint PVC at depths of cover from three (3) feet to less than five (5) feet in non-vehicle traveled areas; or
 - Schedule 40 ABS or Schedule 40 Solvent Joint PVC at depths of cover of five (5) feet or more.
- Connections for side sewers (laterals) shall be:
 - Wyes for new sanitary sewers.
 - District Installed Taps for Existing Lines Note: A "Request for Tap" form must be completed by the contractor and a two (2) working day notice be given to the District to allow the tap to be scheduled.
 - The ends of side sewers (laterals) shall be:
 - Back-filled only after District inspection and approval and the Design Engineer or surveyor has obtained record drawing information.
 - Marked with a 2"x4"x10' wrapped with #14 gauge wire not connected to the toning wire and at a 90-degree angle from the end of the lateral. The marker will extend at least three (3) feet above the finished ground surface. Two (2) feet of each end of the 2"x4"x10' shall be painted green. If the 2"x4" is not ten (10) feet long, the contractor shall mark the actual length on the 2"x4" within six inches of the top and on both sides.
 - All manhole joints shall be externally sealed with NPC External-Seal (eight (8) inch nominal width), or approved equal.
 - Manholes shall not have edges of manhole casting and cover within three (3) feet of the curb gutter. Where determined by the District, inflow dishes shall be installed in manholes.
- All testing shall be in accordance with the District's Construction Specifications.
 - At the preconstruction conference, the contractor must state if they intend to use an approved private television inspection subcontractor or the District.
 - The Design Engineer or surveyor will submit pre-paving record drawings prior to testing.
- All existing septic tanks shall be decommissioned in accordance with Clark County Public Health and District requirements.
- Record Drawings shall be submitted to the District prior to final acceptance.
- All lateral lines shall be installed with toning wire. Toning wire shall be installed on main lines where shown on the plans.
- Owners engineer shall verify cleanout invert elevations prior to backfilling.

CLARK REGIONAL WASTEWATER DISTRICT DESIGN

STANDARD CONSTRUCTION NOTES

STANDARD DRAWING

2

APPROVED: APR 2010

GRAVITY PIPE INSTALLATION

NOTES:

- SEE STANDARD SPECIFICATION SECTION 2-03.3(1)E FOR CONTROL DENSITY FILL WHERE REQUIRED BY UTILITY PERMIT OR WHERE SHOWN ON THE PLANS AND SPECIFIED BACKFILL WHERE IT IS NOT.
- SEE STANDARD SPECIFICATION SECTION 7-08.3(3) FOR BACKFILL ABOVE THE PIPE ZONE AND COMPACTION (95-PERCENT MAXIMUM DENSITY). MATERIAL FOR TRENCH BACKFILL SHALL BE GRAVEL BORROW PER SEC 9-03.14(1) UNLESS OTHERWISE APPROVED.
- SEE STANDARD SPECIFICATION SECTION 9-03.12(3) FOR GRAVEL BACKFILL FOR PIPE ZONE BEDDING. FOR DEPTHS GREATER THAN 13 FEET, SEE STANDARD SPECIFICATION SECTION 9-03.9(3) CRUSHED SURFACING BASE COURSE. SEE STANDARD SPECIFICATION SECTION 7-08.3(1)C FOR COMPACTION (90-PERCENT MAXIMUM DENSITY).
- SEE STANDARD SPECIFICATION SECTION 7-08.3(1)A. MATERIAL SHALL BE CS3C PIPE ZONE BEDDING, BALLAST OR QUARRY SPALLS AS FURTHER DESCRIBED IN DIVISION 9 OF THE STANDARD SPECIFICATIONS. MATERIAL SHALL BE IN ACCORDANCE WITH 7-08.3(1)A, 9-03.9(1) OR 9-13.6.
- SEE STANDARD SPECIFICATION SECTION 2-09.4 FOR MEASUREMENT OF TRENCH WIDTH.
- SEE STANDARD SPECIFICATION SECTION 2-03.14(D) FOR COMPACTION CONTROL TEST FOR ALL BACKFILL MATERIAL.
- SEE STANDARD SPECIFICATION SECTION 9-30.7 FOR TONING WIRE AND SPLICES, WHERE REQUIRED.
- TRENCH RESTORATION PER UTILITY / RIGHT OF WAY PERMIT.

CLARK REGIONAL WASTEWATER DISTRICT GRAVITY

GRAVITY PIPE INSTALLATION

STANDARD DRAWING

3

APPROVED: APR 2010

MANHOLE TYPE 1

MANHOLE DIMENSION TABLE

DIAMETER	BASE THICKNESS	MAXIMUM KNOCKOUT SIZE	MINIMUM DISTANCE BETWEEN KNOCKOUTS	BASE REINFORCING STEEL SQ. IN/FT EACH DIRECTION	INTEGRAL BASE
18"	6"	36"	8"	0.15	

CLARK REGIONAL WASTEWATER DISTRICT GRAVITY

MANHOLE TYPE 1

STANDARD DRAWING

4

APPROVED: APR 2010

MANHOLE LATERAL CONNECTION

NOTES:

- SEE STANDARD DRAWING #4 FOR ADDITIONAL DETAILS.
- MAXIMUM OF FIVE (5) 4" RESIDENTIAL LATERALS PER MANHOLE
- 0.3" MINIMUM DROP FROM LATERAL INVERT TO MANHOLE OUTLET.
- ALL PENETRATIONS SHALL BE CORED AND BOOTED PER SPEC.
- ENSURE CHANNELS ARE STRUCK SMOOTH
- ALL MANHOLES WITH THREE (3) OR MORE LATERALS SHALL BE VACUUM TESTED
- INTERNAL MANHOLE SEAL MAY BE REQUIRED.

CLARK REGIONAL WASTEWATER DISTRICT GRAVITY

MANHOLE LATERAL CONNECTION

STANDARD DRAWING

8

APPROVED: APR 2010

RESIDENTIAL SIDE SEWER

NOTES:

- IF CLEANOUT IS IN DRIVEWAY USE SIOUX CHIEF MFG. CO. INC. TOUPEE PLUS ADJUSTABLE CLEANOUT RRS1-341 OR APPROVED EQUAL. SEE STANDARD DRAWING #17.
- WHEN A CLEANOUT IS LOCATED IN A DRIVEWAY, PERMIT HOLDER IS REQUIRED TO CONTACT THE DISTRICT FOR A FINAL INSPECTION OF THE DRIVEWAY CLEANOUT PRIOR TO OCCUPANCY OF THE HOUSE. (SEE STANDARD DRAWING #17)
- CLEANOUT REQUIRED FOR EVERY 135° CHANGE IN DIRECTION AND / OR EVERY 70 FEET. NO 90° BENDS ALLOWED.
- PIPE MATERIAL SHALL MATCH EXISTING LATERAL.
- PROVIDE 24" HORIZONTAL AND 18" VERTICAL SEPARATION FROM WATER, GAS, POWER, PHONE, OR CABLE SERVICE LINES.

CLARK REGIONAL WASTEWATER DISTRICT GRAVITY

RESIDENTIAL SIDE SEWER

STANDARD DRAWING

15

APPROVED: APR 2010

CLAY DAMS

INSTALLED IN ACCORDANCE WITH STANDARD SPECIFICATION SEC. 7-08.3(3)

CLARK REGIONAL WASTEWATER DISTRICT GRAVITY

CLAY DAMS

STANDARD DRAWING

19

APPROVED: APR 2010

Engineering Northwest

CRWWD STORM SEWER DETAILS FOR:
VISTA VIEW APARTMENTS

A. Site in Clark County, Washington
C:\Users\Celena\Documents\Dropbox\ENGINEERING\NORTHWEST\IMAGES\CNE_2.png

CALL 48 HOURS BEFORE YOU DIG

1-800-424-5555
"It's the Law"

NORTHWEST UTILITIES NOTIFICATION CENTER

REVISIONS:

SEAL: PAUL C. WALLACE, P.E., REGISTERED PROFESSIONAL ENGINEER, STATE OF WASHINGTON, 43138

PROJECT NO: 15017
DESIGNED BY: PCW
DRAWN BY: JMB
DATE: 4/25/2016

SHEET NO. C7.2

SHEET 11 OF 15



DATE	MARK	REVISION

WATER MAIN INSTALLATION STANDARD DETAILS
CLARK PUBLIC UTILITIES

DESIGNED	XXX	DATE	8/21/2013
DRAWN	XXX	CHECKED	XXX
SCALE	N/TS	SHEET	1 OF 2

GENERAL NOTES:

- ALL CONSTRUCTION MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE CLARK PUBLIC UTILITIES (CPU) WATER CONSTRUCTION SPECIFICATIONS, STANDARD DETAILS AND THE MOST CURRENT EDITION OF THE "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" PUBLISHED BY WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (WSDOT).
- A CPU WATER UTILITY INSPECTOR SHALL BE AT THE JOB SITE DURING CONSTRUCTION OF ALL WATER FACILITIES. CONTACT 360-992-8019 TWO WORKING DAYS PRIOR TO COMMENCING WORK.
- WORK WITHIN COUNTY RIGHT-OF-WAY SHALL CONFORM WITH CLARK COUNTY PUBLIC WORKS UTILITY PERMIT REQUIREMENTS AND DETAILS. WORK WITHIN STATE RIGHT-OF-WAY SHALL CONFORM TO WSDOT UTILITY PERMIT REQUIREMENTS AND DETAILS.
- VALVE SHALL BE 2" SQUARE OPERATING NUT OR AS SPECIFIED ON PLANS.
- THE LOCATION OF THE UTILITIES SHALL BE VERIFIED IN ADVANCE TO ALLOW FOR ALIGNMENT ADJUSTMENTS. CALL UTILITY LOCATES TWO (2) WORKING DAYS PRIOR TO CONSTRUCTION (1-800-424-5555).
- ONLY TAPPING COMPANIES APPROVED BY CLARK PUBLIC UTILITIES SHALL BE USED TO MAKE ALL TAPS.
- ACTUAL ROAD ALIGNMENTS MAY VARY FROM RIGHT-OF-WAY INDICATED. THE CONTRACTOR SHALL VERIFY THE PROPOSED PIPE ALIGNMENT AND REPORT DIFFERENCES TO THE CPU INSPECTOR. ALL ALIGNMENT CHANGES MUST BE APPROVED BY THE CPU INSPECTOR PRIOR TO INSTALLATION.
- DRIVEWAYS DISTURBED BY CONSTRUCTION SHALL BE RESTORED BY THE CONTRACTOR TO "LIKE" OR BETTER CONDITION. REFER TO PLAN FOR APPROXIMATE LOCATIONS AND TYPES.
- CONTRACTOR SHALL VERIFY EXISTING UTILITY CULVERTS, CONDUITS AND LINE LOCATION PRIOR TO CONSTRUCTION. DUE TO FIELD CONDITIONS, THE CONTRACTOR SHALL FIELD ADJUST THE VERTICAL AND HORIZONTAL ALIGNMENT OF THE WATER MAIN TO CLEAR THE UTILITY IN CONFLICT AND PROVIDE THE MIN. 3.0 FEET OF COVER AS APPROVED BY THE CPU INSPECTOR. ALL CULVERTS WHICH ARE DISTURBED BY CONSTRUCTION SHALL BE RESTORED BY THE CONTRACTOR IN ACCORDANCE WITH THE SPECIFICATIONS.
- FENCES DISTURBED BY CONSTRUCTION SHALL BE RESTORED BY THE CONTRACTOR TO "LIKE" OR BETTER CONDITION.
- CONTRACTOR SHALL VERIFY EXISTING SIGN AND MAILBOX LOCATIONS PRIOR TO CONSTRUCTION. SIGNS & MAILBOXES THAT ARE DISTURBED BY CONSTRUCTION SHALL BE RELOCATED BACK FROM EDGE OF PAVEMENT, 1.0 FEET CLEAR OF WATER MAIN. ANY SIGNS OR MAILBOXES DAMAGED SHALL BE REPAIRED OR REPLACED AS PER THE SPECIFICATIONS.
- THE LOCATIONS OF ALL EXISTING UTILITIES ARE FOR INFORMATIONAL PURPOSES ONLY. MANY LOCATIONS ARE PER SCHEMATIC RECORD DRAWINGS. THE CURRENT AND EXACT LOCATIONS OF FACILITIES MUST BE VERIFIED PRIOR TO CONSTRUCTION. THE CONTRACTOR PERFORMING THE WORK SHALL COMPLY WITH THE PROVISIONS OF FACILITIES AT LEAST 48 BUSINESS DAY HOURS PRIOR TO EXCAVATION. CALL 1-800-553-4344 FOR UTILITY LOCATE SERVICE.
- THE WATER FACILITIES SHALL BECOME THE PROPERTY OF CLARK PUBLIC UTILITIES AFTER A SATISFACTORY BACTERIA AND PRESSURE TEST HAVE BEEN PERFORMED BY THE UTILITY. ALL MATERIALS AND WORKMANSHIP ARE SUBJECT TO A ONE YEAR WARRANTY, COMMENCING AT ACCEPTANCE OF FINAL TESTING. REPLACEMENT AND/OR REPAIRS OF DEFECTIVE MATERIALS SHALL BE THE DEVELOPERS/OWNERS RESPONSIBILITY.
- WHEN ASBESTOS CONCRETE PIPE IS ENCOUNTERED, THE CONTRACTOR SHALL SUPPLY WORKERS WHO ARE CERTIFIED TO WORK ON ASBESTOS CONCRETE PIPE.
- THE CONTRACTOR SHALL TRANSFER AND/OR ABANDON EXISTING SERVICES AS DIRECTED BY THE INSPECTOR.
- THE INSTALLED WATER MAIN SHALL BE PRESSURE TESTED AT A MINIMUM OF 150 PSI OR 1.5 TIMES THE WORKING PRESSURE, WHICHEVER IS GREATER. THE TEST WILL BE PERFORMED BY THE CLARK PUBLIC UTILITIES INSPECTOR. THE CONTRACTOR SHALL PROVIDE ASSISTANCE AS NEEDED.
- THE INSTALLED WATER MAIN SHALL BE THOROUGHLY DISINFECTED AND FLUSHED IN ACCORDANCE WITH THE CLARK PUBLIC UTILITIES STANDARDS AND REQUIREMENTS. ONLY CLARK PUBLIC UTILITIES EMPLOYEES ARE PERMITTED TO FILL AND FLUSH THE WATER MAIN. THE CONTRACTOR SHALL PROVIDE ASSISTANCE AS NEEDED. IN AREAS WHERE THE DE-CHLORINATION OF FLUSHED WATER IS NOT POSSIBLE, THE CONTRACTOR SHALL PROVIDE WATER TRUCKS TO FLUSH INTO.
- PRIOR TO ACCEPTING THE SYSTEM OR ALLOWING THE MAIN TO BE PUT IN SERVICE, A WATER SAMPLE SHALL BE TAKEN BY THE CLARK PUBLIC UTILITIES INSPECTOR AND A TEST PERFORMED BY AN ACCREDITED LAB TO INSURE NO HAZARD EXISTS.

GENERAL INSTALLATION NOTES:

- INSTALL WATER MAIN WITH 3.0 FEET OF MINIMUM COVER UNLESS OTHERWISE NOTED. DEPTH MAY INCREASE AT UTILITY AND CULVERT CROSSINGS.
 - LOCATE WIRE SHALL BE COATED (BLUE INSULATED), NO. 14 GA. SOFT DRAWN SOLID COPPER. USE WATERPROOF CONNECTORS AT ALL WIRE SPLICES.
 - DRY CALCIUM HYPO CHLORIDE IN TABLET FORM, FAST DISSOLVING, WITH 65% MIN. AVAILABLE CHLORINE SHALL BE USED TO CHLORINATE ALL NEW MAINS. THE DOSAGE RATE SHALL BE A MINIMUM OF 25mg/L. THE NUMBER OF 5-g TABLETS TO BE APPLIED PER 20 FOOT LENGTH OF PIPE SHALL BE AS FOLLOWS:
- | PIPE SIZE | NUMBER OF TABLETS |
|-----------|-------------------|
| 4" | 1 |
| 6" | 1 |
| 8" | 2 |
| 10" | 3 |
| 12" | 4 |
- WHENEVER A PIPE IS CUT AND NOT RECONNECTED, THE CUT ENDS SHALL BE CAPPED OR PLUGGED, AS DIRECTED BY THE CPU INSPECTOR.
 - ALL WATER SERVICES, BLOW-OFF ASSEMBLIES, AIR RELEASE VALVES, FIRE HYDRANT ASSEMBLIES, VALVE BOXES AND THRUST BLOCKING SHALL BE INSTALLED PER THE STANDARD SPECIFICATIONS AND DETAILS.
 - WATER MAINS BEING INSTALLED NEAR TELEPHONE/CABLE COMMUNICATIONS SHALL HAVE A MINIMUM 12" HORIZONTAL AND 6" VERTICAL CLEARANCE.
 - WATER MAINS BEING INSTALLED NEAR UNDERGROUND POWERLINES SHALL HAVE A MINIMUM 48" (MAYBE REDUCED TO 24" FOR SHORT DISTANCES) HORIZONTAL AND 6" VERTICAL CLEARANCE.
 - REQUIRED SEPARATION BETWEEN WATER LINES AND SANITARY SEWER LINES SHALL BE AS FOLLOWS:
HORIZONTAL SEPARATIONS (PARALLEL)
A MINIMUM SEPARATION OF TEN (10) FEET (MEASURED EDGE TO EDGE) BETWEEN SANITARY SEWER LINES AND WATER LINES SHALL BE MAINTAINED WHENEVER POSSIBLE. WHEN CONDITIONS PREVENT THE MINIMUM TEN (10) FOOT HORIZONTAL SEPARATION THE ENGINEER SHALL BE NOTIFIED.
VERTICAL SEPARATION (PERPENDICULAR)
WATER LINES CROSSING SANITARY SEWER LINES SHALL BE LAID ABOVE THE SEWER LINES TO PROVIDE A SEPARATION OF AT LEAST 18" BETWEEN THE INVERT OF THE WATER PIPE AND THE CROWN OF THE SANITARY SEWER PIPE. A LENGTH OF WATER PIPE SHALL BE CENTERED AT THE POINT OF CROSSING AND SHALL BE THE LONGEST STANDARD LENGTH AVAILABLE FROM THE MANUFACTURER.
THE CONTRACTOR SHALL USE CONSTRUCTION METHODS THAT PROTECT THE PIPE INTERIORS, FITTINGS AND VALVES AGAINST CONTAMINATION.
 - ANY PIPE, FITTINGS OR VALVES THAT CANNOT BE DISINFECTED WITH THE MAIN LINE BY CHLORINE FOR 24 HOURS SHALL HAVE THE INTERIORS SWABBED WITH A 1% HYPOCHLORITE SOLUTION BEFORE INSTALLATION.
 - CONCRETE THRUST BLOCKS SHALL BE CONSTRUCTED AT ALL TEES, BENDS, BLOW-OFFS, DEAD ENDS AND WHERE INDICATED ON THE PLANS.
 - ALL MJ FITTINGS SHALL BE RESTRAINED USING MJ MECHANICAL RESTRAINT FOLLOWER GLANDS.
 - 6" WATER PIPE LEADING TO FIRE HYDRANTS SHALL BE DIP AND SHALL BE ONE CONTINUOUS PIECE OF PIPE. IF THE RUN IS LONGER THAN ONE PIECE OF PIPE, THEN ALL PIPE JOINTS SHALL BE MECHANICALLY RESTRAINED WITH "FIELD-LOK" GASKETS OR OTHER CPU APPROVED RESTRAINTS.

EROSION CONTROL NOTES:

- CONSTRUCTION EROSION CONTROL SHALL BE AS REQUIRED AND CONFORMING WITH THE CLARK COUNTY DRAINAGE AND EROSION CONTROL ORDINANCE. REFER TO THE CLARK COUNTY DEPARTMENT OF PUBLIC WORKS STANDARD EROSION CONTROL DETAILS.
- ALL EXPOSED SOILS SHALL BE STABILIZED, IN A TIMELY MANNER, BY THE APPLICATION OF BEST MANAGEMENT PRACTICES, INCLUDING BUT NOT LIMITED TO SOO, SEED, OR OTHER VEGETATION, PLASTIC COVERINGS, MULCHING, OR APPLICATION OF CRUSHED AGGREGATE ON THOSE AREAS TO BE PAVED.
- WHEN EXCAVATION OCCURS IN ROADSIDE DITCHES, EXCAVATE AND KEY INTO DITCH ONE BIOFILTER BAG CHECK DAM PER 100' OF DITCH, OR WHERE NOTED ON THE PLANS. REMOVE SILT WHEN IT IS EVEN WITH THE TOP OF THE CHECK DAM. REPLACE OR ADD BIOFILTER BAGS AS NECESSARY TO PROPERLY FILTER THE STORM WATER.
- INSTALL BIOFILTER BAGS (POLYESTER FABRIC PILLION (ASTM-D191 OR EQUAL) FILLED W/ 15-16 LBS. OF WOOD CHIPS) AT EACH INLET. REMOVE SILT AND ADD BIOFILTER BAGS AS NECESSARY TO PROPERLY FILTER STORM WATER.
- IF SEDIMENT IS TRANSPORTED ONTO THE ROAD SURFACE, THE ROADS SHALL BE CLEANED THOROUGHLY AT THE END OF THE WORKDAY, OR MORE IF NECESSARY. SIGNIFICANT SOIL DEPOSITS SHALL BE REMOVED FROM THE ROAD BY SHOVELING OR SWEEPING.
- THE LENGTH OF THE TRENCH OPEN AT ONE TIME SHALL BE MINIMIZED AND WHERE CONSISTENT WITH SAFETY AND SPACE CONSIDERATION, EXCAVATED MATERIALS SHALL BE PLACED ON THE UPHILL SIDE OF THE TRENCH.

FITTING & VALVE SPECIFICATIONS:

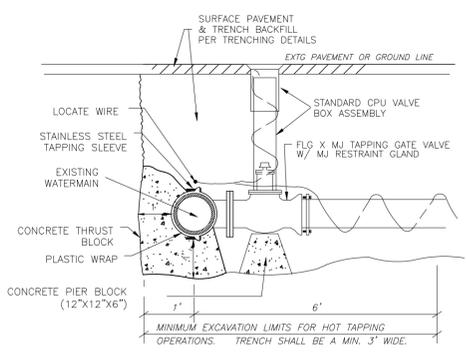
- PIPE FITTINGS SHALL BE GRAY-IRON OR DUCTILE IRON AND SHALL CONFORM TO AWWA STANDARD C110. DUCTILE IRON (COMPACT) FITTINGS CONFORMING TO AWWA STANDARD C153 MAY BE SUBSTITUTED IN LIEU OF AWWA C110 FITTINGS FOR FITTING SIZES 3-INCHES THROUGH 24-INCHES IN DIAMETER. FITTINGS SHALL BE MECHANICAL JOINT OR FLANGED AS REQUIRED AND SHOWN ON THE PLANS.
- DUCTILE IRON AND GREY IRON MECHANICAL JOINT FITTINGS SHALL BE PRESSURE RATED FOR 350 PSI. DUCTILE IRON AND GREY IRON FLANGED JOINT FITTINGS SHALL BE PRESSURE RATED FOR 250 PSI.
- FITTINGS SHALL BE MORTAR LINED AND SEAL COATED.
- BELOW GROUND USE FLANGE ADAPTERS - THE FLANGE ADAPTER TO CONNECT PLAIN END PVC PIPE OR DIP TO FLANGED FITTINGS SHALL BE A DUCTILE IRON FITTING CONFORMING TO ANSI/AWWA C153/A21.53. FITTING SHALL BE MECHANICAL JOINT ON ONE END AND FLANGED ON THE OPPOSITE END.
- DUCTILE IRON AND GREY IRON SOLID SLEEVES SHALL BE OF THE LONG BODY DESIGN AND BOTH ENDS MECHANICAL JOINT.
- GASKETS FOR FLANGED JOINTS SHALL BE FULL FACED, RED RUBBER, AND 1/8" THICK.
- MECHANICAL JOINT GASKETS SHALL BE STANDARD STYRENE BUTADIENE RUBBER (SBR) GASKETS
- BOLTS AND NUTS SHALL BE CARBON STEEL AND SHALL CONFORM TO THE REQUIREMENTS OF ASTM A307 OR ASTM A193 GRADE B7 WITH ASTM A194 GRADE 2H HEAVY HEX NUTS.
- GATE VALVES (4" AND LARGER) - GATE VALVES FOR BURIED SERVICE SHALL BE THE RESILIENT-SEAT TYPE, WITH AN IRON BODY, NON-RISING STEM, BOLTED BONNET, LEFT OPENING AND SHALL CONFORM TO AWWA STANDARD C509 AND C515. THE WEDGE SHALL BE TOTALLY ENCAPSULATED WITH RUBBER. ALL GATE VALVES SHALL BE RATED AT 250 PSI FOR AWWA SERVICE. THE INTERIOR AND EXTERIOR SHALL BE FUSION-BONDED EPOXY AND ALL COATINGS AND/OR LININGS SHALL CONFORM TO AWWA STANDARD C550 AND SHALL BE SUITABLE FOR POTABLE WATER SERVICE AND NSF CERTIFIED.
- BUTTERFLY VALVES - BUTTERFLY VALVES SHALL BE SHORT BODY CLASS 250 VALVES CONFORMING TO THE REQUIREMENTS OF AWWA STANDARD C504. BUTTERFLY VALVES SHALL BE RUBBER SEATED AND TIGHT CLOSING. VALVE BODIES SHALL BE HIGH STRENGTH CAST IRON OR HIGH STRENGTH DUCTILE IRON. VALVE INTERIOR AND EXTERIOR SURFACES SHALL BE COATED WITH EPOXY IN ACCORDANCE WITH AWWA C504 AND SHALL BE SUITABLE FOR POTABLE WATER SERVICE AND NSF 61 CERTIFIED.

EXISTING WATER SERVICES:

- THE CONTRACTOR SHALL TRANSFER, MOVE AND/OR ABANDON EXISTING WATER SERVICES AS DIRECTED BY THE CLARK PUBLIC UTILITIES INSPECTOR.
- EXISTING WATER SERVICES TO BE ABANDONED SHALL BE EXCAVATED TO THE CORP. STOP AT THE WATER MAIN AND THE CORP STOP SHALL BE CLOSED. THE METER BOX SHALL BE REMOVED AND THE WATER SERVICE LINE CAN BE ABANDONED IN PLACE. THE EXISTING METER SHALL BE RETURNED TO CLARK PUBLIC UTILITIES WATER DEPT. ROAD REPAIR SHALL BE AS REQUIRED BY THE CLARK COUNTY RIGHT OF WAY PERMIT REQUIREMENTS.
 - WHEN AN EXISTING WATER SERVICE IS TO BE MOVED, THE CONTRACTOR SHALL EXPOSE A PORTION OF THE EXISTING WATER SERVICE SO THAT THE CLARK PUBLIC UTILITIES INSPECTOR CAN EVALUATE THE MATERIAL SIZE AND CONDITION OF THE EXISTING WATER SERVICE LINE.
- THE INSPECTOR WILL DETERMINE WHETHER THE WATER SERVICE LINE CAN BE EXTENDED OR SHORTENED. IF THE INSPECTOR DETERMINES THE EXISTING WATER SERVICE LINE IS SUBSTANDARD, THEN A NEW POLYETHYLENE (PE) SERVICE LINE SHALL BE INSTALLED FROM THE WATER MAIN (MINIMUM SIZE 1" DIA). ALL EXISTING WATER SERVICE LINES THAT ARE LESS THAN 1" DIAMETER SHALL BE CONSIDERED SUBSTANDARD AND SHALL BE REPLACED WITH A NEW 1", 1-1/2", OR 2" WATER SERVICE LINE PER CLARK PUBLIC UTILITIES STANDARDS.

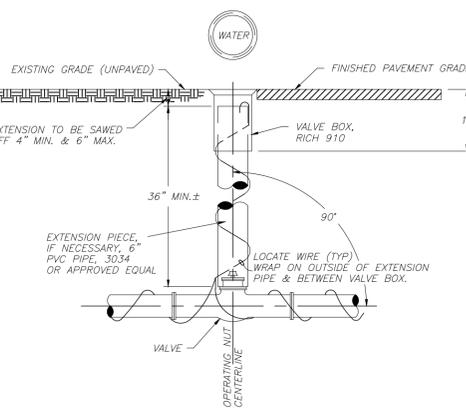
MAIN LINE PIPE MATERIAL:

- UNLESS OTHERWISE STATED ON THE PLAN, ALL MAIN LINE PIPE SHALL BE EITHER DUCTILE IRON PIPE (DIP) OR POLYVINYL CHLORIDE PIPE (PVC).
- DUCTILE IRON PIPE SHALL MEET THE FOLLOWING REQUIREMENTS:
 - PIPE.
 - DUCTILE IRON PIPE SHALL CONFORM TO ANSI A21.51 OR AWWA C151. - USE PUSH-ON JOINTS EXCEPT WHERE OTHER JOINT TYPES ARE NOTED ON THE CONTRACT DRAWINGS. ALL DUCTILE IRON PIPE SHALL BE GAUGED FOR DIP 12" DIAMETER AND SMALLER. UNLESS SPECIFICALLY NOTED ON THE CONTRACT DRAWINGS, 3"-12" PIPE SHALL BE PRESSURE CLASS 350. PIPE SIZES GREATER THAN 12" DIAMETER SHALL BE THICKNESS CLASS 52, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
 - POLYVINYL CHLORIDE (PVC) PRESSURE PIPE (4"-30"). PROVIDE UN-PLASTICIZED PVC PLASTIC PIPE WITH INTEGRAL BELL AND SPIGOT JOINTS. PIPE SHALL BE SUITABLE FOR POTABLE WATER SERVICE. PVC PIPE SHALL MEET THE FOLLOWING REQUIREMENTS:
 - PIPE.
 - LARGE DIAMETER PIPE (14"-30"). PIPE SHALL MEET THE REQUIREMENTS OF AWWA C905. PROVIDE PIPE MEETING THE REQUIREMENTS OF DR 18, UNLESS OTHERWISE NOTED ON THE DRAWING. USE PUSH-ON JOINTS EXCEPT WHERE OTHER JOINT TYPES ARE NOTED ON THE CONTRACT DRAWINGS.
 - SMALL DIAMETER PIPE (4"-12"). PIPE SHALL MEET THE REQUIREMENTS OF AWWA C900. PROVIDE PIPE MEETING THE REQUIREMENTS OF DR 18, UNLESS OTHERWISE NOTED ON THE DRAWINGS. USE PUSH-ON JOINTS EXCEPT WHERE OTHER JOINT TYPES ARE NOTED ON THE CONTRACT DRAWINGS.

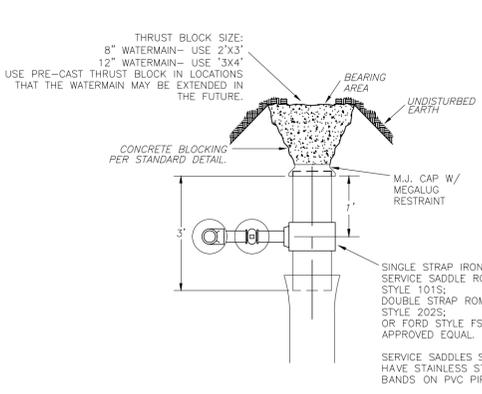


- NOTES**
- LAYOUT AND TAP LOCATION SHALL BE APPROVED BY THE CPU INSPECTOR PRIOR TO EXCAVATING. CONTACT THE CPU INSPECTOR 2 DAYS IN ADVANCE PRIOR TO SCHEDULING THE HOT TAP.
 - HOT TAPS MAY ONLY BE DONE BY A CPU APPROVED TAPPING CONTRACTOR.
 - THE CPU INSPECTOR SHALL BE AT THE WORKSITE DURING TAPPING OPERATIONS.
 - THRUST BLOCK SHALL BE POURED AGAINST FIRM UNDISTURBED SOIL. USE PLASTIC OR OTHER PROTECTIVE MATERIAL BETWEEN PIPE/FITTINGS AND THRUST BLOCK.
 - TRENCH EXCAVATIONS OVER 4' WILL REQUIRE SHORING OR OTHER MEASURES CONSISTANT WITH APPLICABLE LOCAL, STATE OR FEDERAL SAFETY CODES.

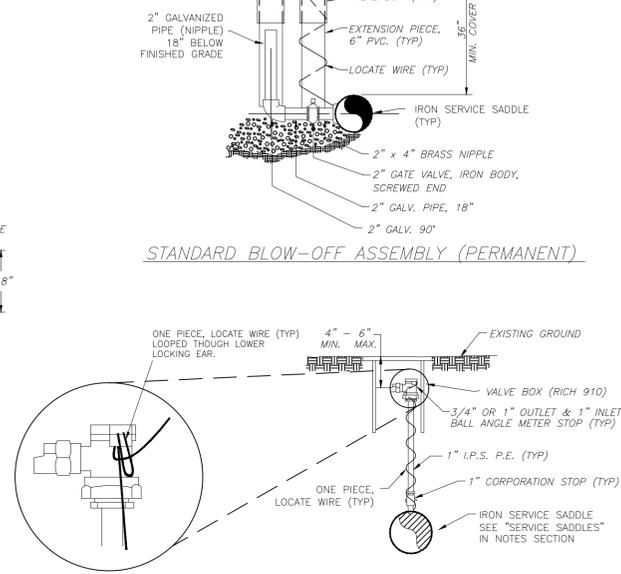
STANDARD HOT TAP



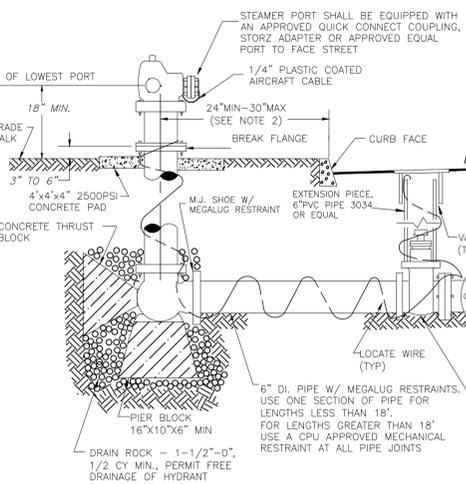
STANDARD VALVE BOX ASSEMBLY



STANDARD BLOW-OFF ASSEMBLY (PERMANENT)



STANDARD MANUAL AIR RELEASE VALVE



- FIRE HYDRANT NOTES:**
- FIRE HYDRANT INSTALLATIONS SHALL BE INSPECTED PRIOR TO BACKFILLING.
 - WHERE HYDRANTS ARE SET BEHIND SIDEWALK, DISTANCE FROM BACK OF SIDEWALK TO HYDRANT C/L SHALL BE 18" MIN., 24" MAX.
 - FIRE HYDRANTS SHALL BE SHOP PAINTED PRIOR TO INSTALLATION W/STANDARD A.W.W.A. GLOSS B, YELLOW

STANDARD FIRE HYDRANT ASSEMBLY

APPROVED RESTRAINTS

WATEROUS	WB67-90 AND/OR -250
MUELLER	CENTURION
CLOW	MEDALLION
M&H	929
KENNEDY	K 81 D



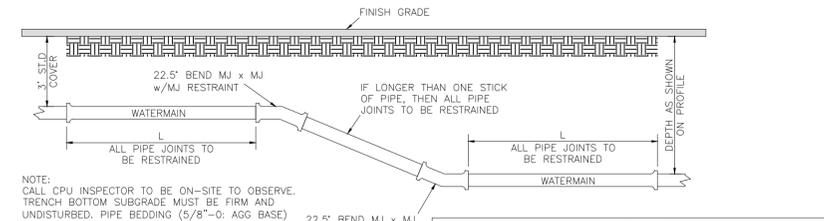
CALL 48 HOURS BEFORE YOU DIG
1-800-424-5555
"It's the Law"
NORTHWEST UTILITIES NOTIFICATION CENTER



REVISION

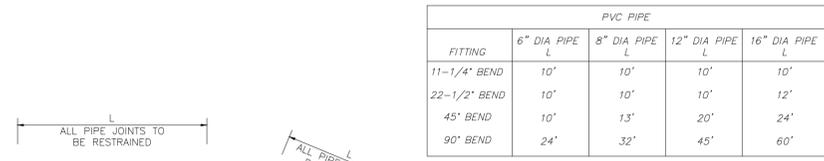
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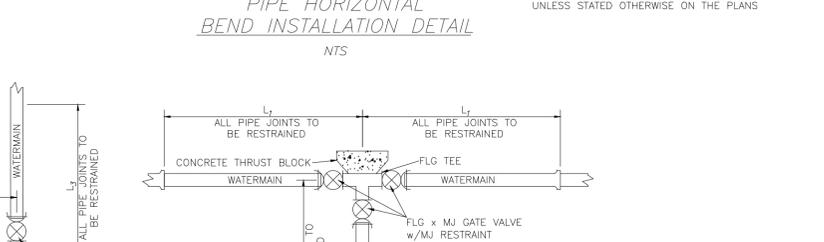
PVC & DIP (WITHOUT POLY BAG ENCASEMENT)				
FITTING	6" DIA PIPE L	8" DIA PIPE L	12" DIA PIPE L	16" DIA PIPE L
11-1/4' BEND	10'	10'	12'	14'
22-1/2' BEND	12'	15'	21'	27'

NOTE: THESE ARE THE MINIMUM PIPE RESTRAINT LENGTHS UNLESS STATED OTHERWISE ON THE PLANS



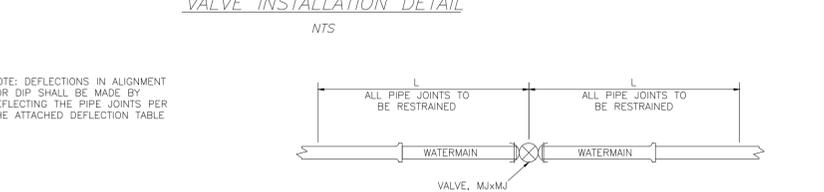
PVC PIPE (WITHOUT POLY BAG ENCASEMENT)				
FITTING	6" DIA PIPE L	8" DIA PIPE L	12" DIA PIPE L	16" DIA PIPE L
11-1/4' BEND	10'	10'	10'	10'
22-1/2' BEND	10'	10'	10'	10'
45' BEND	10'	13'	20'	24'
90' BEND	24'	32'	45'	60'

NOTE: THESE ARE THE MINIMUM PIPE RESTRAINT LENGTHS UNLESS STATED OTHERWISE ON THE PLANS



PVC PIPE				DIP PIPE (WITHOUT POLY BAG ENCASEMENT)			
PIPE SIZE	L1	L2	L3	PIPE SIZE	L1	L2	L3
6"	12'	12'	12'	6"	10'	10'	10'
8"	15'	15'	15'	8"	14'	14'	14'
12"	20'	20'	20'	12"	19'	19'	19'
16"	20'	52'	52'	16"	20'	34'	34'

NOTE: THESE ARE THE MINIMUM PIPE RESTRAINT LENGTHS UNLESS STATED OTHERWISE ON THE PLANS



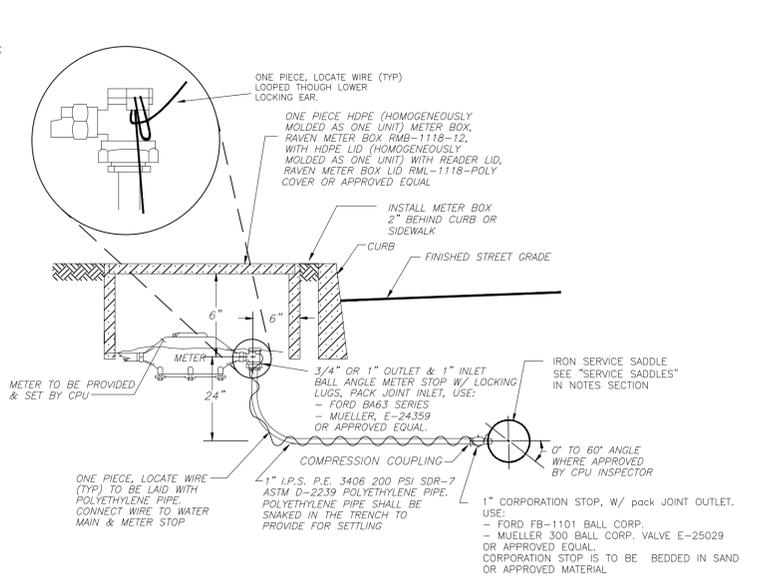
PVC PIPE			DIP PIPE (WITHOUT POLY BAG ENCASEMENT)		
PIPE SIZE	L1	L2	PIPE SIZE	L1	L2
6"	60'	30'	6"	40'	20'
8"	80'	40'	8"	50'	25'
12"	110'	55'	12"	70'	35'
16"	140'	70'	16"	90'	45'

L1: REQUIRED LENGTH WHEN PIPE JOINT RESTRAINT IS ONLY EFFECTIVE IN TENSION (SUCH AS FIELD-LOCK GASKETS OR OTHER SIMILAR RESTRAINT SYSTEMS)

L2: REQUIRED LENGTH WHEN PIPE JOINT RESTRAINT IS ONLY EFFECTIVE IN BOTH TENSION AND COMPRESSION (SUCH AS A MJ SLEEVE WITH MJ RESTRAINT OR A PROPRIETARY INTEGRAL BELL & SPIGOT RESTRAINT SYSTEM)



NOTE: DEFLECTIONS IN ALIGNMENT FOR PVC PIPE SHALL BE MADE BY DEFLECTING THE PIPE JOINTS PER THE ATTACHED DEFLECTION TABLE



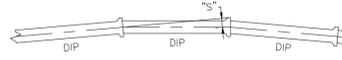
- WATER SERVICE & MANUAL AIR RELEASE NOTES:**
- NO CONNECTIONS WILL BE ALLOWED TO AN EXISTING SERVICE PRIOR TO AN APPROVED PURITY TEST. PURITY TEST SHALL PRECEDE PRESSURE TEST.
 - STUB SERVICES SHALL BE PRESSURE TESTED WITH THE MAIN LINE AND BE CAPABLE OF WITHSTANDING THE MAINS TEST PRESSURE.
 - ALL COMPRESSION FITTINGS TO HAVE STAINLESS STEEL INSERTS.

STANDARD 3/4" & 1" WATER SERVICE

SERVICE SADDLES:

- PROVIDE IRON SERVICE SADDLES WITH NEOPRENE GASKETS CEMENTED IN PLACE AND I.P.S. TAP AS SPECIFIED ON THE CONTRACT DRAWINGS. SADDLES SHALL BE SPECIFICALLY DESIGNED FOR THE TYPE OF PIPE TO WHICH THEY ARE BEING INSTALLED. SERVICE SADDLES ON PVC PIPE SHALL HAVE STAINLESS STEEL BANDS.
- SADDLES FOR 1" AND 2" SERVICE LINES ON WATER MAINS 8" AND SMALLER SHALL BE "ROMAC 1015" OR MUELLER DR15 OR APPROVED EQUAL.
 - SADDLES FOR 1" AND 2" SERVICE LINES ON WATER MAINS 10" AND LARGER SHALL BE "ROMAC 2025" OR MUELLER DR25 OR APPROVED EQUAL.

ALLOWABLE DIP JOINT DEFLECTION			
PIPE SIZE	ALLOWABLE DEFLECTION ANGLE	ALLOWABLE OFFSET "S"	
		PIPE L=18'	PIPE L=20'
6"	3"	11"	12"
8"	3"	11"	12"
12"	3"	11"	12"



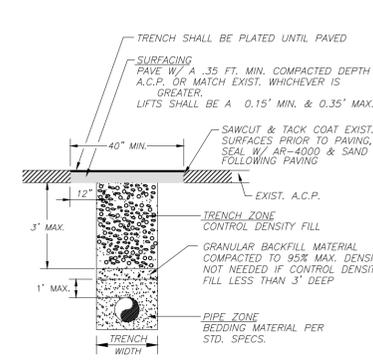
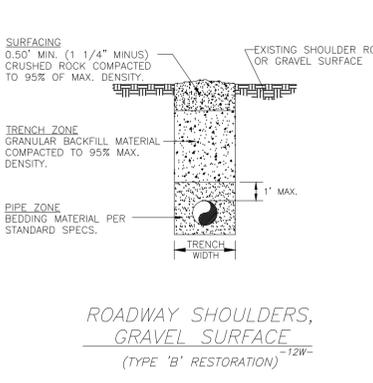
DUCTILE PIPE DEFLECTION DETAIL NTS

ALLOWABLE PVC PIPE BENDING		
PIPE SIZE	ALLOWABLE MINIMUM BENDING RADIUS	ALLOWABLE OFFSET "S"
6"	200'	12"
8"	250'	9.5"
12"	350'	7"

NO BENDING OF PVC PIPE ALLOWED FOR PIPE LARGER THAN 12" DIAMETER

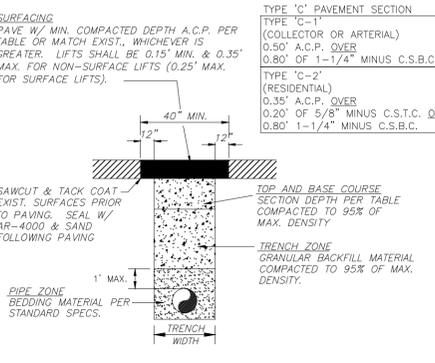
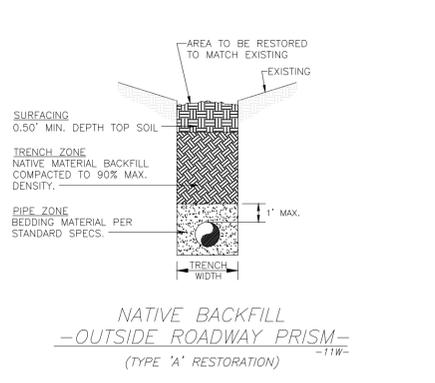


NOTE: DEFLECTIONS IN ALIGNMENT FOR PVC PIPE SHALL BE MADE BY DEFLECTING THE PIPE JOINTS PER THE ATTACHED DEFLECTION TABLE

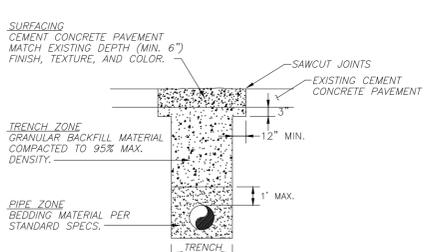


CONTROL DENSITY FILL - A.C.P. (TYPE 'D' RESTORATION)

- TRENCHING NOTES:**
- SEE CLARK COUNTY OR WSDOT UTILITY PERMIT, WHICHEVER IS APPLICABLE, FOR ADDITIONAL TRENCH BACKFILL AND SURFACING REQUIREMENTS.
 - NATIVE MATERIALS MAY BE SUBSTITUTED FOR IMPORTED GRANULAR MATERIAL PROVIDING IT IS PRE-APPROVED BY THE COUNTY ENGINEER OR AUTHORIZED REPRESENTATIVE.
 - TRENCH EXCAVATION, BEDDING, AND BACKFILL FOR WATER MAINS SHALL BE IN ACCORDANCE WITH SECTION 7-10 OF THE MOST CURRENT STANDARD SPECIFICATIONS. BED PIPE PER SECTION 7-10.3(5) OF THE STANDARD SPECIFICATIONS.
 - IN THE TRENCH ZONE, USE METHOD C COMPACTION PER SECTION 2-03.3(14).

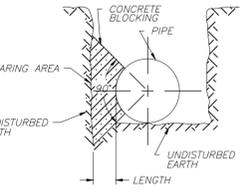


ASPHALT TRENCH (TYPE 'C-1' & 'C-2' RESTORATION)



CEMENT CONCRETE PAVEMENT (TYPE 'E' RESTORATION)

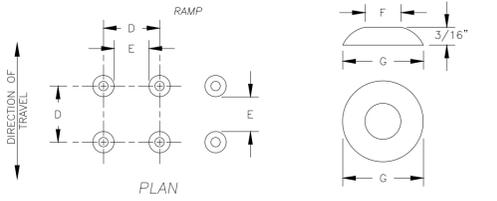
PIPE SIZE	HORIZ. FITTINGS (BENDS)	BEARING AREA (SF)	MINIMUM BLOKING SIZE (FT)	VOL. OF BLOKING (CF)	MINIMUM DEFLECTING LENGTH (FT-IN)
4"	TEE	1.2	1.0' x 1.0'	0.3	0'-6"
	90°	1.7	1.5' x 1.5'	0.6	0'-6"
	22-1/2°	0.5	1.0' x 1.0'	0.3	0'-6"
6"	TEE	2.4	1.5' x 1.5'	0.6	0'-6"
	90°	3.4	2.0' x 2.0'	1.4	0'-8"
	45°	1.9	1.5' x 1.5'	0.6	0'-6"
8"	TEE	4.0	2.0' x 2.0'	1.5	0'-8"
	90°	5.6	2.5' x 2.5'	2.8	0'-10"
	45°	3.1	2.0' x 2.0'	1.5	0'-8"
10"	TEE	6.2	2.5' x 2.5'	3.0	0'-10"
	90°	8.7	3.0' x 3.0'	4.5	1'-0"
	45°	4.8	2.5' x 2.5'	2.5	0'-8"
12"	TEE	8.6	3.0' x 3.0'	5.0	1'-0"
	90°	12.2	3.5' x 3.5'	7.8	1'-3"
	45°	6.6	2.5' x 2.5'	3.0	0'-9"
16"	TEE	15.2	4.0' x 4.0'	12	1'-3"
	90°	21.4	4.5' x 4.5'	17	1'-6"
	45°	11.6	3.5' x 3.5'	7.5	1'-0"
18"	TEE	19.1	4.0' x 4.0'	12	1'-3"
	90°	27.1	4.0' x 4.0'	23	1'-3"
	45°	14.7	4.0' x 4.0'	12	1'-2"



STANDARD THRUST BLOCK

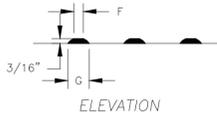
- POURED BLOCKING SHALL BE POURED IN PLACE WITHOUT DIRECT CONTACT TO THE PIPE OR FITTINGS. SOME PROTECTIVE MATERIAL SUCH AS PLASTIC SHALL BE PLACED BETWEEN THE CONCRETE AND PIPE OR FITTING.
- POURED BLOCKING SHALL BE POURED AGAINST FIRM UNDISTURBED SOIL.
- CONCRETE FOR ALL BLOCKING SHALL HAVE A 28-DAY MINIMUM COMPRESSIVE STRENGTH OF 2,500 PSI
- CONCRETE BLOCKING FOR VERTICAL BENDS SHALL BE PER APWA STD. PLAN NO. B-22.
- LAYOUT TO BE APPROVED BY THE CPU INSPECTOR PRIOR TO AND AFTER CONCRETE POUR.
- ALL PRE-CAST THRUST BLOCKS SHALL BE PLACED IN CENTER OF TEE OR BEND.

SOIL BEARING = 2000 LB/SQFT 11/98



TRUNCATED DOME DETAIL

	MIN.	MAX.
D	1 5/8"	2 3/8"
E	5/8"	1 1/2"
F	7/16"	3/4"
G	7/8"	1 7/16"



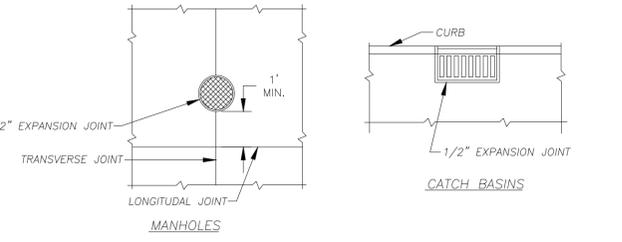
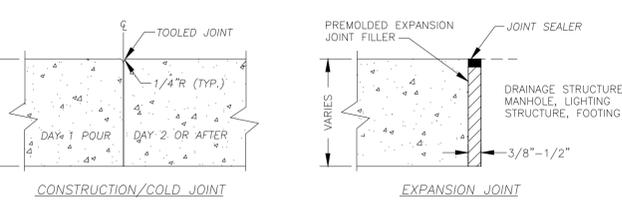
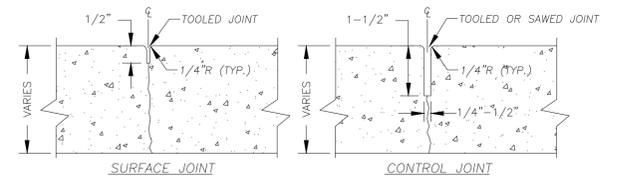
ELEVATION
TRUNCATED DOMES (SEE NOTE 2)
DETECTABLE WARNING
PATTERN DETAIL

- NOTES:
1. AVOID PLACING DRAINAGE STRUCTURES, JUNCTION BOXES OR OTHER OBSTRUCTIONS IN FRONT OF RAMP ACCESS AREA.
 2. THE DETECTABLE WARNING PATTERNS CAN BE CREATED BY ACCEPTABLE MEANS THAT WILL ACHIEVE THE TRUNCATED DOME DIMENSIONS AND SPACING SHOWN.
 3. PLACE TRUNCATED DOME DETECTABLE WARNING TEXTURE IN THE LOWER 24" OF THE THROAT OF THE RAMP ONLY. ARRANGE DOMES USING IN-LINE PATTERN ONLY AS SHOWN. COLOR OF TEXTURE (COATING) SHALL BE SAFETY YELLOW IN COMPLIANCE WITH WSDOT STANDARD SPECIFICATIONS OR AS PER ADA SPECIFICATIONS.
 4. FOR CONSTRUCTION OF SIDEWALK RAMPS OUTSIDE OF PUBLIC RIGHT-OF-WAY, CHECK WITH STATE BUILDING CODES.

NO.	REVISIONS	DATE	BY

DWG: F10.DWG
Department of Public Works
CLARK COUNTY WASHINGTON
proud past, promising future
Peter Capen
COUNTY ENGINEER
5/23/08
DATE

STANDARD
F10
DETAIL
DESIGNED
DRAWN
DATE 05/23/08

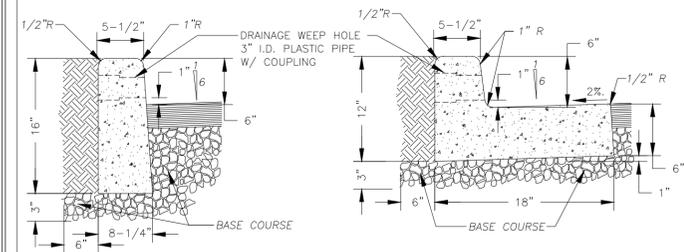


- NOTES:
1. CONTROL JOINTS MAY BE USED IN PLACE OF SURFACE JOINTS.
 2. CONSTRUCTION/COLD JOINTS MAY BE USED IN PLACE OF CONTROL JOINTS.
 3. EXPANSION JOINTS MAY BE USED IN PLACE OF CONSTRUCTION/COLD JOINTS.
 4. ALL JOINTS AND EDGES SHALL BE FINISHED WITH 1/4" RADIUS EDGER (3" SMOOTH EACH SIDE).
 5. PARALLEL JOINTS SHALL BE SEPARATED BY A MINIMUM OF 2'.

NO.	REVISIONS	DATE	BY

DWG: F31.DWG
Department of Public Works
CLARK COUNTY WASHINGTON
proud past, promising future
Peter Capen
COUNTY ENGINEER
5/23/08
DATE

STANDARD
F31
DETAIL
DESIGNED
DRAWN
DATE 05/23/08



TYPE E-1 CURB
SEE WSDOT STANDARD
PLAN No. F-10.12-00

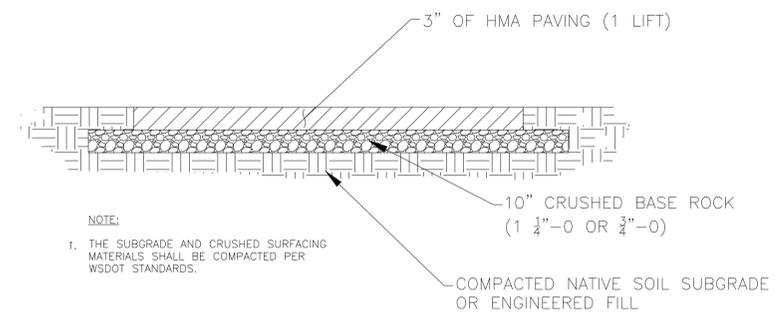
TYPE A-1 CURB & GUTTER
SEE WSDOT STANDARD
PLAN No. F-10.12-00

- NOTES:
1. CONCRETE SHALL BE 3000 PSI MIN. (CLASS 3000) 3 1/2" SLUMP (MAX.).
 2. CURBS ADJACENT TO PAVEMENT OR SIDEWALK TO HAVE EXPANSION AND/OR CONTROL JOINTS TO MATCH EXISTING PATTERNS.
 3. 3/8" EXPANSION JOINTS TO BE PROVIDED AT EACH POINT OF TANGENCY OF THE CURB, COLD JOINTS, EACH SIDE OF INLET STRUCTURES AND DRIVEWAYS. MATERIAL TO BE PRE-MOLDED, ASPHALT IMPREGNATED AND NON EXTRUDING. SEE STD. DETAIL F31 FOR JOINTS.
 4. CONTROL JOINT SPACING NOT TO EXCEED 3W SIDEWALK PANELS. THE DEPTH OF THE JOINT SHALL BE AT LEAST 1-1/2 INCHES. WEEP HOLES TO BE CENTERED WITH CONTROL JOINTS.
 5. BASE COURSE SHALL BE TO SUBGRADE OF STREET SECTION OR MIN. 3", WHICHEVER IS GREATER, AND SHALL EXTEND 6" BEHIND THE CURB. THE SUBGRADE AND CRUSHED SURFACING MATERIALS SHALL BE COMPACTED PER WSDOT STANDARDS.
 6. DRAINAGE WEEP HOLES TO BE 3" I.D. PLASTIC PIPE WITH COUPLING. FINISH PIPE END FLUSH WITH FACE OF CURB.
 7. GROUT ANY VOIDS IN CONCRETE SURROUNDING PIPE.
 8. DRAINAGE ACCESS THROUGH EXISTING CURBS SHALL BE CORE DRILLED.
 9. CURB TO BE BRUSH FINISHED. ALL EXISTING EDGES SHALL BE SAWCUT.
 10. ALL MATERIALS AND WORKMANSHIP FOR TYPE E-1 & A-1 SHALL BE IN ACCORDANCE WITH WSDOT STANDARD PLAN No. F-10.12-00, APPROVED 12/20/06 OR MOST CURRENT REVISION.

NO.	REVISIONS	DATE	BY

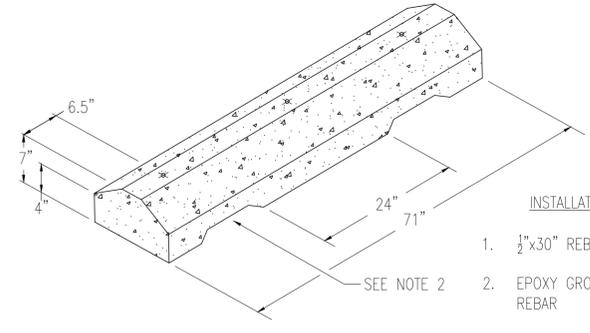
DWG: F18.DWG
Department of Public Works
CLARK COUNTY WASHINGTON
proud past, promising future
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COUNTY ENGINEER
5/23/08
DATE

STANDARD
F18
DETAIL
DESIGNED
DRAWN
DATE 05/23/08



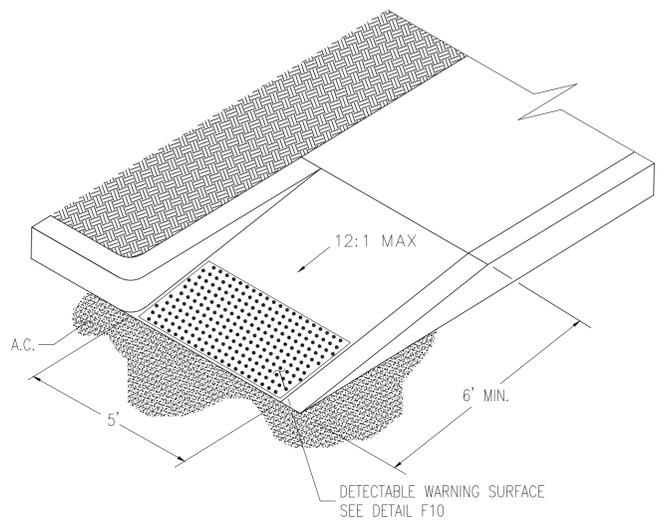
1 SITE PAVEMENT ASPHALT SECTION
NOT TO SCALE

- NOTE:
1. THE SUBGRADE AND CRUSHED SURFACING MATERIALS SHALL BE COMPACTED PER WSDOT STANDARDS.

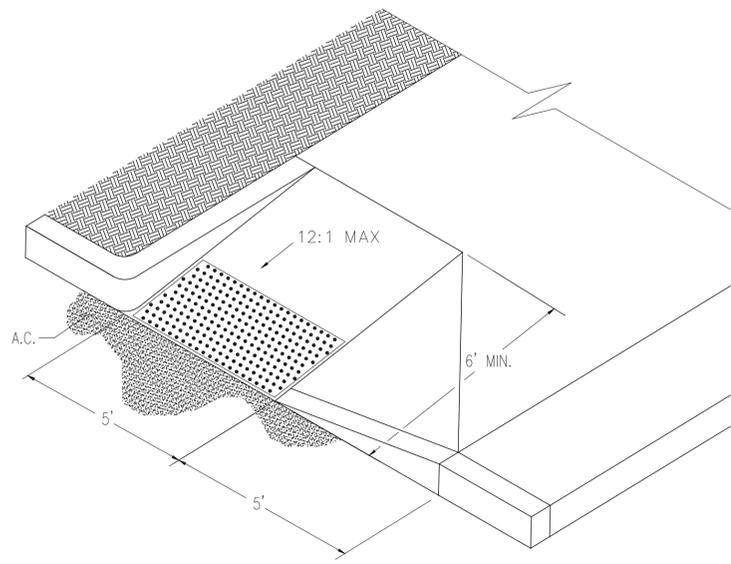


2 PRECAST CONCRETE WHEEL STOP
NOT TO SCALE

- INSTALLATION NOTES
1. 1/2"x30" REBAR TYP. 3 PLACES
 2. EPOXY GROUT IN PLACE W/ 2 REBAR



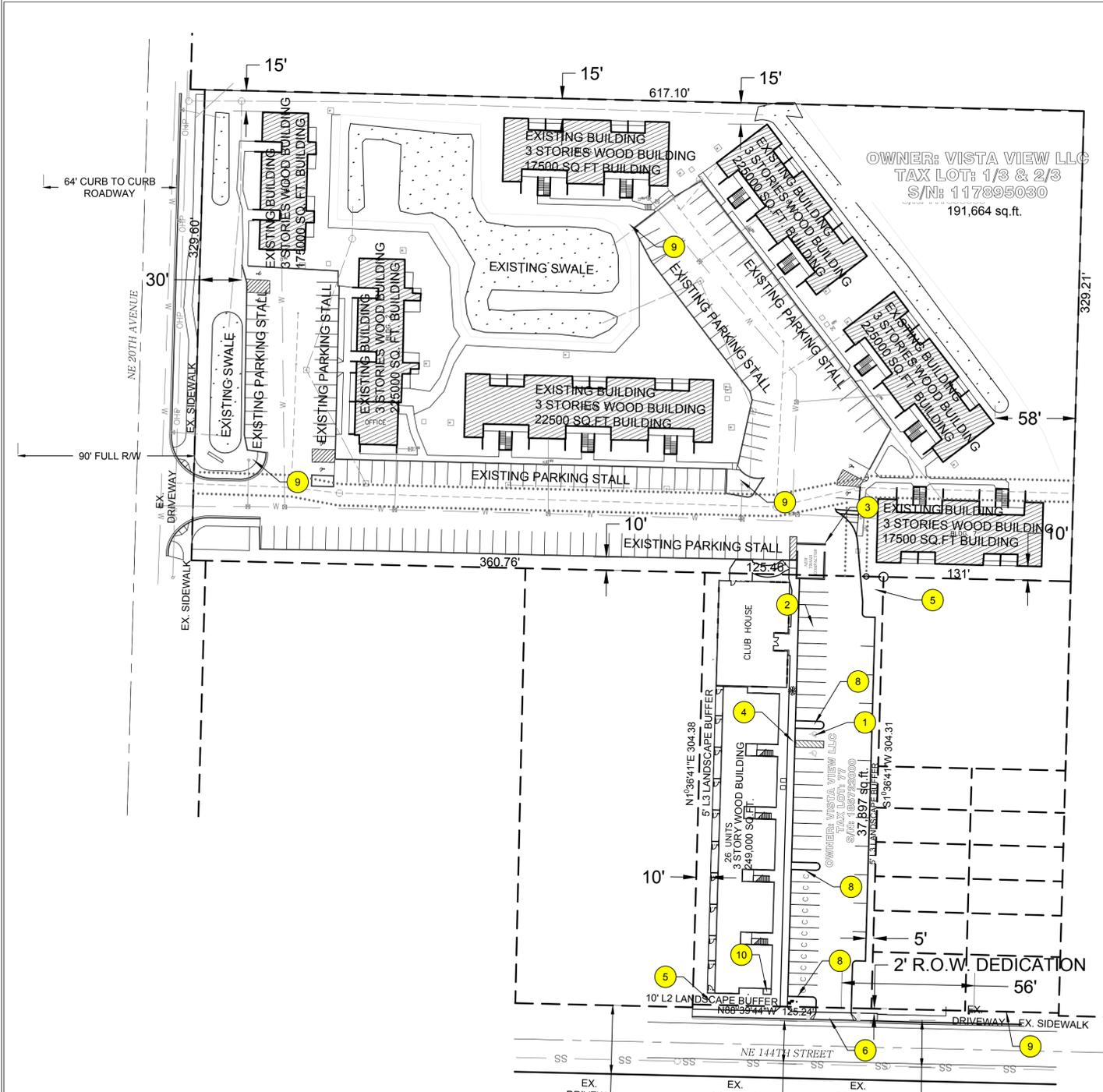
3 PEDESTRIAN RAMP
NOT TO SCALE



4 PEDESTRIAN RAMP
NOT TO SCALE

DWG: F18.DWG
Department of Public Works
CLARK COUNTY WASHINGTON
proud past, promising future
Peter Capen
COUNTY ENGINEER
5/23/08
DATE

STANDARD
F18
DETAIL
DESIGNED
DRAWN
DATE 05/23/08



SITE DATA

PARCEL ID 117895-030
 PARCEL ADDRESS 14505 NE 20TH AVE
 VANCOUVER WA 98686
 PARCEL SIZE 4.4 ACRES = 191,664 sq.ft.
 PRESENT USE: 90 UNITS FAMILY UNITS
 TRANSIT ROUTES & STOPS C-TRAN ROUTE #19
 EXISTING WATER CLACK PUD
 EXISTING SEWER CLARK REGIONAL WASTEWATER DISTRICT
 EXISTING ELECTRICAL CLARK PUD
 EXISTING SETBACKS
 STREET = 20 FT.
 SIDE = 10 FT.
 REAR = 20 FT

DENSITY CALCULATION (ZONE R-22)
 GROSS AREA = 191,664 SF (4.4 AC)
 DENSITY ALLOWED = 22 UNITS PER ACRE
 DENSITY PROVIDED = 20 UNITS PER ACRE

PARKING DATA
 PARKING SPACE RATIO REQUIRED = 1.5 SPACE/DWELLING UNITS
 PARKING SPACE RATIO PROVIDED = 1.71 SPACE/DWELLING UNITS
 PARKING SUMMARY
 STANDARD PARKING STALLS = 128
 COMPACT PARKING STALLS = 18
 ADA PARKING STALLS = 8

& SEWER PUBLIC WATER AND SEWER IS ON SITE

PARCEL ID 185722-000
 PARCEL SIZE 0.87 ACRES = 37,897 sq.ft.

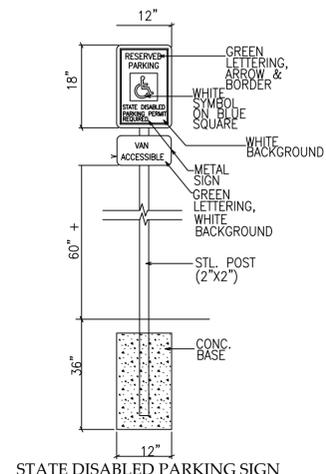
C.C.C. 40.360.020
 MIN. SOLID WASTE/RECYCLE AREA REQUIRED:
 PROPOSED SOLID/RECYCLE AREA: 1025 SQ.F.T.

TRANSPORTATION NOTE:

NE 20TH AVENUE TYPICAL SECTION IS URBAN MINOR ARTERIAL (M-4cb) DRAWING 3
 NE 144TH STREET TYPICAL SECTION IS URBAN NEIGHBORHOOD CIRCULATOR
 DRAWING 12

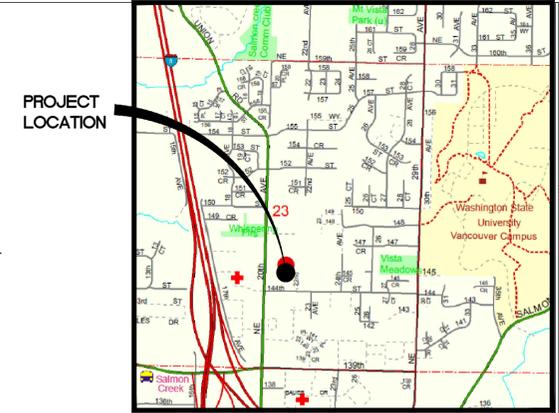
NOTES:

- ① (2) ADA COMPLIANT PARKING STALLS
- ② 4" WHITE PARKING STALL STRIPE (TYP.)
- ③ TRASH ENCLOSURE
- ④ ADA COMPLAINT CURB RAMP (SHEET C8.1)
- ⑤ LANDSCAPE AREA
- ⑥ CEMENT CONCRETE APPROACH DETAIL
- ⑦ 5' WIDE SIDEWALK (TYP.)
- ⑧ RAIN GARDEN (SHEET C7.0) STORMWATER EASEMENT WILL BE GRANTED TO CLARK COUNTY.
- ⑨ EXISTING FIRE HYDRANT
- ⑩ FIRE SPRINKLER RISER



STATE DISABLED PARKING SIGN

PROPOSED PARKING STALLS WILL UTILIZE EITHER WHEEL STOPS OR CURB
 ADA
 ADA ACCESSIBLE RAMPS SHALL BE PROVIDED FOR ALL ADA PARKING STALL AISLES AND ACCESSIBLE ROUTES OF TRAVEL. DETECTABLE WARNINGS SHALL BE PROVIDED AT ALL RAMPS. STANDARD DETAILS FOR THE RAMPS AND ADDITIONAL INFORMATION IS PROVIDED ON CIVIL ENGINEERING PLANS



VICINITY MAP
 NOT TO SCALE

OWNER

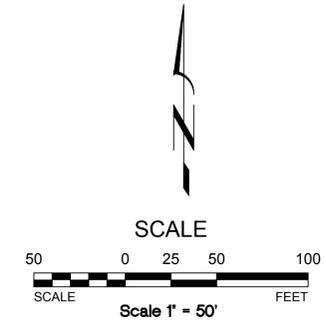
VISTA VIEW LLC
 14505 NE 20TH AVE
 VANCOUVER WA, 98686
 PHONE: 360-567-0990
 CONTACTS:
 JERRY MARGER jmarger@comcast.net
 DON KITTERMAN don@ceasefire.com

ENGINEER/CONTACT

ENGINEERING NORTHWEST PLLC
 7504 NW 10TH AVENUE
 VANCOUVER, WA 98685
 PHONE: (360) 931-3122
 CONTACT PAUL WILLIAMS P.E.
 EMAIL: paulwilliamspe@gmail.com

APPLICANT

JERRY MARGER
 14505 NE 20TH AVE
 VANCOUVER, WA 98686
 PHONE: (360) 567-0990
 EMAIL: jmarger@comcast.net



DATE: 5/24/2016

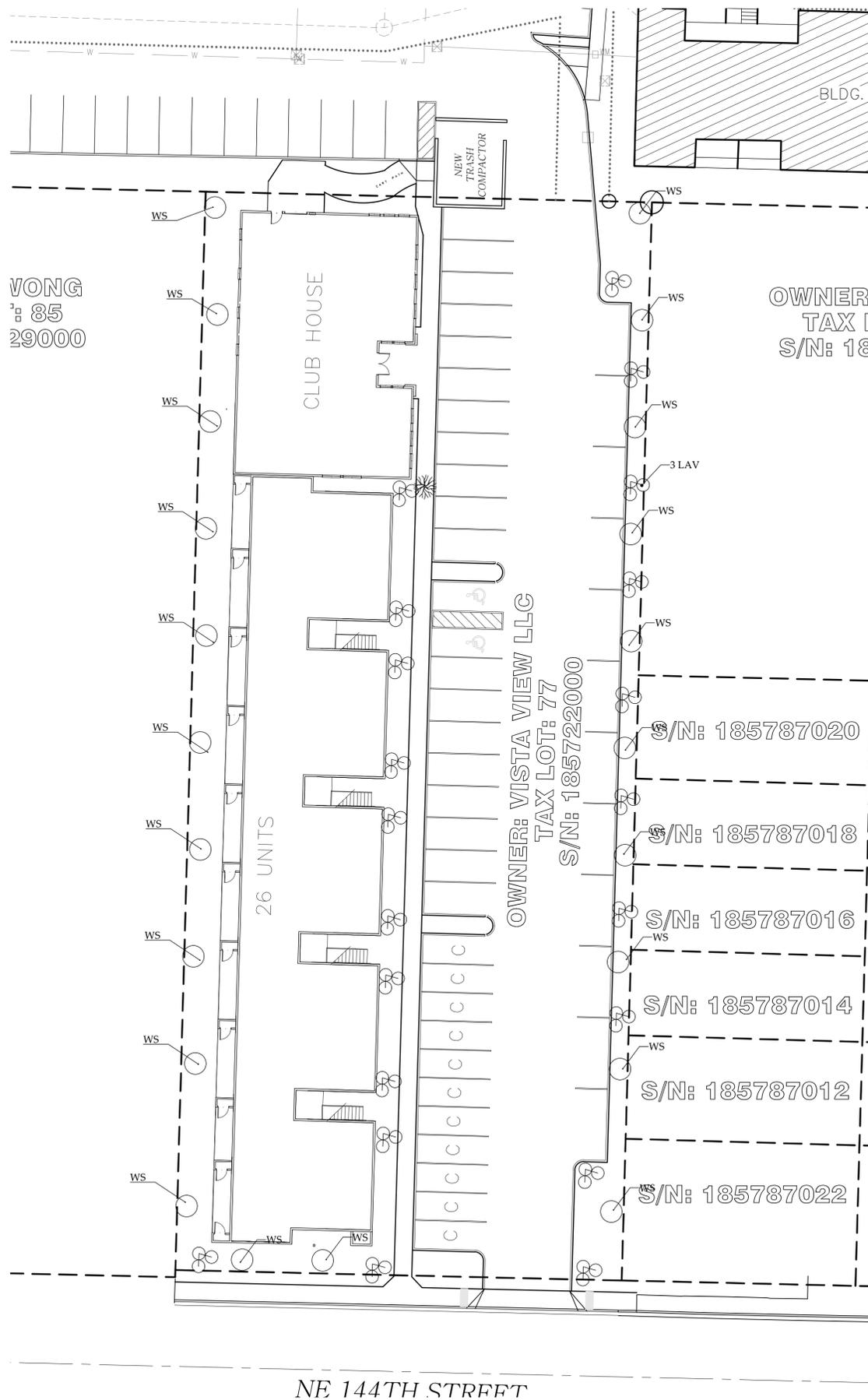


REVISIONS:



PROJECT NO: 15017
 DESIGNED BY: PCW
 DRAWN BY: PCW
 DATE: 6/29/2016

SHEET NO. SP1.0



VONG
85
29000

OWNER:
TAX I
S/N: 18

OWNER: VISTA VIEW LLC
TAX LOT: 77
S/N: 185722000

S/N: 185787020
S/N: 185787018
S/N: 185787016
S/N: 185787014
S/N: 185787012
S/N: 185787022

NE 144TH STREET

LANDSCAPE LEGEND

SYMBOL	COMMON NAME BOTANICAL NAME	SIZE/COND.	SPACING	QUANTITY
WS	Weeping White Spruce <i>Picea glauca 'Pendula'</i>	1-1/2" cal	10' o.c.	3
VC	Virescens Cedar	1-1/2" cal	15' oc.c	13

LANDSCAPE LEGEND

SYMBOL	COMMON NAME BOTANICAL NAME	SIZE/COND.	SPACING	QUANTITY
AJ	AJ Nandina	1 gal	1.5' o.c.	20
AW	Artic Willow	1 gal	1.5' o.c.	40
BH	Box Hedge	1 gal	1.5' o.c.	67
DV	David Viburnum	1 gal	1.5' o.c.	29
HB	Hardjizer Beauty	1 gal	1.5' o.c.	3
HN	Hinoki Nana	1 gal	1.5' o.c.	9
KD	Kelsey Dogwood	1 gal	1.5' o.c.	93
LAV	Lavender	1 gal.	2.5' o.c.	44
LG	Little Kitten Grass	1 gal.	2.5' o.c.	6
LS	Little Gem Spruce	1 gal	1.5' o.c.	4
ML	Miss Kim Lilee	1 gal	1.5' o.c.	0
MX	Mexican Feather Grass	1 gal	1.5' o.c.	22
TC	Testacea Carex	1 gal	1.5' o.c.	8
SV	Snowflake Viburnum	1 gal	1.5' o.c.	0
SR	Snowlady Dwarf Rhododeron	1 gal	1.5' o.c.	3
SW	Saint John Warts	1 gal	1.5' o.c.	32
W	Weigela	1 gal	1.5' o.c.	24

GROUNDCOVER

		APPROX. AREA
	Annual Flowers -Type per owner To be in bloom at time of grand opening	4" Pot 8" o.c. 200 S.F.
	Kinnikinick <i>Arclostophylus uva-ursi</i> "Emerald Carpet"	1 Gal 18" o.c. 1,065S.F.
	Seeded Lawn - Sod Lawn Alternate	27,209 S.F.

BIORETENTION FACILITY

SYMBOL	COMMON NAME BOTANICAL NAME	SIZE/COND.	SPACING	QUANTITY
RTD	Compact Red-Twig Dogwood <i>Cornus Serices 'Kelsey'</i>	1 gal	18" o.c.	316
WPB	Williams Penn Bareberry <i>Berberis X Glad. 'William Penn'</i>	2 gal	18" o.c.	281
PCB	Pacific Bleeding Heart <i>Dicentra formosa</i>	1 gal	12"	128
RR	Dwarf Pavement Rugosa Rose <i>Rosa Rugos 'Dwarf Pavement'</i>	2 gal	48" o.c.	

Bioretention Facility Planting: A mix of the following shall be planted in the bottom (base) of the bioretention facility

25% (920 plugs) - Daggerleaf Rush (*Juncus Ensifoulus*)

25% (920 Plugs) - Slough Sede (*Carex Obnupta*)

25% (920 Plugs) - Creeping Spike Rush (*Eleocharis Palustris*)

25% (920 Plugs) - Soft Rush (*Juncus Ensifoulus*)

All plants shall be 6" plugs, 12" - 18" o.c. in mass grouping of like kind for a natural appearance. Grouping shall have a minimum of 20 plants per grouping. Hatched areas are diagrammatic; plant for full coverage of areas shown

APPROX. TOTAL BOTTOM AREA OF RAIN GARDEN = 13,513 S.F.

GENERAL NOTES

- ALL LANDSCAPE AREAS SHALL HAVE A 3" LAYER OF BARK NUGGETS
- ALL LANDSCAPE AREAS SHALL BE IRRIGATED WITH A FULLY AUTOMATIC UNDERGROUND IRRIGATION SYSTEM WITH FULL PLANT COVERAGE ON THE DATE OF INSTALLATION. PROJECT LANDSCAPE IRRIGATION SHALL COMPLY WITH VMC 20.925.030D4.
- GROUNDCOVER PLANTS TO BE PLACED NOT MORE THAN THIRTY (30) INCHES ON CENTER AND THIRTY (30) INCHES BETWEEN ROWS. ROWS OF PLANTS SHALL BE STAGGERED FOR A MORE EFFECTIVE COVERING. GROUNDCOVER SHALL BE SUPPLIED IN A MINIMUM FOUR (4) INCH SIZE CONTAINER OR A TWO AND ONE-QUARTER (2-1/4) INCH CONTAINER OR EQUIVALENT IF PLANTED EIGHTEEN (18) INCHES ON CENTER.



LANDSCAPE PLAN FOR:
VISTA VIEW APARTMENTS

A Site in Clark County, Washington
C:\Users\Celena\Documents\Dropbox\ENGINEERING\NORTHWEST\IMAGES\ONE_2.png



REVISIONS:



PROJECT NO: 15017
DESIGNED BY: PCW
DRAWN BY: ###
DATE: 5/24/2016

SHEET NO.
LP1.0

SHEET 11 OF 20