

WESTMINSTER POND REHABILITATION

LACEY CONTRACT # PW 2023-04 SECTION 16, T19N, R1W, W.M. PARCEL # 83020100000

LACEY CITY OFFICIALS

MAYOR:	Andy Ryder
DEPUTY MAYOR:	Malcolm Miller
CITY COUNCIL:	Lenny Greenstein Michael Steadman Carolyn Cox Ed Kunkel Robin Vazquez
ITY MANAGER:	Rick Walk (Interim)
CITY ATTORNEY:	David S. Schneider
ITY ENGINEER:	Aubrey Collier, P.E., S.E.
DIRECTOR OF	

Scott Egger, P.E.

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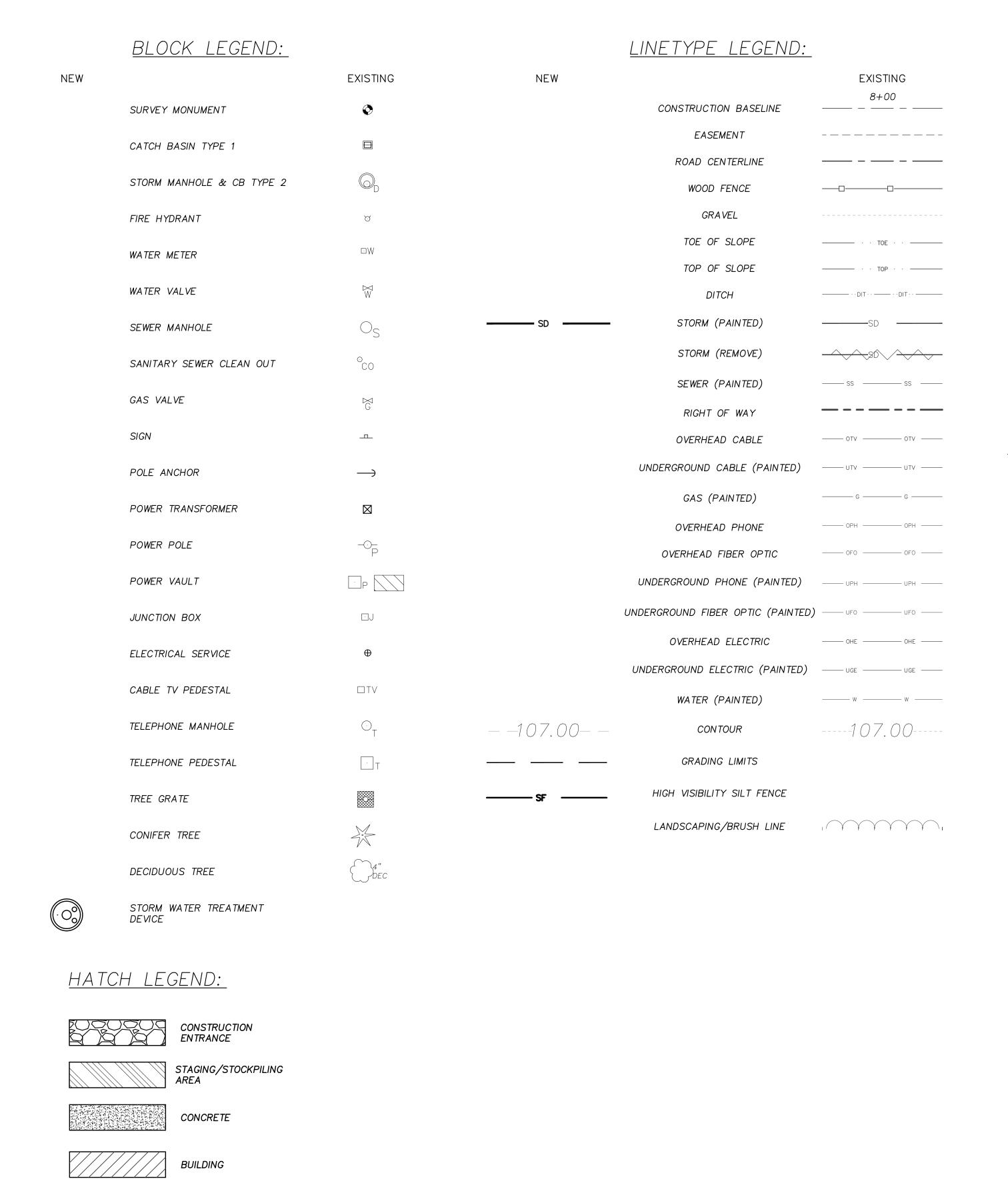
PUBLIC WORKS:

5/11/23





Lacey Dwg. Number: D-23-08



ABBREVIATIONS:

\triangle	DEFLECTION ANGLE	S/W	SIDEWALK	V.P.T.	VERTICAL POINT OF TANGENCY
— EP	EDGE OF PAVEMENT	C.S.B.C.	CRUSHED SURFACING BASE COURSE	EL.	ELEVATION
		C.S.T.C.	CRUSHED SURFACING TOP COURSE	S.Y.	SQUARE YARD
RT	RIGHT	CL, Q	CENTERLINE	C. Y.	CUBIC YARD
LT	LEFT	СВ	CATCH BASIN	TYP.	TYPICAL
I.E.	INVERT ELEVATION	N/A	NOT APPLICABLE	LUM.	LUMINAIRE
P.C.	POINT OF CURVATURE	•	ASPHALT CONCRETE	L.F.	LINEAR FEET
P.I.	POINT OF INTERSECTION	A/C		RD.	ROAD
P.T.	POINT OF TANGENCY	ACP	ASPHALT CONCRETE PAVEMENT	DR.	DRIVE
R.	RADIUS	D.I.	DUCTILE IRON	PKWY.	PARKWAY
R.P.	RADIUS POINT	SD	STORM DRAIN	CONST.	CONSTRUCTION
R/W	RIGHT-OF-WAY	SS	SANITARY SEWER	FT.	
ROW	RIGHT-OF-WAY	RPBA	REDUCED PRESSURE BACKFLOW ASSEMBLY		FOOT
EX.	EXISTING	DIA &		D/W	DRIVEWAY
EXIST.	EXISTING	DIA, Ø	DIAMETER	APPROX.	APPROXIMATELY
PROP.	PROPOSED	A.P.	ANGLE POINT	U.O.N.	UNLESS OTHERWISE NOTED
		V.P.I.	VERTICAL POINT OF INTERSECTION		

VERTICAL POINT OF CURVATURE

NOTES:

CONSTRUCTION NOTES:

STATION

- 1. CALL 48 HOURS BEFORE YOU DIG 1-800-424-5555 OR 811.
- 2. THE CONTRACTOR SHALL FIELD VERIFY UTILITY LOCATIONS PRIOR TO CONSTRUCTION.
- 3. THE CONTRACTOR SHALL NOT REMOVE ANY TREES UNLESS INDICATED ON PLANS OR DIRECTED BY ENGINEER.
- 4. THE CONTRACTOR SHALL RESTORE ALL LANDSCAPING TO EQUAL OR BETTER THAN ORIGINAL CONDITIONS AS DIRECTED BY THE ENGINEER.
- 5. THE CONTRACTOR SHALL PROTECT ALL EXISTING SURVEY MONUMENTS AND PROPERTY CORNERS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH RESTORING MONUMENTS OR PROPERTY CORNERS OUTSIDE OF THE CONSTRUCTION LIMITS.

SEWERS.

<u>VERTICAL</u> THE CITY OF LACEY BENCHMARKS ARE BASED ON <u>NGVD</u> 29 DATUM FROM PRIMARY CONTROL ESTABLISHED BY FEDERAL AND STATE AGENCIES TO FIRST OR SECOND ORDER ACCURACY. THE CITY OF LACEY'S BENCHMARKS ARE GENERALLY TO THIRD ORDER ACCURACY.

1. ALL WORKMANSHIP AND MATERIALS SHALL BE IN

MUNICIPAL CONSTRUCTION (WSDOT/APWA).

3. ALL STORM DRAINS SHALL BE CONSTRUCTED IN

AUTHORITY OR AGENCY.

CURRENT COPY OF THE STATE OF WASHINGTON

AND OTHER REQUIREMENTS OF THE GOVERNING

ACCORDANCE WITH CITY STANDARDS AND THE MOST

STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND

CONTRACTOR SHALL COMPLY WITH ALL OTHER PERMITS

ACCORDANCE WITH WSDOT STD. SPEC. 7-04 STORM

CITY OF LACEY BM#1327 SURVEY MARKER NAIL IN WALK 1.9' W. OF EXT. OF C/L COLLEGE ST NE, 2. NE OF F/L (HORIZONTAL CONTROL 1340) INT OF 6TH AVE NE ELEV.=191.046

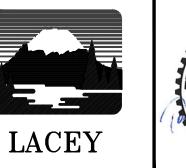
<u>BASIS OF BEARING</u> MERIDIAN IS WASHINGTON COORDINATE SYSTEM OF 1983/91 - SOUTH ZONE DERIVED FROM TIES TO HPGN STATIONS SANDERSON, MCKENNA AND CBL1110 AND TO WSDOT GPS STATIONS G259R, GP34005-2, GP34005-4, GP34101-32, GP34101-39, HC34-2, LUHR RM2, TS34-33, TS34-59 AND TO THURSTON COUNTY GPS STATIONS U-531, AT-194, AT-352, AT-355, AT-447, AT449 AND AT-478. DISTANCES SHOWN ARE GROUND SCALE U.S.

FEET. COMBINED SCALE FACTOR (GROUND TO GRID) IS 0.999935701. SURVEY AF# 3111152 DATÉD 09-24-1997.

CITY OF LACEY, WASHINGTON DEPARTMENT OF PUBLIC WORKS

420 COLLEGE STREET SE 98503-1238 LACEY, WA

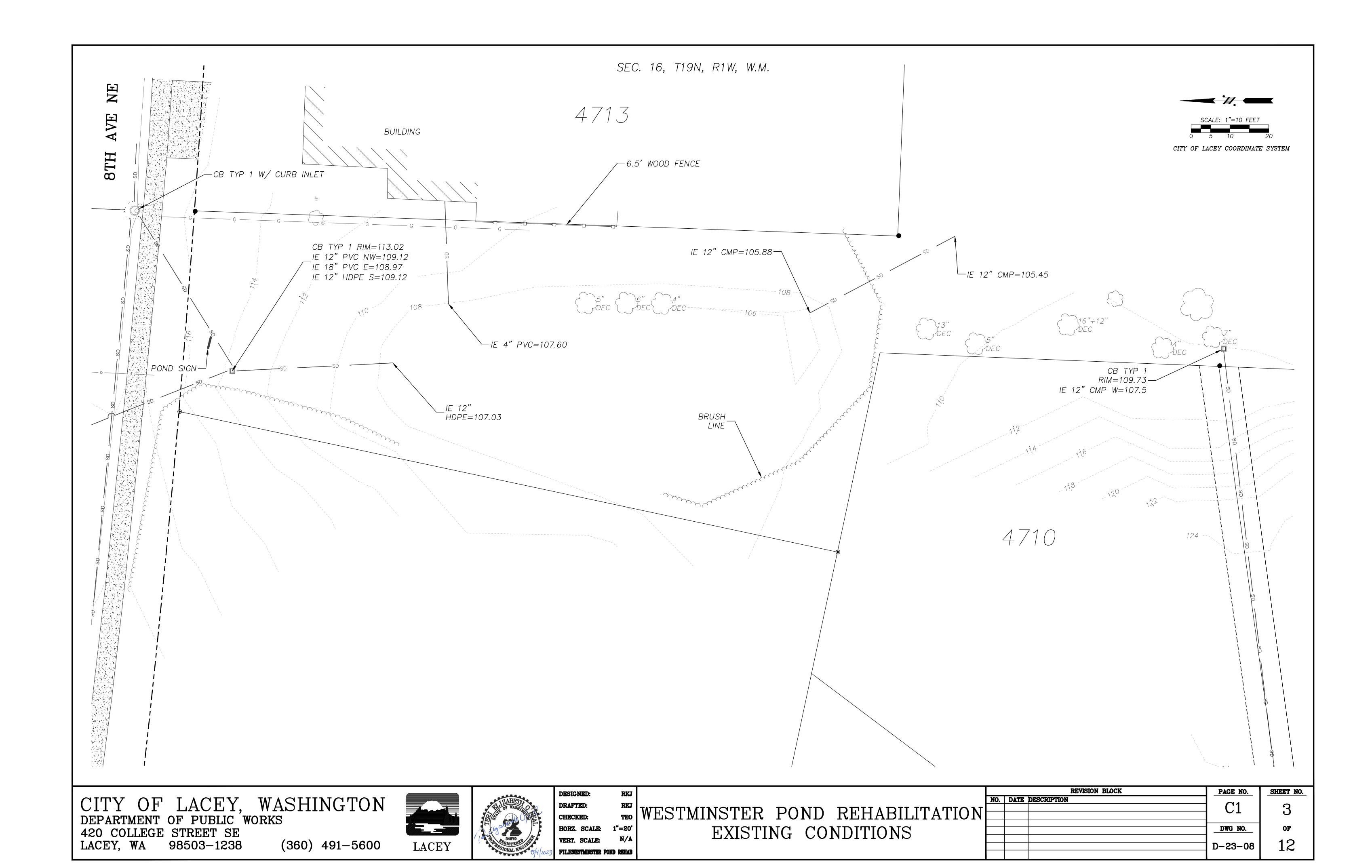
(360) 491-5600



DESIGNED: DRAFTED: CHECKED: HORZ. SCALE: VERT. SCALE: FILE: COVER SHEET & NOTES

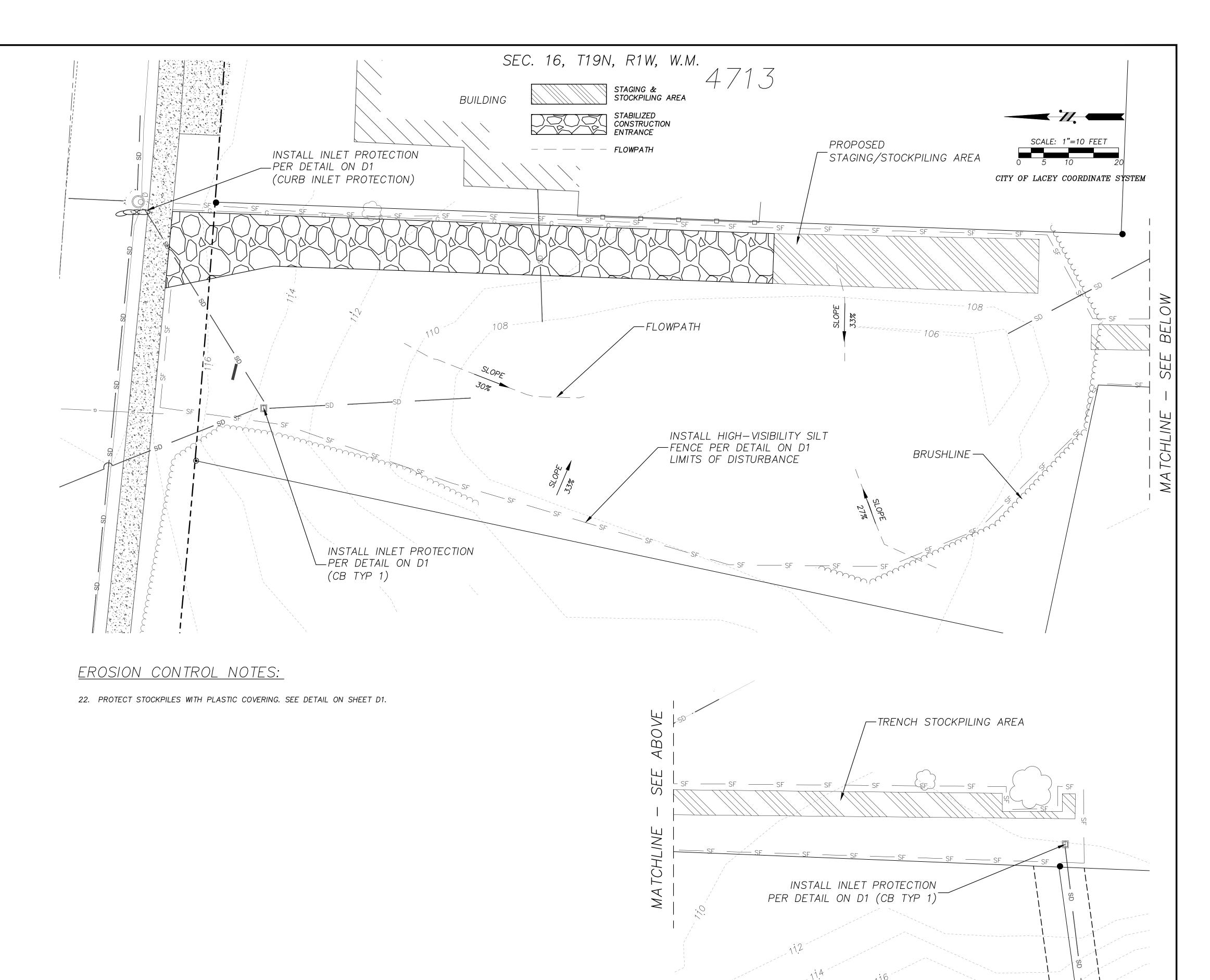
WESTMINSTER POND REHABILITATION GENERAL NOTES

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EROSION CONTROL NOTES:

- 1. TEMPORARY EROSION/WATER POLLUTION CONTROL MEASURES SHALL BE IN ACCORDANCE WITH SECTION 8-01 OF THE STANDARD SPECIFICATIONS AND THE LACEY STORM WATER MANUAL AND AS SHOWN IN THE EROSION AND SEDIMENT CONTROL PLAN.
- 2. SITE INSPECTIONS SHALL BE CONDUCTED BY A PERSON WHO IS KNOWLEDGEABLE IN THE PRINCIPLES AND PRACTICES OF EROSION AND SEDIMENT CONTROL. FOR PROJECT SITES THAT REQUIRE A CONSTRUCTION SWPPP, A CERTIFIED EROSION AND SEDIMENT CONTROL LEAD (CESCL) SHALL BE IDENTIFIED IN THE CONSTRUCTION SWPPP AND SHALL BE ON SITE OR ON CALL AT ALL TIMES.
- 3. APPROVAL OF THE CONSTRUCTION SWPPP DOES NOT CONSTITUTE AN APPROVAL OF PERMANENT ROAD OR DRAINAGE DESIGN (E.G. SIZE AND LOCATION OF ROADS, PIPES, RESTRICTORS, CHANNELS, RETENTION/DETENTION/INFILTRATION FACILITIES, UTILITIES, ETC.).
- 4. THE IMPLEMENTATION OF THE CONSTRUCTION SWPPP AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE CONSTRUCTION SWPPP FACILITIES IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED AND VEGETATION/LANDSCAPING IS ESTABLISHED.
- 5. THE CLEARING LIMIT BOUNDARIES SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED IN THE FIELD PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE FLAGGED CLEARING LIMITS SHALL BE PERMITTED. THE FLAGGING SHALL BE MAINTAINED BY THE CONTRACTOR FOR THE DURATION OF CONSTRUCTION.
- 6. THE CONSTRUCTION SWPPP FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED PRIOR TO ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO ENSURE THAT SEDIMENT AND SEDIMENT—LADEN WATER DO NOT ENTER THE DRAINAGE SYSTEM, ROADWAYS, OR VIOLATE APPLICABLE STANDARDS FOR SURFACE WATER QUALITY, GROUNDWATER QUALITY, OR SEDIMENT QUALITY.
- 7. THE CONSTRUCTION SWPPP FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE CONSTRUCTION SWPPP FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT—LADEN WATER DO NOT LEAVE THE SITE DURING THE COURSE OF CONSTRUCTION, INCLUDING CONSTRUCTION ON INDIVIDUAL LOTS.
- 8. THE CONSTRUCTION SWPPP FACILITIES ON ACTIVE SITES SHALL BE INSPECTED DAILY BY THE CONTRACTOR. THE FACILITIES SHALL BE MAINTAINED, REPAIRED, OR AUGMENTED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTION.
- 9. THE CONSTRUCTION SWPPP FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AT LEAST MONTHLY AND WITHIN 48 HOURS FOLLOWING A MAJOR STORM EVENT (1"RAINFALL IN 24 HOURS) BY THE CONTRACTOR. THE FACILITIES SHALL BE MAINTAINED, REPAIRED, OR AUGMENTED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTION.
- 10. STORM DRAIN INLETS OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT STORMWATER RUNOFF DOES NOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR TREATED TO REMOVE SEDIMENT. AT NO TIME SHALL MORE THAN 1 FOOT OR 1/3 OF THE BMP VOLUME (WHICHEVER IS LESS) OF SEDIMENT BE ALLOWED TO ACCUMULATE WITHIN A STORM DRAIN INLET PROTECTION BMP. ALL CATCH BASINS AND CONVEYANCE LINES SHALL BE CLEANED AS PART OF PROJECT COMPLETION AND ACCEPTANCE. THE CLEANING OPERATION SHALL NOT FLUSH SEDIMENT—LADEN WATER INTO THE DOWNSTREAM SYSTEM.
- 11. STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES MAY BE REQUIRED TO ENSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.
- 12. ROADS SHALL BE INSPECTED DAILY AND CLEANED THOROUGHLY AS NEEDED TO PROTECT DOWNSTREAM WATER RESOURCES OR STORMWATER INFRASTRUCTURE. SEDIMENT SHALL BE REMOVED FROM ROADS BY SHOVELING OR PICKUP SWEEPING AND SHALL BE TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA.
- 13. FROM OCTOBER 1 THROUGH APRIL 30, NO SOILS SHALL REMAIN EXPOSED AND UNWORKED FOR MORE THAN 2 DAYS. FROM MAY 1 TO SEPTEMBER 30, NO SOILS SHALL REMAIN EXPOSED AND UNWORKED FOR MORE THAN 7 DAYS. SOILS SHALL BE STABILIZED AT THE END OF THE SHIFT BEFORE A HOLIDAY OR WEEKEND IF NEEDED BASED ON THE WEATHER FORECAST. LINEAR CONSTRUCTION ACTIVITIES, SUCH AS RIGHT—OF—WAY AND EASEMENT CLEARING, ROADWAY DEVELOPMENT, PIPELINES, AND TRENCHING FOR UTILITIES, SHALL COMPLY WITH THESE REQUIREMENTS. THESE STABILIZATION REQUIREMENTS APPLY TO ALL SOILS ON SITE, WHETHER AT FINAL GRADE OR NOT. THE CITY OF LACEY MAY DECREASE THESE TIME LIMITS IF IT CAN BE SHOWN THAT A DEVELOPMENT SITE'S EROSION OR RUNOFF POTENTIAL JUSTIFIES A DIFFERENT STANDARD.
- 14. CONTACT THE CITY FOR APPROVAL PRIOR TO ALL CLEARING, GRADING, AND OTHER SOIL DISTURBING ACTIVITIES THAT OCCUR BETWEEN OCTOBER 1 AND APRIL 30. SUCH WORK SHALL ONLY BE PERMITTED IF SHOWN TO THE SATISFACTION OF THE CITY THAT THE TRANSPORT OF SEDIMENT FROM THE CONSTRUCTION SITE TO RECEIVING WATERS WILL BE PREVENTED. THE CITY MAY REQUIRE SUPPLEMENTAL SWPPP DOCUMENTATION FOR WET SEASON WORK.
- 15. SOIL STOCKPILES MUST BE STABILIZED AND PROTECTED FROM EROSION.
- 16. HANDLE AND DISPOSE OF ALL POLLUTANTS, INCLUDING WASTE MATERIALS AND DEMOLITION DEBRIS THAT OCCUR ON SITE IN A MANNER THAT DOES NOT CAUSE CONTAMINATION OF STORMWATER. WOODY DEBRIS MAY BE CHOPPED AND SPREAD ON SITE.
- 17. USE SPILL PREVENTION MEASURES, SUCH AS DRIP PANS, WHEN CONDUCTING MAINTENANCE AND REPAIR OF VEHICLES AND EQUIPMENT.
- 18. REPORT SPILLS MONDAY THROUGH FRIDAY, 7:00 A.M. TO 3:30 P.M. (360) 491-5644. AFTER HOURS, YOU CAN LEAVE A VOICEMAIL AT THE NUMBER ABOVE, OR SELECT THE OPTION TO BE CONNECTED TO THURSTON COUNTY CENTRAL DISPATCH, WHO WILL NOTIFY THE CITY'S STAND-BY SPILL RESPONSE STAFF.
- 19. WATER FROM DEWATERING OPERATIONS SHALL BE DISCHARGED INTO A SEDIMENT TRAP. CLEAN, NON—TURBID WATER MAY BE DISCHARGED TO SURFACE WATERS, PROVIDED THE DISCHARGE DOES NOT CAUSE EROSION OR FLOODING. HIGHLY TURBID OR CONTAMINATED DEWATERING WATER FROM CONSTRUCTION EQUIPMENT OPERATION, CLAMSHELL DIGGING, CONCRETE TREMIE POUR, OR WORK INSIDE A COFFERDAM SHALL BE HANDLED SEPARATELY FROM STORM WATER AND PROPERLY DISPOSED.
- 20. QUARRY SPALLS USED FOR OUTLET PROTECTION SHALL MEET THE REQUIREMENTS OF SECTION 9-13 OF THE MOST RECENT WSDOT STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION. INSTALLATION SHALL MEET THE REQUIREMENTS OF SECTION 8-15 AND THE OUTLET PROTECTION NOTES ON SHEET D1.
- 21. DISTURBED AREA: 0.27 AC
 - UNDISTURBED AREA: 2.65 AC



CITY OF LACEY, WASHINGTON DEPARTMENT OF PUBLIC WORKS

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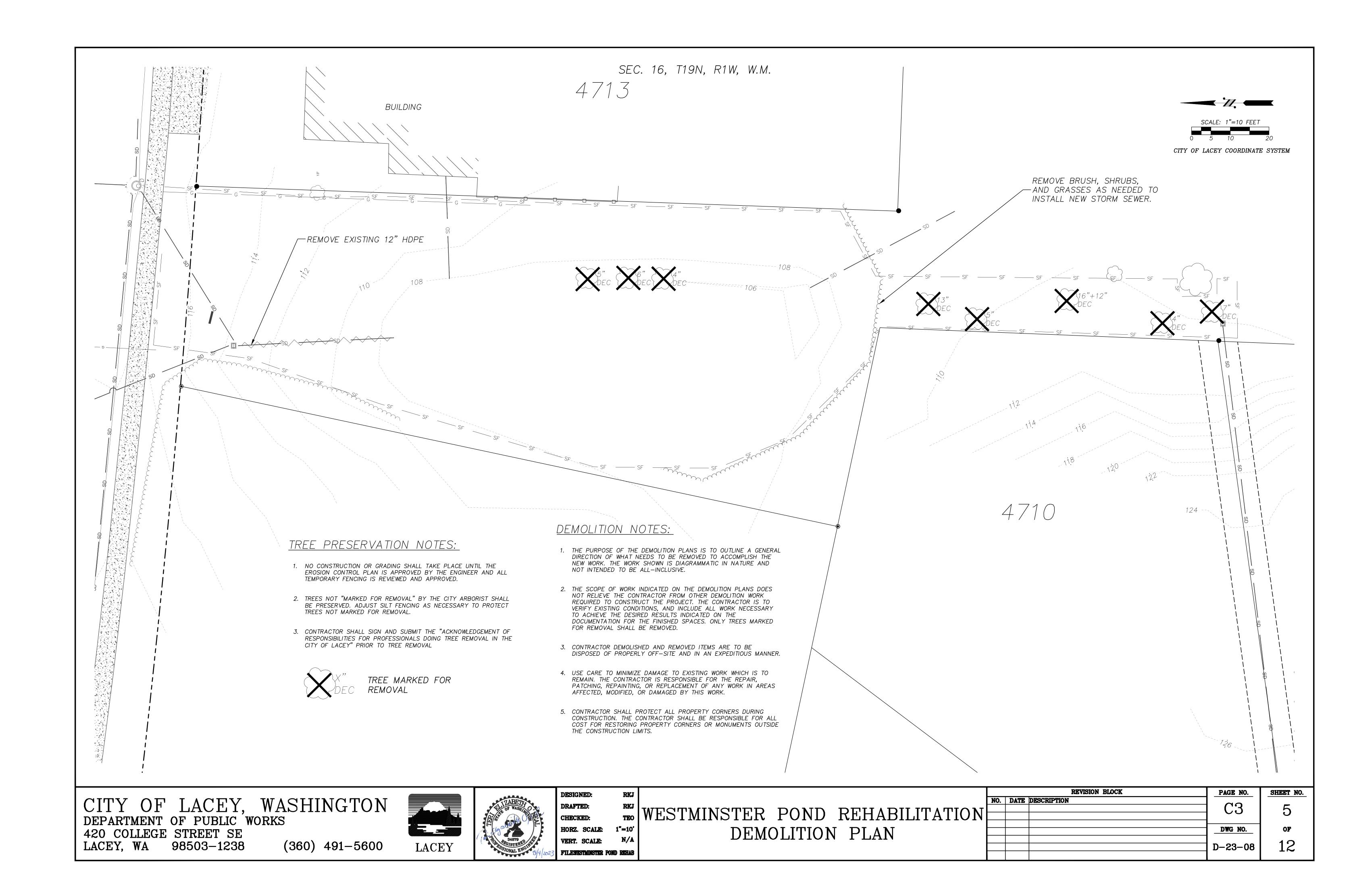
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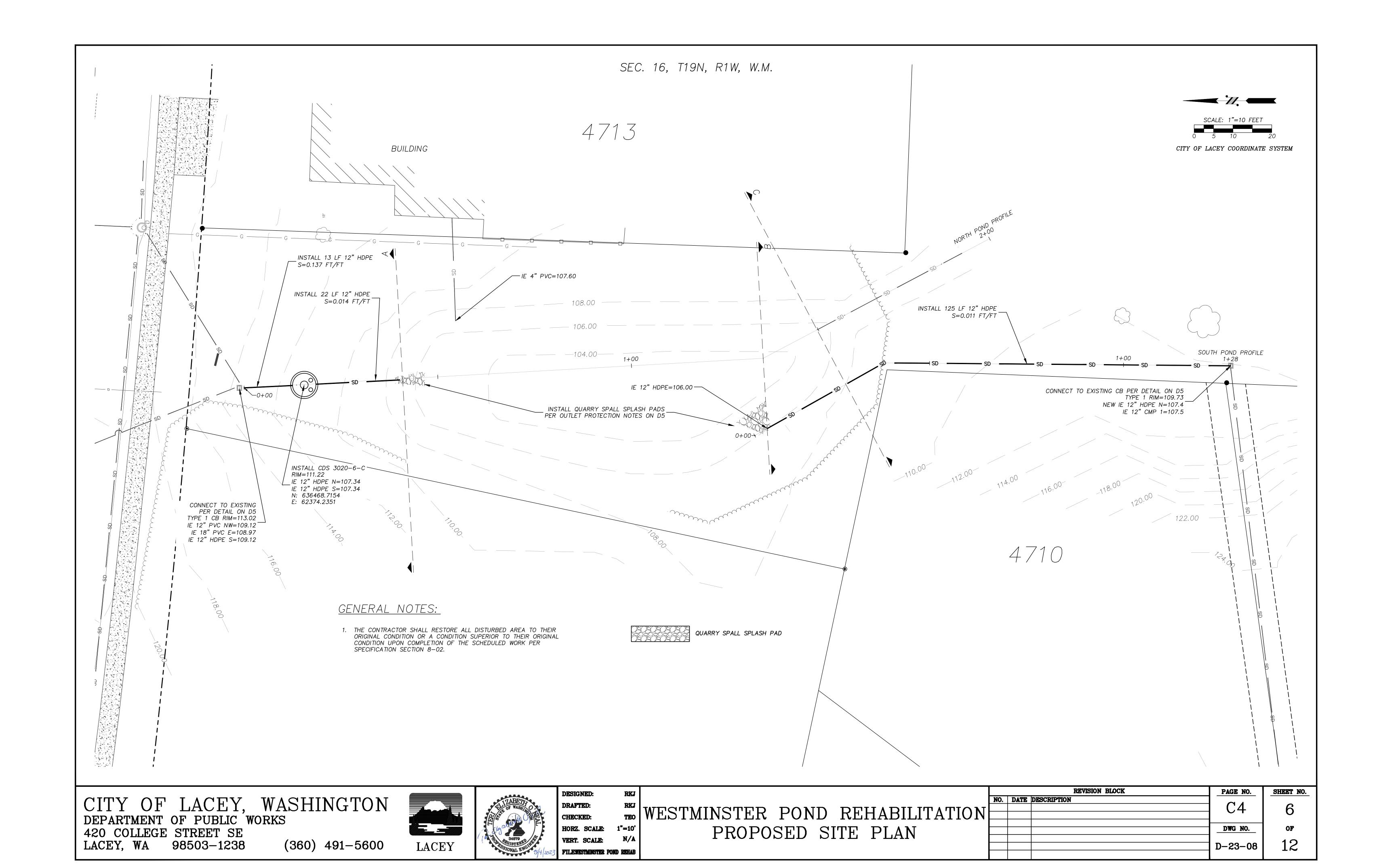


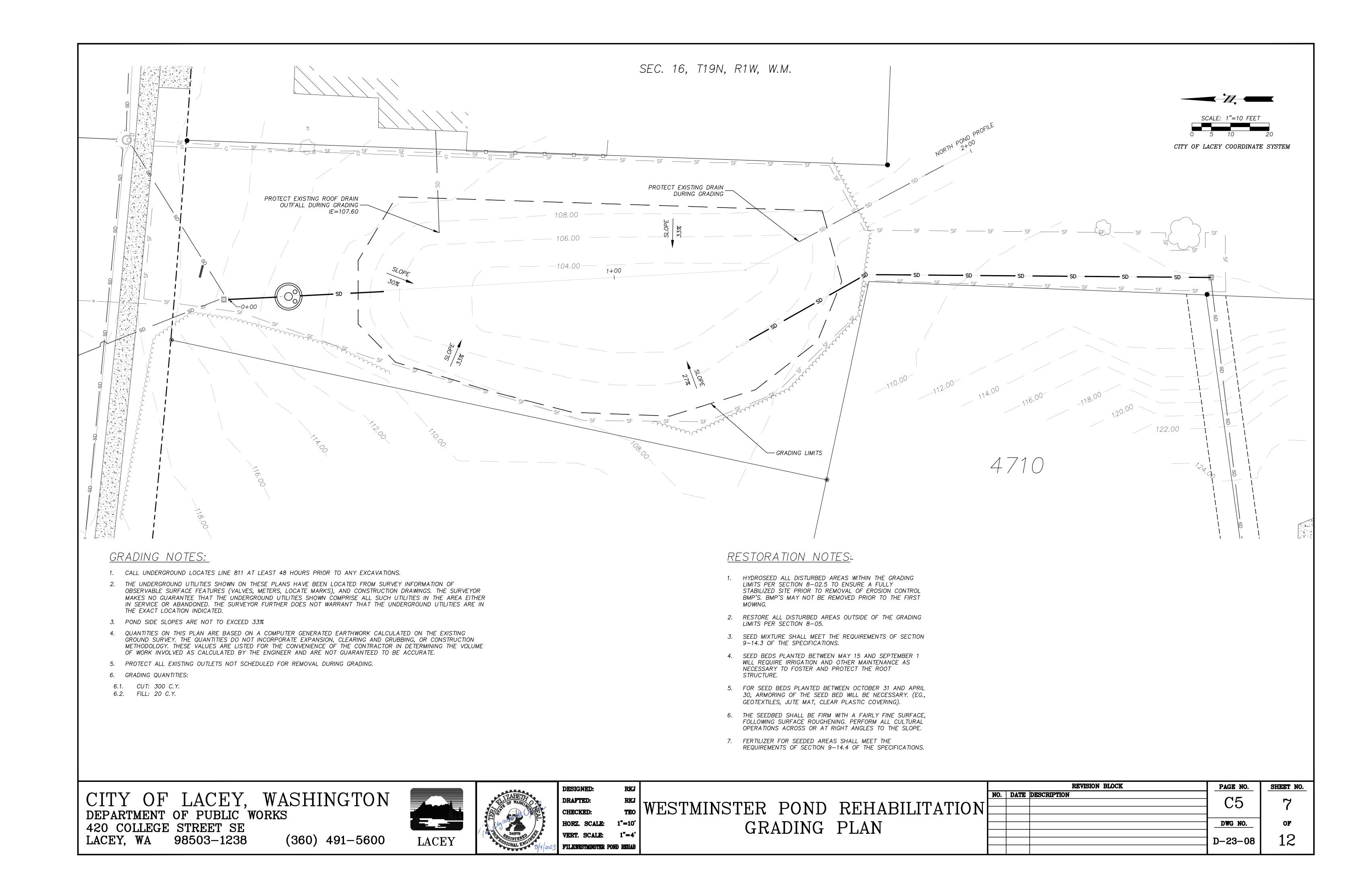
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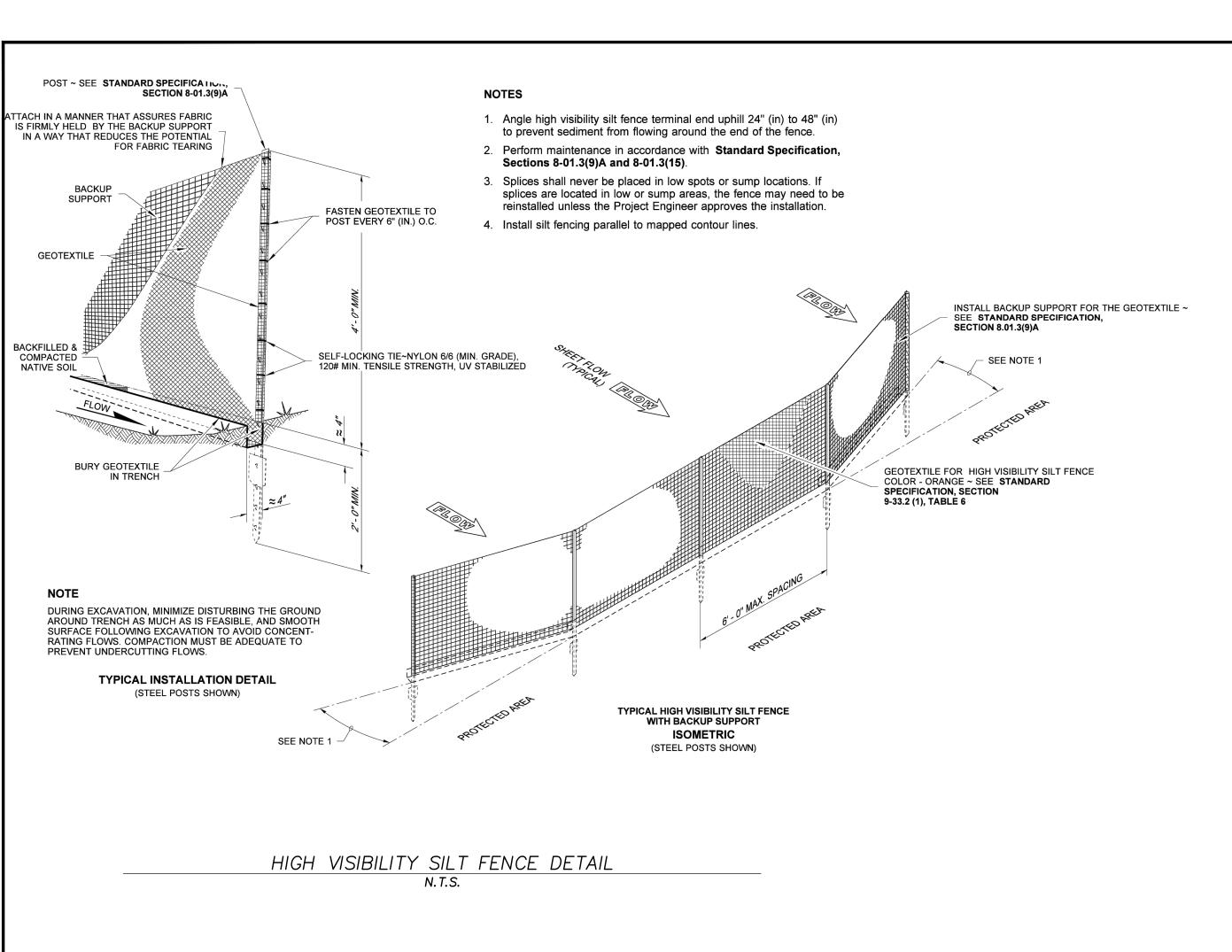
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HORZ. SCALE: 1"=10'
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WESTMINSTER POND REHABILITATION EROSION & SEDIMENT CONTROL PLAN









MINIMUM 12" OVERLAP
OF SEAMS.

SEE NOTE NO. 3

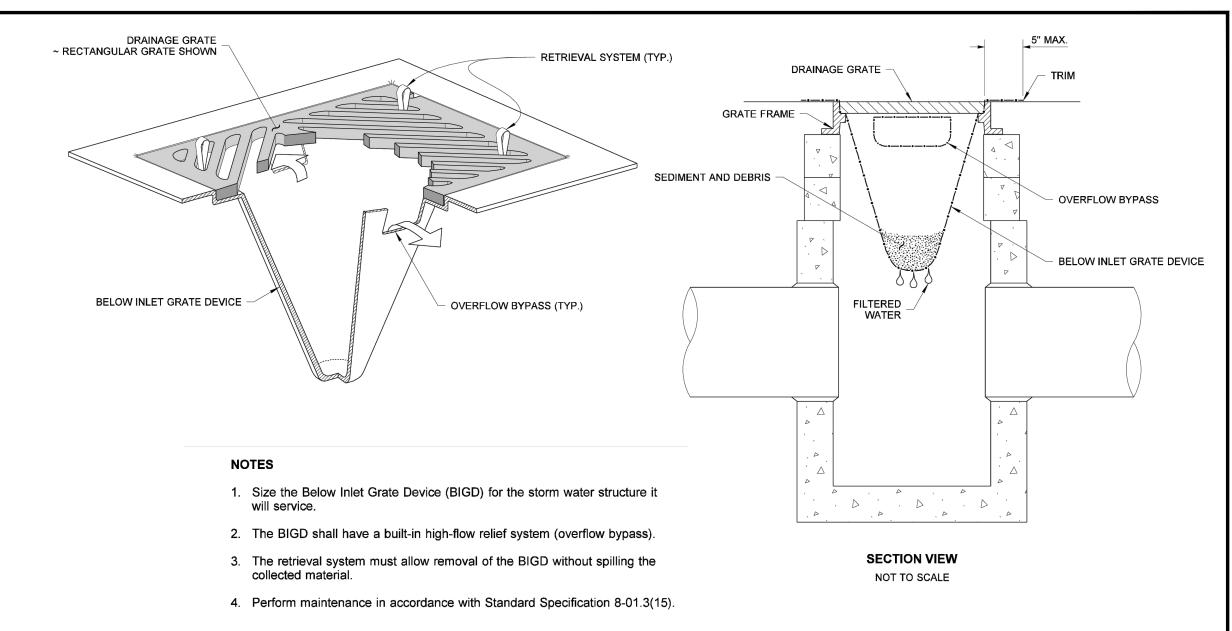
EROSION CONTROL BARRIER
REQUIRED © TOE OF SLOPE.

PLASTIC SHEETING NOTES:

- 1. PLASTIC SHEETING SHALL HAVE A MINIMUM THICKNESS OF 6 MILLS AND SHALL MEET
- THE REQUIREMENTS OF STANDARD SPECIFICATIONS SECTION 9—14.5.

 2. CLEAR PLASTIC COVERING SHALL BE INSTALLED IMMEDIATELY ON AREAS SEEDED BETWEEN NOVEMBER 1 AND MARCH 31 AND REMAIN UNTIL VEGETATION IS FIRMLY
- 3. COVERING SHALL BE INSTALLED AND MAINTAINED TIGHTLY IN PLACE BY USING SANDBAGS OR TIRES ON ROPES WITH A MAXIMUM 10—FOOT GRID SPACING IN ALL DIRECTIONS. ALL SEAMS SHALL BE TAPED OR WEIGHED DOWN FULL LENGTH AND THERE SHALL BE AT LEAST A 12 INCH OVERLAP OF ALL SEAMS.
- 4. WHEN COVERING IS USED ON UN—SEEDED SLOPES IT SHALL BE KEPT IN PLACE UNTIL THE NEXT SEEDING PERIOD.
- 5. PLASTIC COVERING SHEETS SHALL BE BURIED TWO FEET AT THE TOP OF SLOPES IN ORDER TO PREVENT SURFACE WATER FLOW BENEATH SHEETS.
- 6. PROPER MAINTENANCE INCLUDES REGULAR CHECKS FOR RIPS AND DISLODGED ENDS.

PLASTIC SHEETING DETAIL
N.T.S.



INLET PROTECTION DETAIL
N.T.S.

Back of Sidewalk

RUNOFF SPILLWAY

Burlap Sacks to

Overlap onto Curb

Catch Basin

Back of Curb

NOTES:

1. Place curb type sediment barriers on gently sloping street segments, where water can pond and allow sediment to separate from runoff.

Gravel Filled Sandbags

Stacked Tightly

- 2. Sandbags of either burlap or woven 'geotextile' fabric, are filled with gravel, layered and packed tightly.
- 3. Leave a one sandbag gap in the top row to provide a spillway for overflow.
- 4. Inspect barriers and remove sediment after each storm event. Sediment and gravel must be removed from the traveled way immediately.

CURB INLET PROTECTION DETAIL

N.T.S.

CONSTRUCTION ENTRANCE NOTES:

- 1. THE ROCK PAD SHALL BE AT LEAST 12 INCHES THICK AND 100 FEET LONG. WIDTH SHALL BE AT LEAST 15 FEET AND BE THE FULL WIDTH OF THE VEHICLE INGRESS AND EGRESS AREA. SMALLER PADS MAY BE APPROVED WHERE REQUIRED SIZE IS IMPRACTICAL
- 2. FOR SINGLE—FAMILY RESIDENTIAL LOTS PAD MAY BE REDUCED IN LENGTH TO FIT SITE, TO NO LESS THAN 20 FEET LONG, 10 FEET WIDE, AND 6 INCHES THICK WITH 4—INCH TO 8—INCH QUARRY SPALLS.
- 3. MATERIAL SHALL BE 4" TO 8" QUARRY SPALLS. DO NOT USE BROKEN/CRUSHED CONCRETE, CEMENT, OR CALCIUM CHLORIDE.

4. A SEPARATION GEOTEXTILE SHALL BE PLACED UNDER

- THE SPALLS TO PREVENT FINE SEDIMENT FROM PUMPING UP INTO THE ROCK PAD. THE GEOTEXTILE SHALL MEET THE FOLLOWING STANDARDS:
- a. GRAB TENSILE STRENGTH (ASTM D4751): 200 PSI
- b. GRAB TENSILE ELONGATION (ASTM D4632): 30 PERCENT MAXIMUM

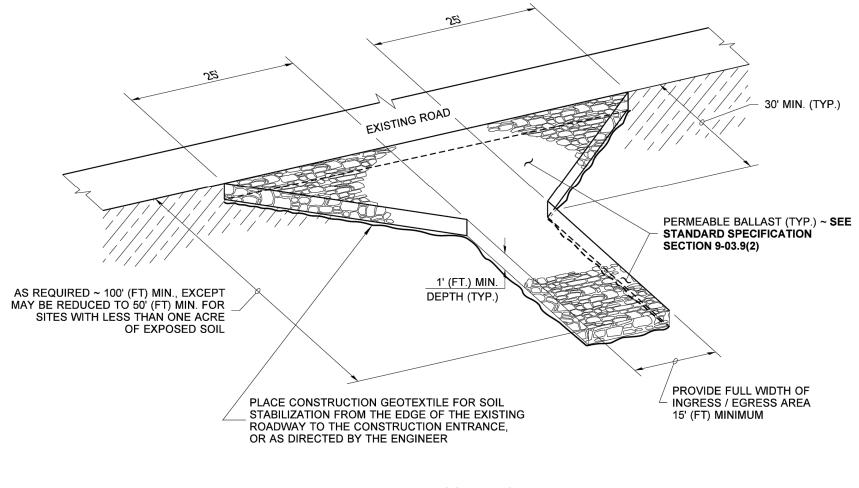
d. AOS (ASTM D4751): 20 TO 45 (U.S. STANDARD

- c. MULLEN BURST STRENGTH (ASTM D3786-80A): 400
 PSI MINIMUM
- 5. ADDITIONAL QUARRY SPALLS SHALL BE ADDED PERIODICALLY TO MAINTAIN PROPER FUNCTION OF

SIEVE SIZE)

6. IF THE ENTRANCE IS NOT PREVENTING SEDIMENT FROM BEING TRACKED ONTO PAVEMENT, THEN ALTERNATIVE MEASURES TO KEEP THE STREETS FREE OF SEDIMENT SHALL BE USED. THIS MAY INCLUDE REPLACEMENT/CLEANING OF THE EXISTING QUARRY SPALLS, AN INCREASE IN THE DIMENSIONS OF THE

ENTRANCE, OR THE INSTALLATION OF A WHEEL WASH.



ISOMETRIC VIEW

STABILIZED CONSTRUCTION ENTRANCE

STABILIZED CONSTRUCTION ENTRANCE SHALL MEET THE REQUIREMENTS
OF STANDARD SPECIFICATION SECTION 8-01.3(7).

CONSTRUCTION ENTRANCE DETAIL
N.T.S.

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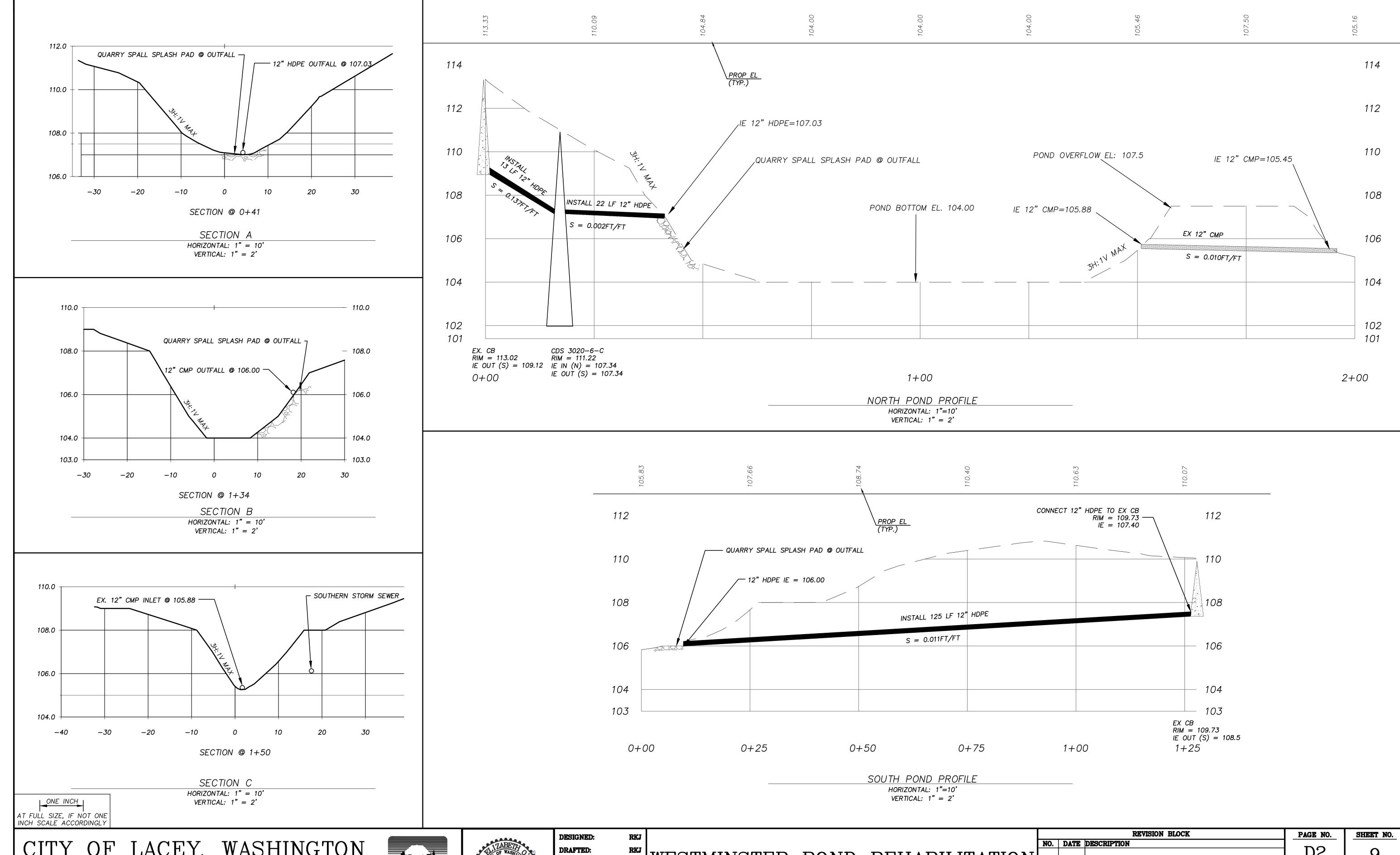


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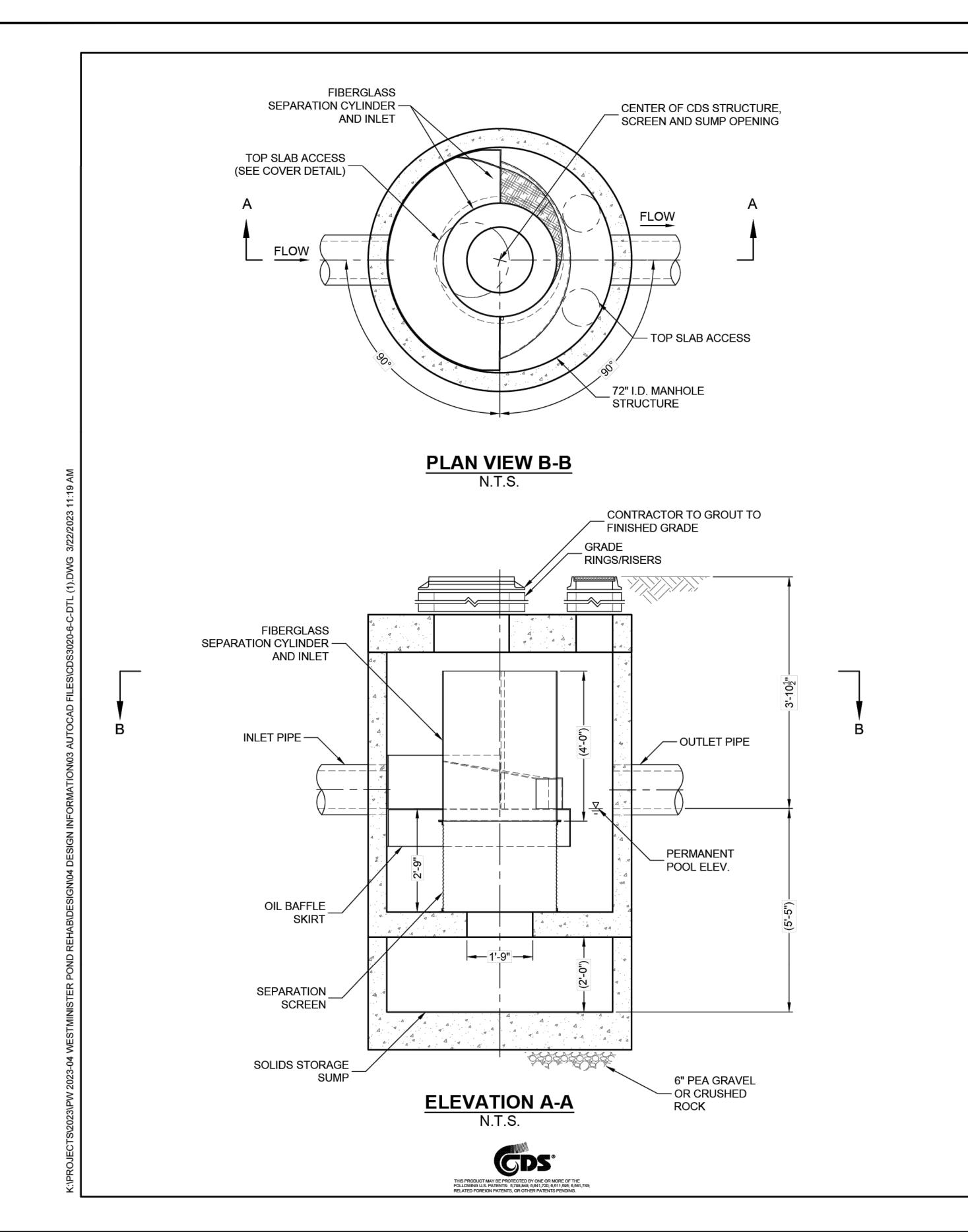
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WESTMINSTER POND REHABILITATION 1"=10' SECTIONS & PROFILES

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CDS3020-6-C DESIGN NOTES

THE STANDARD CDS3020-6-C CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

CONFIGURATION DESCRIPTION

GRATED INLET ONLY (NO INLET PIPE)

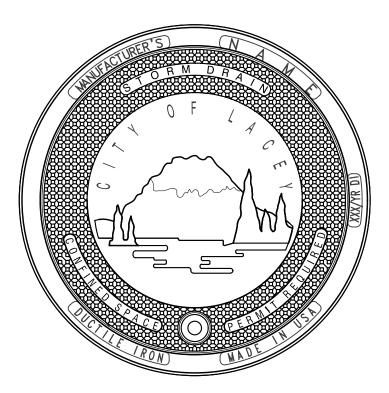
GRATED INLET WITH INLET PIPE OR PIPES

CURB INLET ONLY (NO INLET PIPE)

CURB INLET WITH INLET PIPE OR PIPES

SEPARATE OIL BAFFLE (SINGLE INLET PIPE REQUIRED FOR THIS CONFIGURATION)

SEDIMENT WEIR FOR NJDEP / NJCAT CONFORMING UNITS



(24" DIAMETER) N.T.S.

SITE SPECIFIC DATA REQUIREMENTS

L	STRUCTURE ID					
	WATER QUALITY FLOW RATE (CFS OR L/s)					
	PEAK FLOW RAT	E (CFS OR I	_/s)	1		7 CFS
	RETURN PERIOD	OF PEAK F	LO	W (YRS)		*
	SCREEN APERTU	JRE (2400 C)R 4	1700)		2400
F						
L	PIPE DATA:	I.E.		MATERIAL	D	IAMETER
L	INLET PIPE 1	107.34		HDPE		12"
	INLET PIPE 2	T PIPE 2 N/A N/A			N/A	
	OUTLET PIPE 107.34 HDPE				12"	
F						
L	RIM ELEVATION					111.22'
Ę						
1	ANTI-FLOTATION BALLAST WIDTH					HEIGHT
L				*		*
ſ	NOTES/SPECIAL	REQUIREM	ΕN	TS:		

* PER ENGINEER OF RECORD

- 1. THE PROVIDED DETAILS APPLY TO CONTECH'S CDS 3020-6-C INLINE STORMWATER TREATMENT DEVICE. THE CONTRACTOR MAY SUBMIT AN ALTERNATIVE DEVICE FOR APPROVAL PER SECTION E OF THE SPECIFICATIONS. IF AN EQUAL IS APPROVED, INSTALLATION SHALL BE PER THE MANUFACTURERS INSTRUCTIONS.
- CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
- 3. DIMENSIONS MARKED WITH () ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY
- 4. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTECT YOUR CONTECH ENGINEERED SOLUTIONS LLC
- 5. STRUCTURE SHALL MEET AASHTO HS20 AND CASTINGS SHALL MEET HS20 (AASHTO M 306) LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
- 6. PVC HYDRAULIC SHEAR PLATE IS PLACED ON A SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE

INSTALLATION NOTES

- A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
- B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE
- (LIFTING CLUTCHES PROVIDED)
- C. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
- E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. ALL JOINTS BELOW PIPE INVERTS SHALL BE GROUTED

CDS3020-6-C **INLINE CDS** STANDARD DETAIL

CITY OF LACEY, WASHINGTON DEPARTMENT OF PUBLIC WORKS

420 COLLEGE STREET SE

LACEY, WA

98503-1238 (360) 491-5600

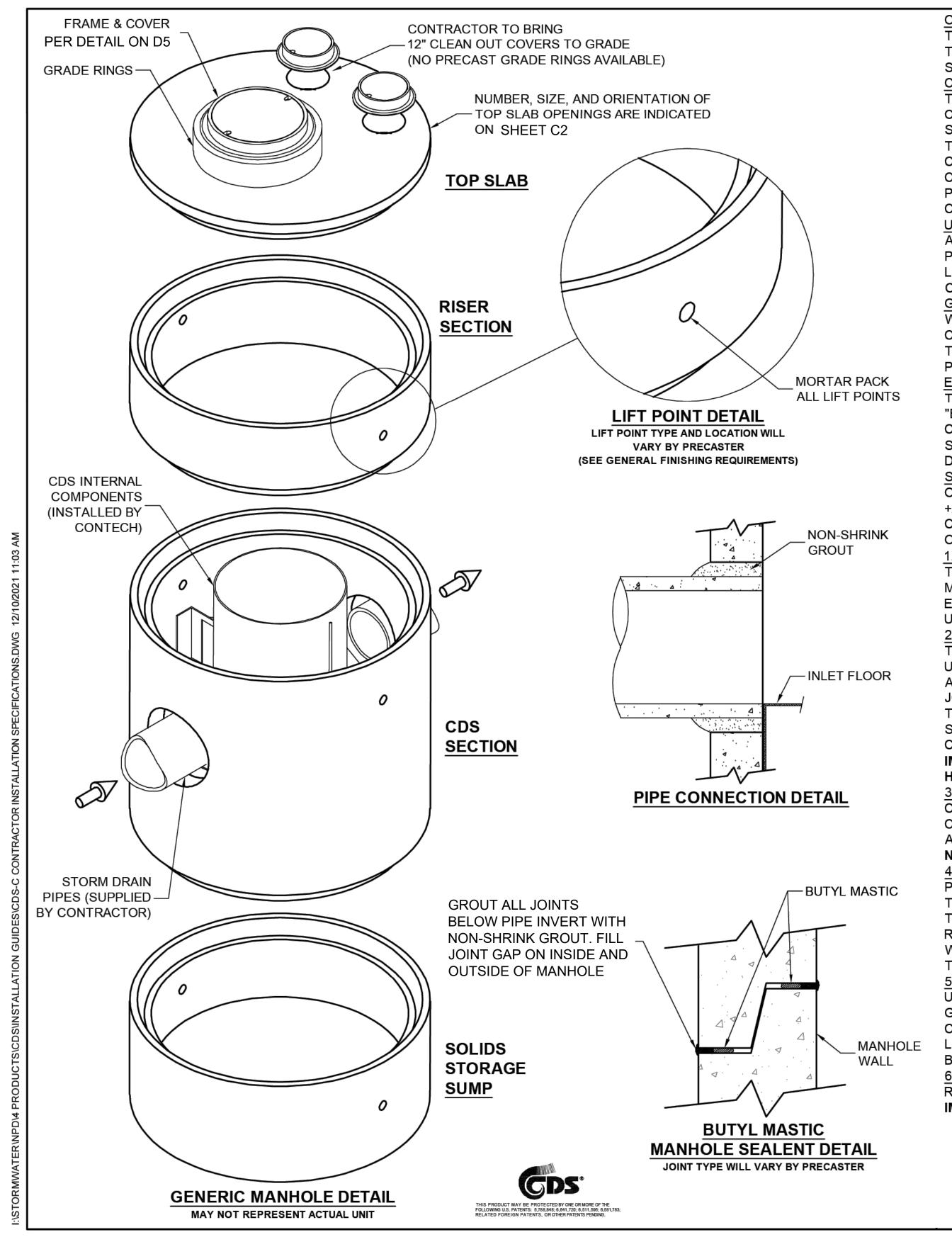




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WESTMINSTER POND REHABILITATION CDS DETAIL 1

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OVERVIEW:

THESE INSTRUCTIONS PROVIDE GUIDELINES AND INSTRUCTIONS FOR SETTING THE PRECAST CONCRETE MANHOLE SECTIONS THAT MAKE UP THE CDS-C STYLE WATER QUALITY SYSTEM. BEFORE STARTING THE INSTALLATION, BE SURE YOU HAVE ALL THE COMPONENTS, TOOLS, AND SUPPLIES NECESSARY TO COMPLETE THE WORK.

CRANE SELECTION:

THE CONTRACTOR IS RESPONSIBLE FOR SELECTING THE APPROPRIATE EQUIPMENT TO UNLOAD AND SET THE CDS MANHOLE SECTIONS. CONTECH WILL PROVIDE THE CONTRACTOR WITH THE WEIGHTS OF THE PRECAST SECTIONS. A REPRESENTATIVE FROM THE CRANE COMPANY SHOULD VISIT THE JOBSITE AND REVIEW PERTINENT INFORMATION (SHOP DRAWINGS, WEIGHTS, ETC) PRIOR TO THE SELECTION OF THE CRANE. THE CRANE REPRESENTATIVE AND/OR CONTRACTOR SHOULD DETERMINE THE DISTANCE FROM CENTER OF THE CRANE'S POSITION TO THE CENTER OF THE FINAL POSITION OF THE PRECAST UNITS. THE WEIGHT AND THE DISTANCE FROM THE CENTER OF THE CRANE'S POSITION TO THE CENTER OF THE FINAL POSITION OF THE PRECAST UNITS DETERMINE THE CRANE SIZE. LOCATE THE CRANE AS CLOSE TO THE INSTALLATION AS POSSIBLE AND FOLLOW ALL RECOMMENDATIONS OF THE CRANE SUPPLIER. THE STAGING AREA FOR THE CRANE MUST BE STABILIZED AND CRANE SUPPLIER SHOULD BE PREPARED TO SUPPLY OUTRIGGER MATS.

UNLOADING AND HANDLING:

ANY UNLOADING/HANDLING SUGGESTIONS OR GUIDANCE IS BEYOND CONTECH'S SCOPE OF WORK BUT CAN BE OBTAINED FROM THE PRECASTER. CONTACT CONTECH IF CONTACT INFORMATION FOR THE PRECASTER IS NEEDED. THE PRECAST MANHOLE COMPONENTS WILL HAVE LIFTING POINTS OR DEVICES CAST-INTO THE VARIOUS PIECES AND WILL BE DELIVERED TO THE PROJECT SITE VIA FLATBED TRANSPORT. THE CONTRACTOR SHALL PROVIDE EQUIPMENT AT THE SITE THAT HAS ADEQUATE LIFTING CAPACITY TO UNLOAD THE PRECAST COMPONENTS. GENERAL FINISHING REQUIREMENTS:

WHERE CAVITIES WERE CREATED FOR LIFTING, SAID CAVITIES SHALL BE PACKED WITH NON-SHRINK GROUT AND FINISHED TO CONFORM TO THE SURFACE THAT WOULD HAVE OTHERWISE EXISTED. WHERE PROTRUDING CABLE LOOPS HAVE BEEN PROVIDED FOR LIFTING, THOSE LOOPS SHALL BE CUT FLUSH WITH THE FINISHED SURFACE. ALL WORK THROUGHOUT THE INSTALLATION SHALL BE COMPLETED IN A PROFESSIONAL STANDARD NORMALLY EXPECTED FOR THE CLASS OF WORK BEING PERFORMED.

EXCAVATION, DEWATERING AND SHORING:

THE CONTRACTOR SHALL EXCAVATE, DEWATER AND SHORE IN ACCORDANCE WITH THE APPLICABLE PROJECT SPECIFICATIONS FOR "EXCAVATION AND BACK-FILL", "DEWATERING AND SHORING", AS PROVIDED BY THE ENGINEER TO ENSURE A SAFE WORKING ENVIRONMENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEASURING THE ACTUAL HEIGHT OF THE PRECAST CONCRETE COMPONENTS DELIVERED TO THE SITE PRIOR TO INSTALLING ANY PORTION OF THE CDS UNIT TO VERIFY THE REQUIRED DEPTH OF EXCAVATION BELOW PIPE INVERT MATCHES THE DEPTH GIVEN ON THE CONTECH PROJECT SPECIFIC CONTRACT DRAWING.

SUB-GRADE PREPARATION:

ONCE SITE IS EXCAVATED TO THE CORRECT DEPTH, COMPACT THE UNDISTURBED SUB-GRADE MATERIALS TO 95% OF MAXIMUM DENSITY AT +/-2% OF OPTIMUM MOISTURE CONTENT PRIOR TO PLACEMENT OF CRUSHED ROCK. THE CRUSHED ROCK SUBGRADE MATERIAL SHALL BE COMPOSED TO WITHSTAND A DESIGN LOADING OF 2,000 POUNDS PER SQUARE FOOT (PSF). IT IS RECOMMENDED THAT THE HOLE BE OVER-EXCAVATED A MINIMUM OF 6" AND BACKFILLED WITH AGGREGATE BASE AND COMPACTED TO 95% TO MAKE SUBGRADE.

1. SUMP INSTALLATION

THE CDS MANHOLE SHALL BE SET IN THE LOCATION SHOWN ON THE PROJECT SPECIFIC SITE PLANS AND ALIGNED WITH THE CENTERLINE OF THE MAIN STORM DRAIN PIPE. START BY SETTING THE SUMP BASE SECTION ON THE PREPARED SUB-GRADE AND CHECK FOR PLUMB AND LEVEL. ENSURE JOINT SURFACE IS CLEAN AND DRY THEN PLACE A LAYER OF BUTYL MASTIC MANHOLE SEALANT (SUPPLIED BY CONTECH) ON BOTH UPPER AND LOWER SHELVES OF THE SUMP BASE TONGUE & GROOVE JOINT (SEE BUTYL MASTIC MANHOLE SEALANT DETAIL).

2. CDS SECTION INSTALLATION

THE CDS SECTION IS DELIVERED TO THE PROJECT SITE WITH ALL INTERNAL COMPONENTS PRE-INSTALLED BY CONTECH. IF THE SIZE OF THE CDS UNIT REQUIRES THAT INTERNAL COMPONENT INSTALLATION BE PERFORMED AT THE PROJECT SITE, CONTECH WILL MAKE APPROPRIATE ARRANGEMENTS WITH THE CONTRACTOR PRIOR TO THE INSTALLATION OF THE MANHOLE. PLACE BUTYL MASTIC MANHOLE SEALANT ON THE TOP JOINT IN THE SAME MANNER AS THE SUMP BASE. THE CDS SECTION RISER SHALL BE SET WITH THE PROPER ORIENTATION TO THE STORM DRAIN TO ENSURE CORRECT ALIGNMENT OF THE INLET AND OUTLET PIPE OPENINGS. IF THE INLET AND OUTLET OPENINGS ARE REVERSED, THE STORMWATER TREATMENT UNIT WILL NOT FUNCTION. IF IT IS UNCLEAR WHICH OPENING IS INLET AND WHICH OPENING IS OUTLET, PLEASE CONTACT YOUR CONTECH REPRESENTATIVE BEFORE PROCEEDING.

IMPORTANT: APPLY LOAD TO MANHOLE SECTIONS TO COMPRESS BUTYL MASTIC SEALANT IF NECESSARY. UNIT MUST BE WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. GROUT ALL JOINTS BELOW PIPE INVERT.

3. STORM DRAIN PIPE CONNECTION

CONTRACTOR TO PROVIDE, INSTALL, AND GROUT STORM DRAIN PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN ON THE CONTECH CONTRACT DRAWINGS. SUPPORT THE INLET AND OUTLET PIPES IN THE CORRECT LOCATION, THEN USING NON-SHRINK GROUT, SEAL THE VOIDS AROUND THE PIPES AND MANHOLE WALLS. IMPORTANT: INLET PIPE INVERT MUST BE AT OR ABOVE THE FLOOR OF THE INLET TROUGH SO THAT NO FIBERGLASS BLOCKS THE FLOW OF WATER INTO THE UNIT.

4. ADDITIONAL RISERS AND TOP SLAB INSTALLATION

PLACE ANY REMAINING MANHOLE SECTIONS TO BRING THE CDS UNIT TO THE CORRECT HEIGHT. ENSURE JOINT SURFACE IS CLEAN AND DRY THEN PLACE A LAYER OF BUTYL MASTIC MANHOLE SEALANT (SUPPLIED BY CONTECH) ON BOTH UPPER AND LOWER SHELVES OF ALL REMAINING TONGUE & GROOVE JOINTS. AFTER PLACING BUTYL MASTIC ON THE TOP JOINT OF THE LAST RISER SECTION, INSTALL THE MANHOLE TOP SLAB. ROTATE THE TOP SLAB TO THE CORRECT LOCATION AS SHOWN ON THE CONTECH CONTRACT DRAWINGS. GRADE RINGS, FRAMES & COVERS WILL BE PROVIDED FOR EACH TOP ACCESS OPENING TO BRING THE UNIT TO FINISHED GRADE. SOME GROUT MAY STILL BE REQUIRED TO BRING THE FRAME & COVER TO GRADE IF A GAP REMAINS AFTER THE GRADE RINGS ARE INSTALLED.

UPON COMPLETION OF THE CDS UNIT INSTALLATION, THE EXCAVATION SHALL BE BACKFILLED WITH AN AGGREGATE BASE MATERIAL, PEA GRAVEL, OR CONTROLLED DENSITY CEMENT BACKFILL. THE AGGREGATE BASE MATERIAL SHALL BE COMPACTED TO A MINIMUM OF 90% COMPACTION OR AS SPECIFIED BY THE ENGINEER WHEN TESTED BY ASTM DESIGNATION A1557, UNLESS THE CDS UNIT IS TO RECEIVE TRAFFIC LOADINGS WHEREBY THE FOLLOWING CONDITIONS SHALL APPLY: FOR CDS UNITS INSTALLED IN A TRAVEL WAY, THE UPPER TWO FEET OF BACKFILL SHALL BE AGGREGATE BASE COMPACTED TO 95% (MINIMUM).

6. SITE CLEANUP

REMOVE ALL MATERIAL AND DEBRIS FROM THE INLET, SEPARATION CYLINDER, AND SUMP UPON COMPLETION OF INSTALLATION. IMPORTANT: PRIOR TO PROJECT COMPLETION, CONTRACTOR SHALL FILL CDS UNIT WITH WATER TO FLOWLINE INVERT.

CDS CONCENTRIC
PRECAST CONCRETE WATER QUALITY MANHOLE
CONTRACTOR INSTALLATION SPECIFICATIONS

CITY OF LACEY, WASHINGTON

DEPARTMENT OF PUBLIC WORKS 420 COLLEGE STREET SE

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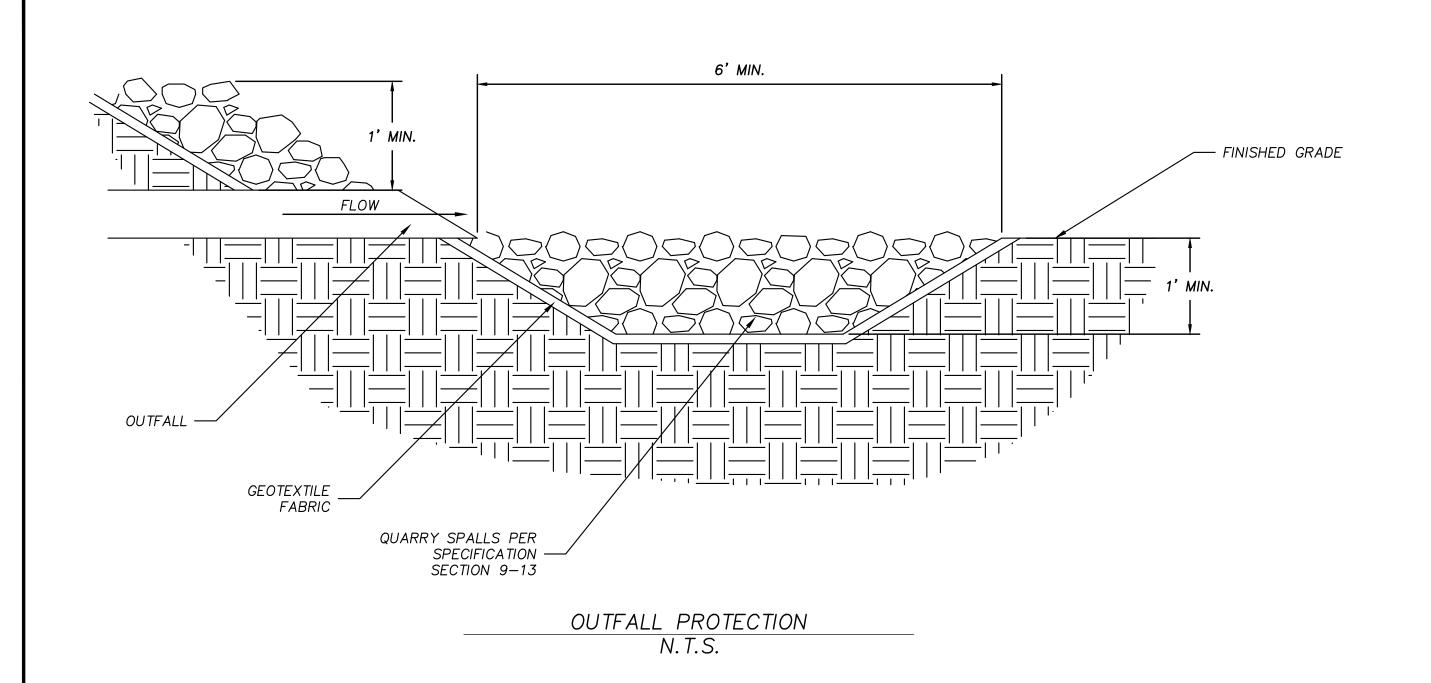


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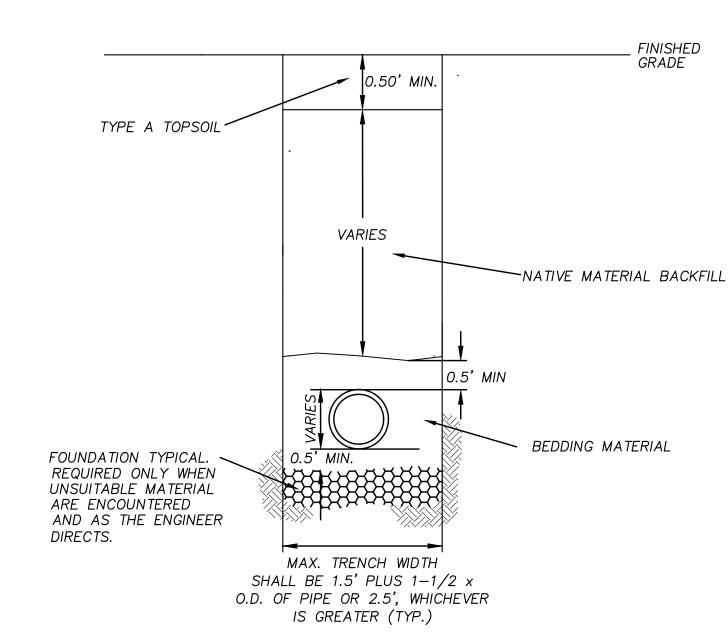
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OUTFALL PROTECTION NOTES:

- 1. PROTECT THE RECEIVING BODY FROM EROSION AT THE OUTLET OF A CULVERT BY ROCK LINING A MINIMUM OF 6 FEET DOWNSTREAM AND EXTENDING UP THE CHANNEL SIDES A MINIMUM OF 1 FOOT ABOVE THE OUTFALL PER THE DETAIL ON D5. THE SPLASH PAD SHALL BE A MINIMUM OF 1—FOOT THICK AND 4—FEET WIDE.
- MINIMUM OF 1 FOOT ABOVE THE OUTFALL PER THE DETAIL ON D5. THE SPLASH PAD SHALL BE A MINIMUM OF 1—FOOT THICK AND 4—FEET WIDE.

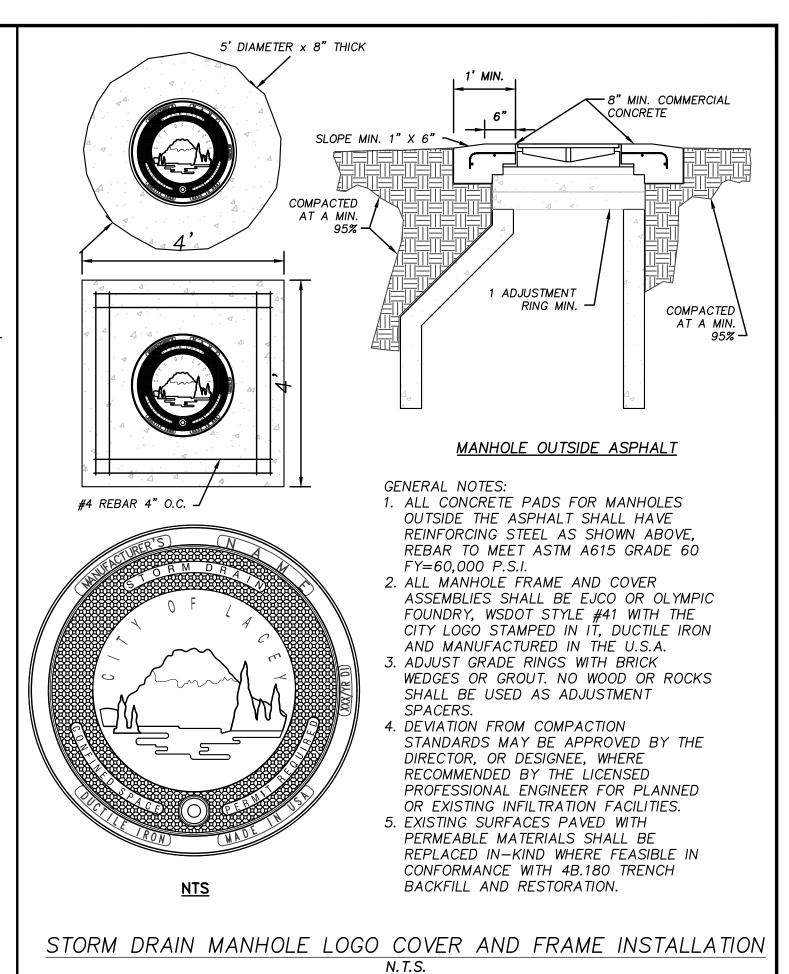
 2. QUARRY SPALLS AND RIP RAP USED FOR EROSION AND SCOUR PROTECTION SHALL MEET THE REQUIREMENTS OF SPECIFICATION SECTION 9—13.
- 3. PLACE FILTER FABRIC OR EROSION CONTROL BLANKETS UNDER QUARRY SPALLS TO PREVENT SCOUR AND CHANNEL EROSION.
- 4. BANK STABILIZATION AND BIOENGINEERING MAY BE REQUIRED FOR DISTURBED AREAS. 5. ADD ROCK AS NEEDED TO MAINTAIN EROSION PROTECTION.
- 6. REMOVE ANY ACCUMULATED SEDIMENT FROM THE QUARRY SPALLS.

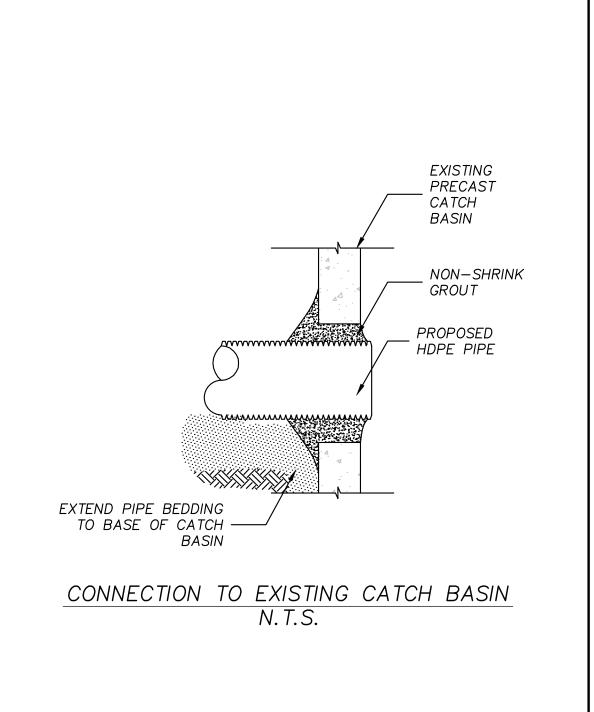


GENERAL NOTES:

- 1. ALL MATERIALS EXCEPT BEDDING MATERIAL SHALL BE COMPACTED IN 6—INCH MAXIMUM LIFTS TO 95% DENSITY AS DETERMINED BY ASTM D1557.
- 2. ALL MATERIALS, WORKMANSHIP, AND INSTALLATION SHALL BE IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION AS AMENDED BY CITY OF LACEY STANDARDS.
- 3. KEEP TRENCH BOTTOM COMPACTED WITH UNIFORM GRADE. NO TEMPORARY SUPPORTS, I.E. BLOCKS, WILL BE ALLOWED TO SUPPORT PIPE. TRENCH BOTTOM SHALL BE TO GRADE PRIOR TO PIPE INSTALLATION.
- 4. IN AREAS WHERE PIPE COVER DECREASES TO SUCH AN EXTENT THAT IT IS NOT FEASIBLE TO FOLLOW THIS DETAIL, DECREASE THE QUANTITY OF BEDDING MATERIAL BEFORE DECREASING THE QUANTITY OF TOPSOIL

TRENCH RESTORATION N.T.S.





CITY OF LACEY, WASHINGTON DEPARTMENT OF PUBLIC WORKS

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