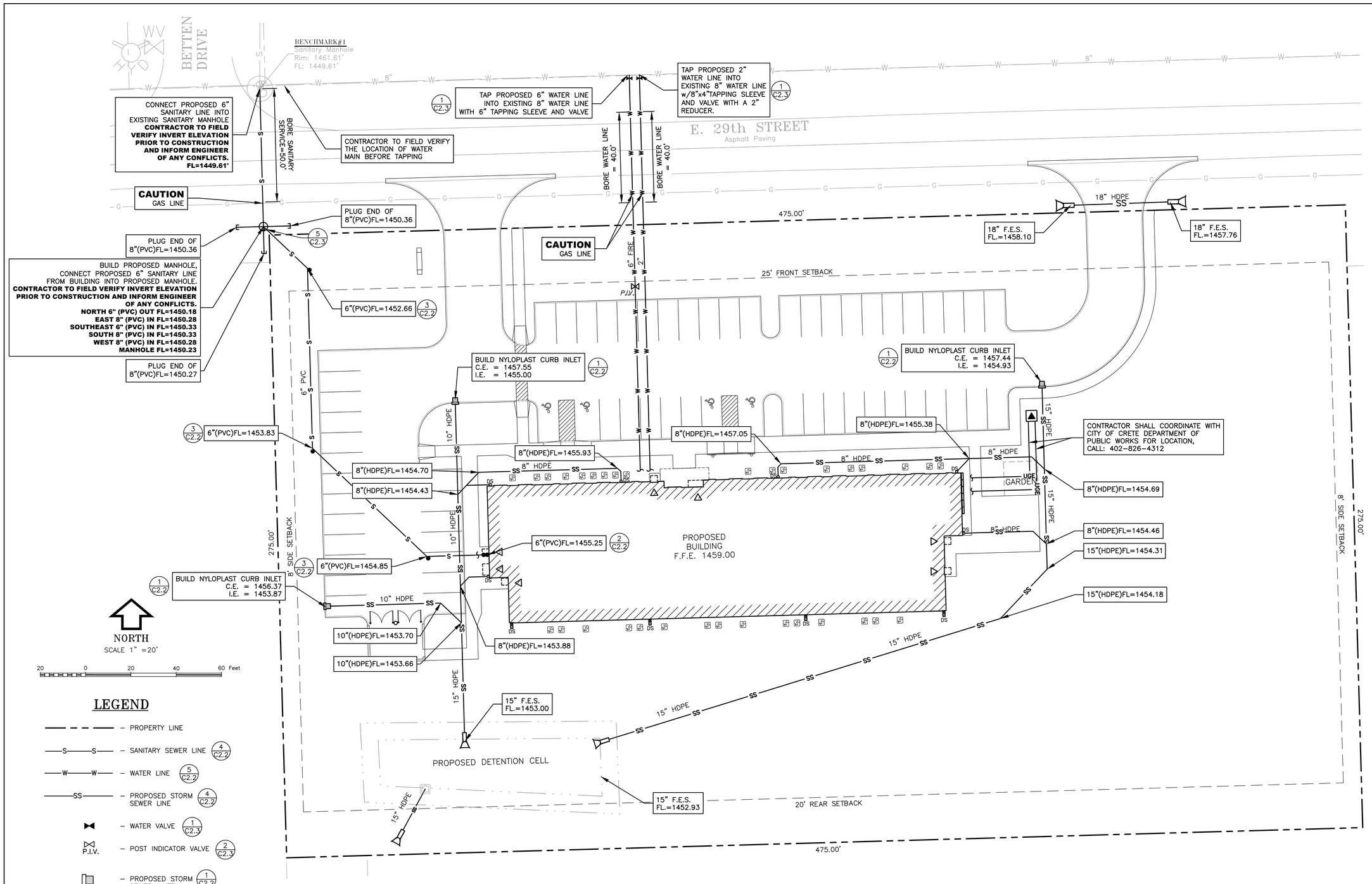

LEGEND

- PROPERTY LINE
- SANITARY SEWER LINE (4/C2.2)
- WATER LINE (5/C2.2)
- PROPOSED STORM SEWER LINE (4/C2.2)
- WATER VALVE (1/C2.3)
- P.I.V. – POST INDICATOR VALVE (2/C2.3)
- PROPOSED STORM SEWER INLET (1/C2.2)
- SANITARY CLEANOUT (3/C2.2) (2/C2.2)
- DS – DOWN SPOUTS WITH CONCRETE SPLASH BLOCKS (SEE ARCHITECTURAL PLANS)
- TRANSFORMER
- A/C UNITS
- SANITARY MAHOLE (4/C2.3)

SHEET NOTES:

1. ALL UTILITIES TERMINATE 5'-0" OUTSIDE BUILDING. FOR CONTINUATION INSIDE BUILDING, SEE MECH./ELEC. PLANS.

GENERAL UTILITY NOTES:

1. CONSTRUCTION FOR UTILITIES SHALL INCLUDE THE EXCAVATION OF ALL MATERIALS NECESSARY TO COMPLETE THE WORK IN ACCORDANCE WITH THE PLANS AND THE CITY OF CRETE SPECIFICATIONS; ALL NECESSARY SHEETING; SHORING AND BRACING; AND ANY PUMPING THAT MAY BE NECESSARY TO KEEP THE TRENCH FACE FROM WATER.
2. CONSTRUCTION FOR UTILITIES AND STRUCTURES SHALL INCLUDE THE REMOVAL AND REPLACEMENT OF PAVEMENT, DRIVEWAY, AND SIDEWALK. DISPOSAL OF SURPLUS MATERIALS, BORROW, MAINTENANCE AND PROTECTION OF EXCAVATION, AND THE RESTORATION OF ALL SURFACES TO A SATISFACTORY CONDITION.
3. DIMENSIONS SHOWN ARE TO THE CENTERLINE OF PIPES OR FITTINGS AND ARE FROM PROPERTY LINES, CENTERLINES OF DRIVEWAYS, BACK OF CURBS, AND EDGES OF SIDEWALK OR FACES OF WALLS.
4. UTILITY CONTRACTOR SHALL HAVE APPROVAL OF ALL GOVERNING AGENCIES HAVING JURISDICTION OVER THE SYSTEM PRIOR TO CONSTRUCTION.

BENCHMARK

BENCHMARK #1: SANITARY SEWER MANHOLE FOUND NORTHWEST OF SITE, EAST SIDE OF BETTEN DRIVE
RIM ELEVATION = 1449.61

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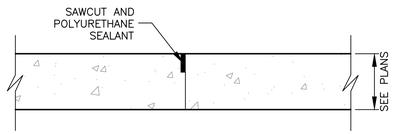
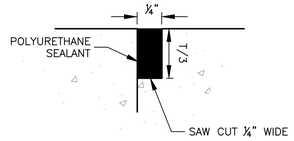
SHEET NO. C1.4

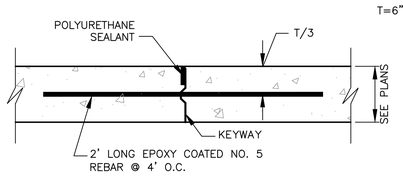
UTILITY PLAN



LONGITUDINAL/TRANSVERSE JOINT

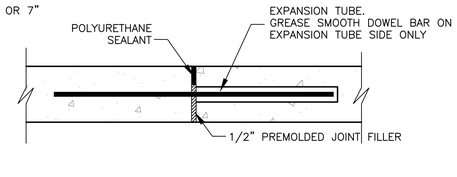


SAW CUT AND JOINT SEALANT



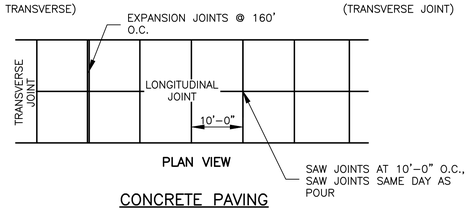
CONSTRUCTION JOINT

(LONGITUDINAL AND TRANSVERSE)



EXPANSION JOINT

(TRANSVERSE JOINT)

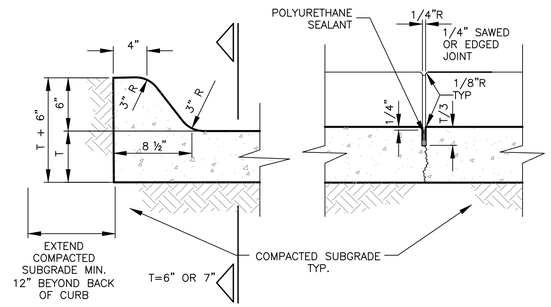


CONCRETE PAVING

NOTES:
1. PROVIDE EXPANSION JOINT IN CONCRETE PAVEMENT AND CURB AND GUTTER AT THE SAME LOCATION.
2. CONTRACTOR SHALL SEAL JOINTS WITH POLYURETHANE SEALANT, MEETING NDOT APPROVED PRODUCTS LIST.
3. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER, PRIOR TO CONSTRUCTION, A CONCRETE PAVEMENT JOINTING PLAN FOR REVIEW AND APPROVAL. MAXIMUM SPACING ON A TRANSVERSE JOINT SHALL BE DETERMINED BY THE THICKNESS OF PAVEMENT, CONTACT ENGINEER.

1 C2.0 CONCRETE PAVING JOINT DETAILS

NO SCALE



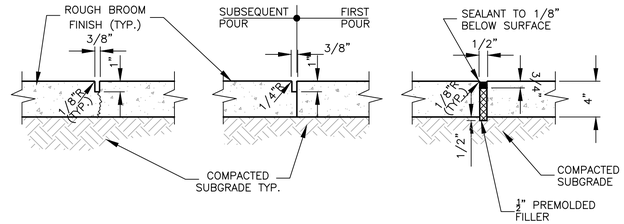
INTEGRAL CURB SECTION

SECTION CONTRACTION JOINT

NOTES:
1. CONTRACTOR SHALL SEAL JOINTS WITH POLYURETHANE SEALANT, MEETING NDOT APPROVED PRODUCTS LIST.

2 C2.0 INTEGRAL CURB DETAIL

NO SCALE



CONTRACTION JOINT

MAXIMUM SPACING = WIDTH OF THE WALK UNLESS INDICATED OTHERWISE ON PLANS

CONSTRUCTION JOINT

USE ONLY WHERE CONSTRUCTION JOINTS WOULD OCCUR

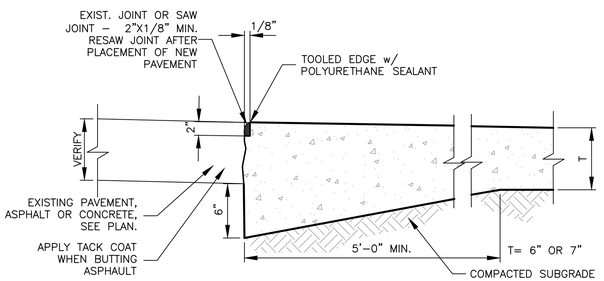
EXPANSION JOINT

SPACE AS SHOWN ON LAYOUT PLAN (@ 40' MAX.) AND WHERE ABUTTING ALL STRUCTURES, PAVEMENT AND CURBS

NOTES:
1. WHEN ABUTTING EXISTING SIDEWALK, MATCH EXISTING PATTERN LOCATION OF CONTROL AND EXPANSION JOINTS UNLESS OTHERWISE INDICATED.
2. PROVIDE 1/2" E.J. WITH SEALANT WHEN ABUTTING BACK OF CURB AND STRUCTURES.
3. ALL SIDEWALKS SLOPE AT 2% AWAY FROM BUILDING OR TOWARD CURBS UNLESS SHOWN OTHERWISE.
4. CONTRACTOR SHALL SEAL JOINTS WITH POLYURETHANE SEALANT, MEETING NDOT APPROVED PRODUCTS LIST.

3 C2.0 CONCRETE SIDEWALK JOINT DETAILS

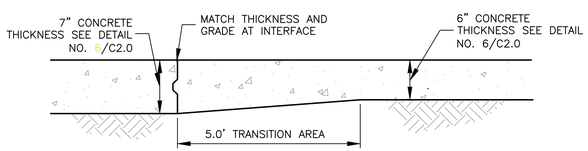
NO SCALE



NOTES:
1. CONTRACTOR SHALL SEAL JOINTS WITH POLYURETHANE SEALANT, MEETING NDOT APPROVED PRODUCTS LIST.

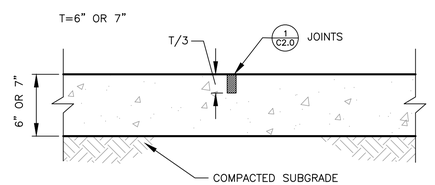
4 C2.0 THICKENED EDGE CONCRETE PAVEMENT

NO SCALE



5 C2.0 TRANSITION SECTION

NO SCALE



NOTES:
1. CONTRACTOR SHALL SEAL JOINTS WITH POLYURETHANE SEALANT, MEETING NDOT APPROVED PRODUCTS LIST.

6 C2.0 6" OR 7" CONCRETE PAVEMENT

NO SCALE

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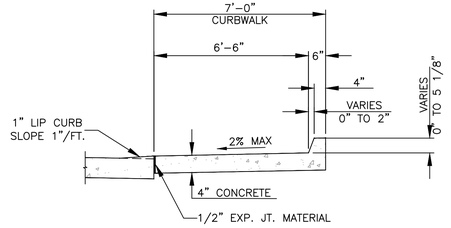
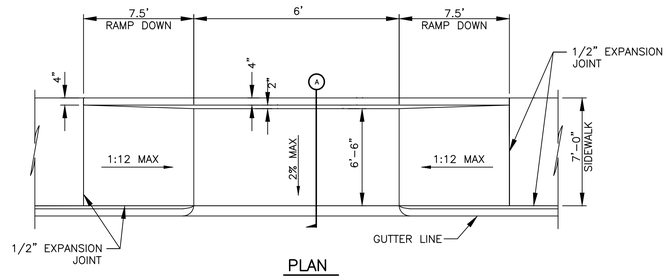
SHEET NO. C2.0



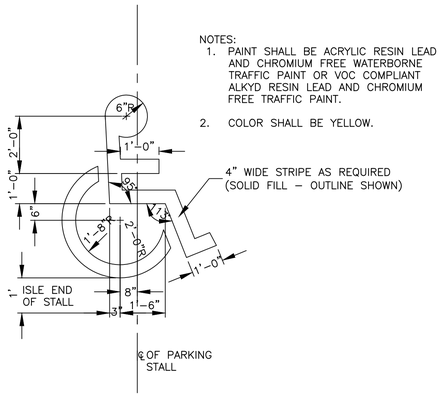
SECTION A



PLAN

1 / C2.1 SIDEWALK RAMP DETAIL

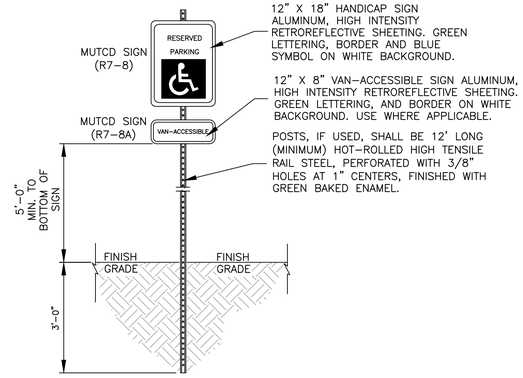
NO SCALE



NOTES:
1. PAINT SHALL BE ACRYLIC RESIN LEAD AND CHROMIUM FREE WATERBORNE TRAFFIC PAINT OR VOC COMPLIANT ALKYD RESIN LEAD AND CHROMIUM FREE TRAFFIC PAINT.
2. COLOR SHALL BE YELLOW.

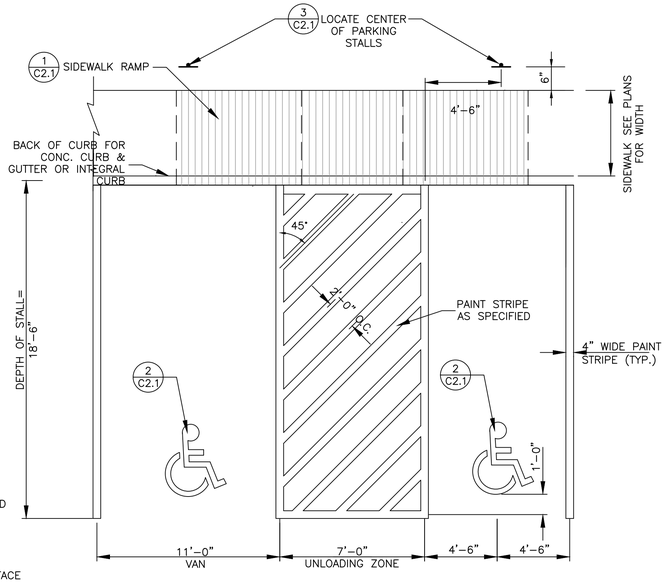
2 / C2.1 HANDICAP PAVEMENT SYMBOL

NO SCALE



3 / C2.1 HANDICAP SIGN

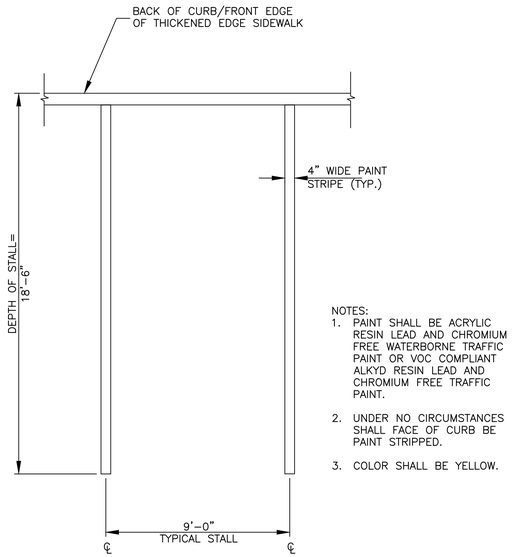
NO SCALE



NOTES:
1. PAINT SHALL BE ACRYLIC RESIN LEAD AND CHROMIUM FREE WATERBORNE TRAFFIC PAINT OR VOC COMPLIANT ALKYD RESIN LEAD AND CHROMIUM FREE TRAFFIC PAINT.
2. UNDER NO CIRCUMSTANCES SHALL FACE OF CURB BE PAINT STRIPED.
3. PLACE SIGN 36" BEHIND BACK OF CURB IF NO SIDEWALK IS PRESENT.
4. COLOR SHALL BE YELLOW

4 / C2.1 HANDICAP PARKING STALL PAINT STRIPING

NO SCALE



NOTES:
1. PAINT SHALL BE ACRYLIC RESIN LEAD AND CHROMIUM FREE WATERBORNE TRAFFIC PAINT OR VOC COMPLIANT ALKYD RESIN LEAD AND CHROMIUM FREE TRAFFIC PAINT.
2. UNDER NO CIRCUMSTANCES SHALL FACE OF CURB BE PAINT STRIPPED.
3. COLOR SHALL BE YELLOW.

5 / C2.1 PARKING STALL PAINT STRIPING

NO SCALE

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MISC DETAILS

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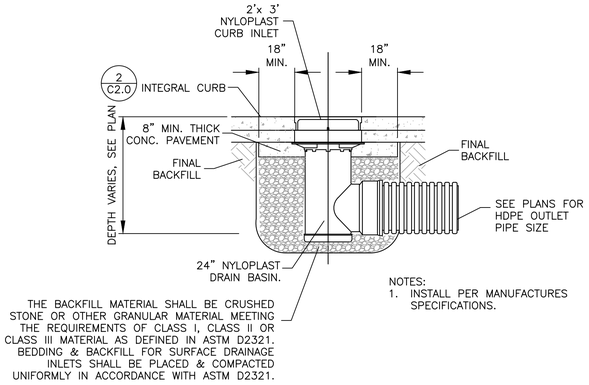
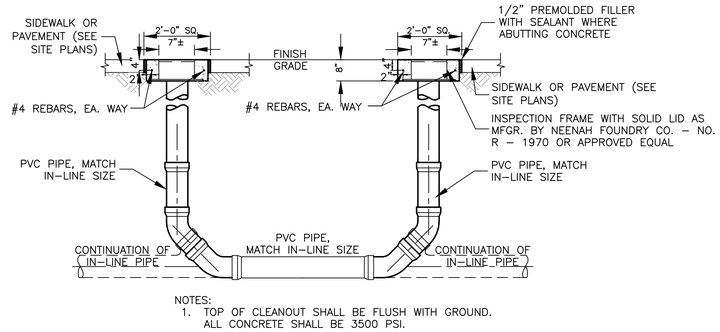


1 C2.2 NYLOPLAST CURB INLET

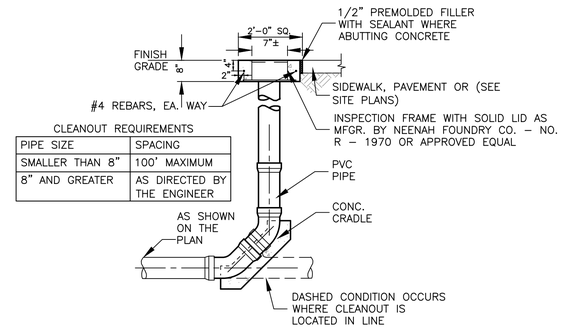
NO SCALE



NOTES:
1. TOP OF CLEANOUT SHALL BE FLUSH WITH GROUND. ALL CONCRETE SHALL BE 3500 PSI.

2 C2.2 DOUBLE CLEANOUT DETAIL

NO SCALE



CLEANOUT REQUIREMENTS

PIPE SIZE	SPACING
SMALLER THAN 8"	100' MAXIMUM
8" AND GREATER	AS DIRECTED BY THE ENGINEER

3 C2.2 CLEANOUT DETAIL

NO SCALE

DIP OR RCP	ABS OR PVC (COMPOSITE WALL)	ABS, PVC, OR HDPE (SOLID WALL)

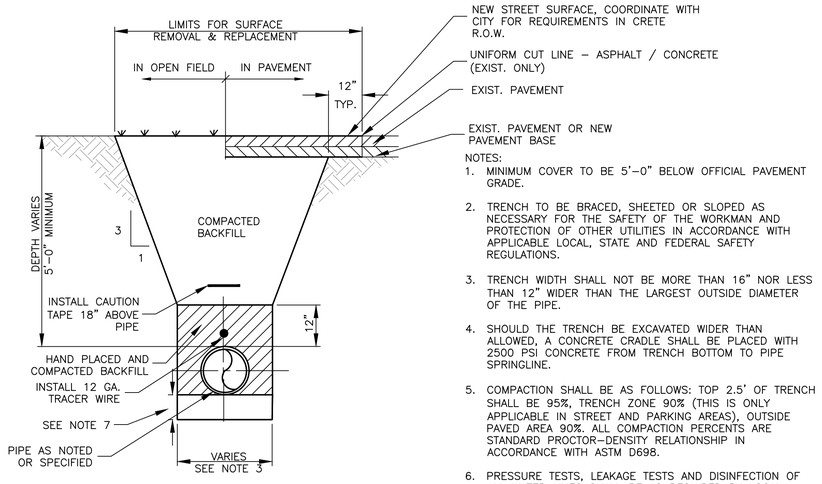
NOTES:
1. TRENCH WIDTH: MINIMUM = PIPE O.D. PLUS 1'–4"
   MAXIMUM = PIPE O.D. PLUS 2'–0"
2. CRUSHED ROCK FOR PIPE BEDDING FOR PIPES 15 INCHES IN DIAMETER AND SMALLER SHALL CONFORM TO GRADATIONS AS FOLLOWS:

SIEVE SIZE	PERCENTAGE PASSING
3/4 INCH	100
3/8 INCH	60 ± 15
NO. 4	30 ± 15
NO. 10	15 ± 10
NO. 200	5 ± 5

3. CRUSHED ROCK FOR PIPE BEDDING SHALL BE SUBSIDIARY TO THE COST OF THE PIPE. IF UNSTABLE TRENCH BOTTOM SUBGRADE CONDITIONS ARE ENCOUNTERED, ADDITIONAL CRUSHED ROCK FOR BEDDING AND EXTENT SHALL BE AS DIRECTED BY THE ENGINEER. THE COST, MEASUREMENT, AND PAYMENT FOR ADDITIONAL CRUSHED ROCK FOR UNSTABLE TRENCH BOTTOM SUBGRADE PIPE BEDDING CONDITIONS SHALL BE PAID FOR PER TON OF CRUSHED ROCK PLACED.
4. TRENCH SHALL BE BRACED, SHEETED OR SLOPED AS NECESSARY FOR THE SAFETY OF WORKMEN AND PROTECTION OF OTHER UTILITIES IN ACCORDANCE WITH APPLICABLE LOCAL, STATE, AND FEDERAL REGULATIONS.
5. HDPE SHOWN IS FOR DRAINAGE AND NOT WELL FIELD. WHEN APPLICABLE, SEE MECHANICAL PLANS FOR WELL FIELD INFORMATION.

4 C2.2 PIPE ENVELOPE

NO SCALE



NOTES:
1. MINIMUM COVER TO BE 5'–0" BELOW OFFICIAL PAVEMENT GRADE.
2. TRENCH TO BE BRACED, SHEETED OR SLOPED AS NECESSARY FOR THE SAFETY OF THE WORKMAN AND PROTECTION OF OTHER UTILITIES IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL SAFETY REGULATIONS.
3. TRENCH WIDTH SHALL NOT BE MORE THAN 16" NOR LESS THAN 12" WIDER THAN THE LARGEST OUTSIDE DIAMETER OF THE PIPE.
4. SHOULD THE TRENCH BE EXCAVATED WIDER THAN ALLOWED, A CONCRETE CRADLE SHALL BE PLACED WITH 2500 PSI CONCRETE FROM TRENCH BOTTOM TO PIPE SPRINGLINE.
5. COMPACTION SHALL BE AS FOLLOWS: TOP 2.5' OF TRENCH SHALL BE 95%, TRENCH ZONE 90% (THIS IS ONLY APPLICABLE IN STREET AND PARKING AREAS), OUTSIDE PAVED AREA 90%. ALL COMPACTION PERCENTS ARE STANDARD PROCTOR–DENSITY RELATIONSHIP IN ACCORDANCE WITH ASTM D698.
6. PRESSURE TESTS, LEAKAGE TESTS AND DISINFECTION OF ALL WATER LINES SHALL BE AS REQUIRED BY LOCAL STANDARDS AND REQUIREMENTS.
7. IN LIEU OF HAND PLACED AND COMPACTED BACKFILL, ALL WATER LINES 3" OR BIGGER SHALL BE BEDDED WITH CRUSHED ROCK 6" BELOW TO 1' ABOVE TOP OF PIPE.

5 C2.2 PIPE ENVELOPE–WATER

NO SCALE

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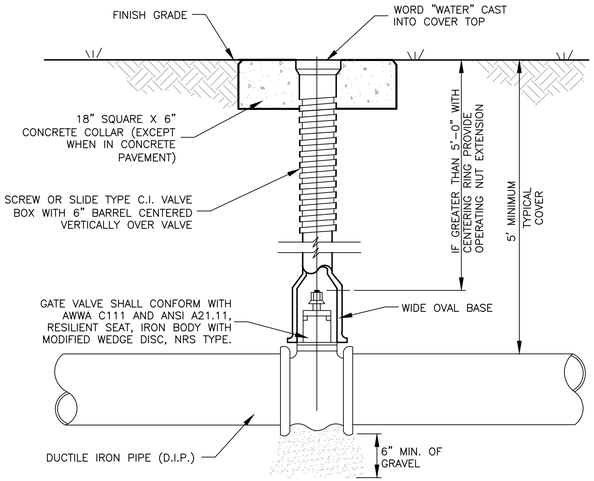
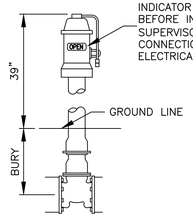


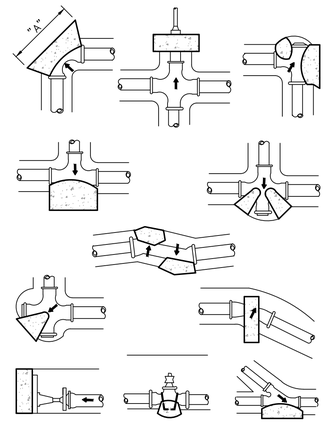
NOTES:
1. FITTING SHALL BE WRAPPED WITH 8 MIL MINIMUM THICKNESS POLYETHYLENE.
2. REDUCERS SHALL BE REQUIRED FOR CASES WHERE VALVE IS DOWN SIZED FROM PIPING.

1 / C2.3 WATER VALVE BOX
NO SCALE



CONTRACTOR SHALL SUBMIT PROPOSED POST INDICATOR VALVE TO OWNER FOR APPROVAL BEFORE INSTALLATION OR ORDERING P.I.V. INSTALL SUPERVISORY/TAMPER SWITCH FOR ELECTRICAL CONNECTION FROM P.I.V. TO FIRE ALARM SYSTEM. ELECTRICAL CONNECTIONS BY ELECTRICIAN.

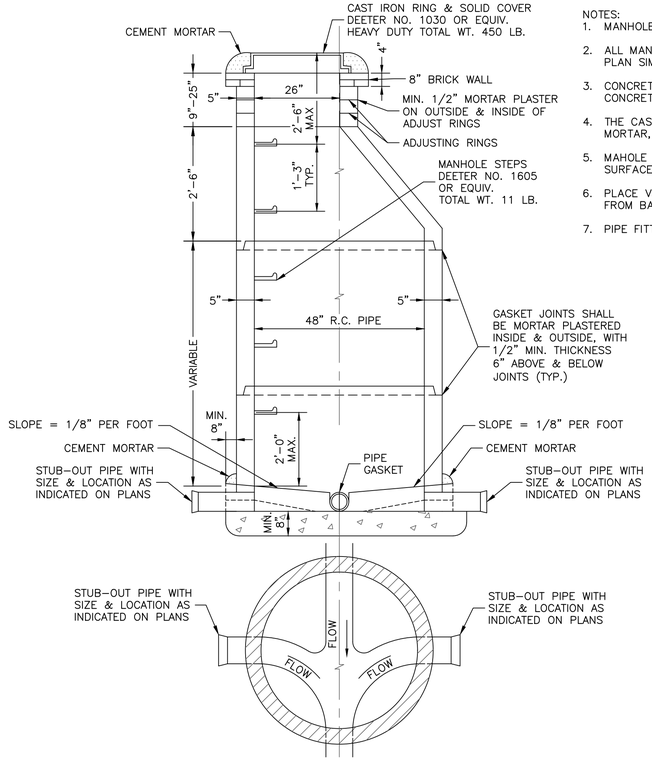
2 / C2.3 POST INDICATOR VALVE DETAIL
NO SCALE



PIPE SIZE	BEARING AREA OF BLOCK "A" SQ. FT.				
	TEE & END	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND
4	4.9	6.9	3.8	1.9	1.0
6	8.4	11.8	6.4	3.3	1.8
8	13.7	19.3	10.5	5.4	2.7
10	19.4	27.3	14.9	7.7	3.9
12	26.3	37.0	20.2	10.3	5.3

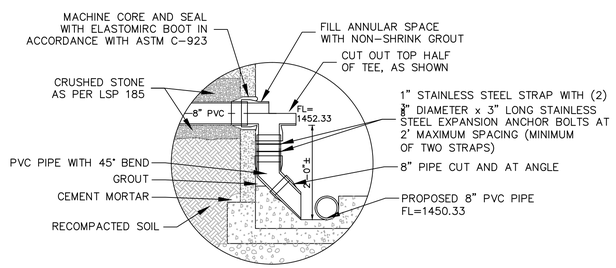
NOTES:
1. ARROW INDICATES DIRECTION OF THRUST.
2. BEAR THRUST BLOCKS AGAINST UNDISTURBED EARTH.
3. DO NOT EXTEND CONCRETE BEYOND BELL FITTING, OR RESTRICT MECHANICAL JOINT BOLT REMOVAL.
4. REQUIRED THRUST BLOCK AREAS "A" ARE BASED ON A SOIL BEARING PRESSURE OF 2000 PSF AND A DESIGN PRESSURE OF 250 PSI.

3 / C2.3 TYPICAL THRUST BLOCKING
NO SCALE



NOTES:
1. MANHOLES SHALL BE CONSTRUCTED OF CONCRETE.
2. ALL MANHOLES ARE TO BE CONSTRUCTED CIRCULAR IN PLAN SIMILAR TO DRAWING.
3. CONCRETE IN MANHOLE SHALL BE NDOT CLASS 47-B CONCRETE.
4. THE CAST IRON MANHOLE RING SHALL SET IN A BED OF MORTAR, AND CAREFULLY ADJUST TO PROPOSED GRADE.
5. MAHOLE FLOOR SHALL BE FINISHED TO A SMOOTH SURFACE.
6. PLACE VERTICAL SIDE OF TAPER SECTION FARTHEST FROM BACK OF CURB.
7. PIPE FITTINGS SHALL BE SOLVENT WELDED.

4 / C2.3 SANITARY SEWER MANHOLE
NO SCALE



DROP DETAIL ON SANITARY SEWER MANHOLE INSIDE
5 / C2.3
NO SCALE

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